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December 8, 2011

Mr. John Nohrstedt
U.S. Army Corps of Engineers
Engineering and Support Center, Huntsville
Attn: CEHNC-FS-IS
4820 University Square
Huntsville, Alabama 35816-1822

SUBJECT: Final Construction Completion Report for the Radiological Waste Burial Pits Site (SEAD-12), Seneca Army Depot Activity, Romulus, New York; Contract W912DY-08-D-0003, Delivery Order 0003

Dear Mr. Nohrstedt:

Parsons Infrastructure & Technology Group Inc. (Parsons) is pleased to submit the Final Construction Completion Report for the Radiological Waste Burial Pits Site (SEAD-12) located at the Seneca Army Depot Activity in Romulus, New York. This work was performed in accordance with the Scope of Work for Delivery Order 0003 under Contract W912DY-08-D-0003. The subject document was revised to address USEPA comments on the Human Health Risk Assessment and the radiological survey results and risk assessment.

Parsons appreciates the opportunity to provide you with the Report for this work. Should you have any questions, please do not hesitate to call me at (617) 449-1405 to discuss them.

Sincerely,

Todd Heino, P.E., Vice President
Program Manager

Enclosures

cc: S. Absolom, SEDA
K. Hoddinott, USACHPPM
R. Battaglia, USACE, NY
T. Battaglia, USACE, NY

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December 8, 2011

Mr. Julio Vazquez
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New York State Department of Health
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Troy, NY 12180

SUBJECT: Final Construction Completion Report for the Radiological Waste Burial Pits Site (SEAD-12), Seneca Army Depot Activity, Romulus, New York; EPA Site ID# NY0213820830 and NY Site ID# 8-50-006

Dear Mr. Vazquez/Mr. Gupta/Mr. Sergott:

Parsons Infrastructure & Technology Group Inc. (Parsons) is pleased to submit the Final Construction Completion Report for the Radiological Waste Burial Pits Site (SEAD-12) located at the Seneca Army Depot Activity in Romulus, New York (EPA Site ID# NY0213820830 and NY Site ID# 8-50-006). The subject document was revised to address USEPA comments on the Human Health Risk Assessment and the radiological survey results and risk assessment.

Should you have any questions, please do not hesitate to call me at (617) 449-1405 to discuss them.

Sincerely,

Todd Heino, P.E., Vice President
Program Manager

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cc: M. Powers, TechLaw
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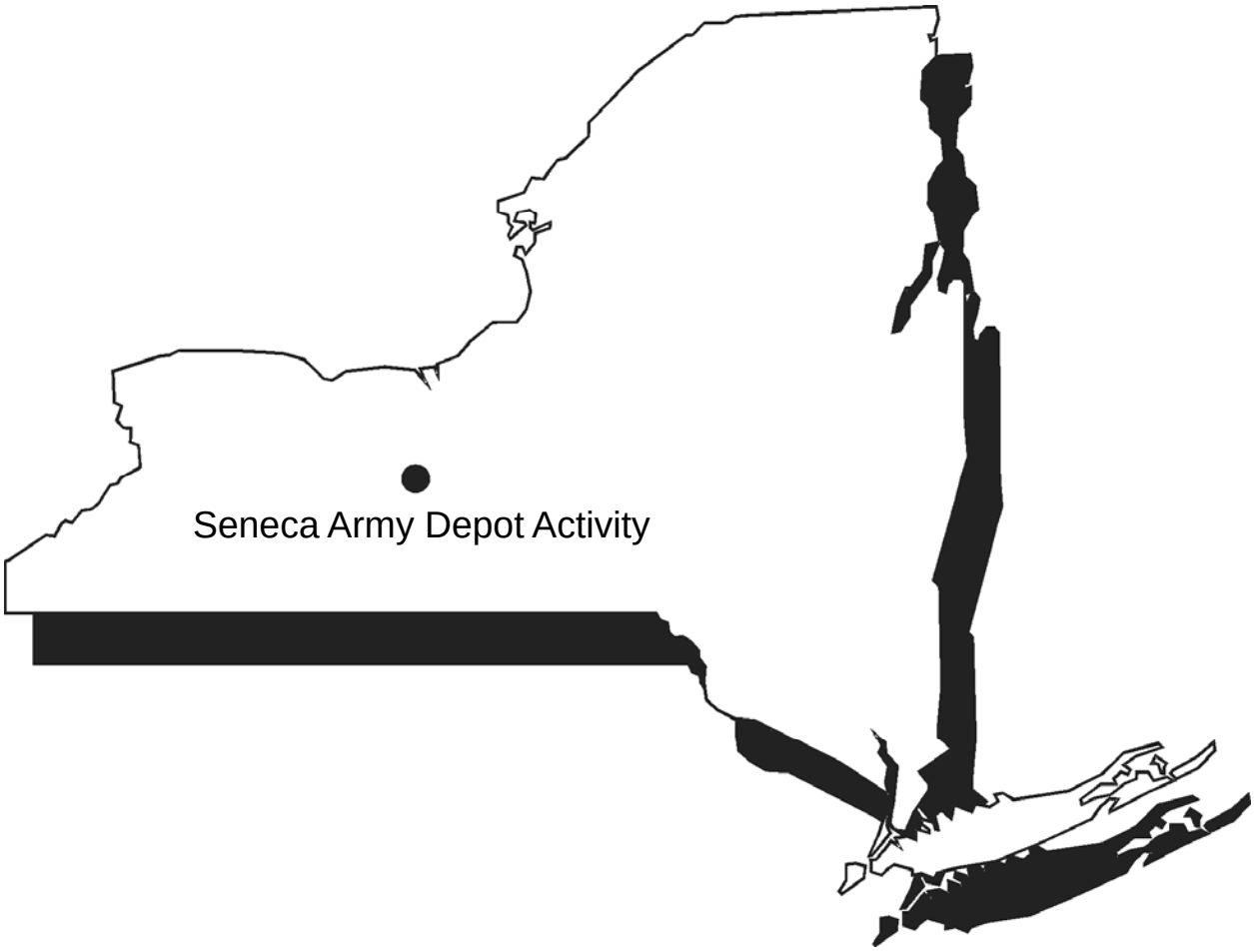
Seneca Army Depot Activity
Romulus, NY



FINAL
CONSTRUCTION COMPLETION REPORT

REMOVAL ACTION AT THE WASTE BURIAL RADIOLOGICAL SITES (SEAD-12)
SENECA ARMY DEPOT ACTIVITY

Contract No. W912DY-08-D-0003
Task Order No. 0003
EPA Site ID# NY0213820830
NY Site ID# 8-50-006

PARSONS

December 2011

FINAL

CONSTRUCTION COMPLETION REPORT

RADIOLOGICAL WASTE BURIAL PIT SITE (SEAD-12)
SENECA ARMY DEPOT ACTIVITY, ROMULUS, NEW YORK

Prepared for:

U.S. ARMY CORPS OF ENGINEERS, ENGINEERING AND SUPPORT CENTER
HUNTSVILLE, ALABAMA

and

SENECA ARMY DEPOT ACTIVITY
ROMULUS, NEW YORK

Prepared by:

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Boston, MA 02110

Contract Number W912DY-08-D-0003
Task Order No. 0003
EPA Site ID# NY0213820830
NY Site ID# 8-50-006

December 2011

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1.0 INTRODUCTION

This Construction Completion Report (CCR) has been prepared to provide record documentation of a removal action (RA) that was conducted at three historic burial pits (i.e., Pits A, B, and C) within the Radiological Waste Burial Pit site (SEAD-12) at the Seneca Army Depot Activity (SEDA or Depot) in Seneca County, New York. Parsons Infrastructure & Technology Group Inc. (Parsons) was tasked under the United States Army Corps of Engineers (USACE) Contract Number W912DY-08-D-0003, Task Order No. 0003 to perform the removal action of military-related items from the burial pit locations within the SEAD-12 site.

The Seneca Army Depot is designated by the U.S. Environmental Protection Agency (EPA) as a federal facility on the National Priorities List (NPL) and by the State of New York as an inactive hazardous waste site. SEAD-12 is listed as one of the historic solid waste management units (SWMUs) within the Depot, and thus is subject to the requirements of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). As such, all work performed within the bounds of SEAD-12 that has potential environmental impacts is subject to review and approval by representatives of the EPA and the New York State Department of Conservation (NYSDEC).

Historic information and past geophysical and environmental investigations of SEAD-12 indicated that three burial pits (i.e., A, B, and C) were present in the northeastern portion of SEAD-12. Prior test pitting operations conducted as part of the SEAD-12 expanded site inspection (ESI) and the SEAD-12 remedial investigation (RI) indicated that buried material contained in the burial pits included an undefined quantity of military-related debris, other conventional forms of debris (e.g., construction and demolition [C&D] debris, miscellaneous debris, etc.), and fill material, all of which was covered by known thicknesses of native, overburden soil. The chemical analysis of soil and fill samples collected during the ESI and RI burial pit investigations indicated that finite concentrations of hazardous substances were present in the soil and the fill found at the burial pit sites, but that the concentrations identified did not pose any unacceptable levels of human health hazard or risk or threats to the environment. Further, characterization of radiologic constituents found in the burial pits indicated that levels of the residual radioactivity were generally consistent with the prevailing background levels in the region, and that no undo level of additional risk or hazard was associated with the materials that were present in the burial pits.

In 1995, the Department of Defense (DoD) designated the Seneca Army Depot Activity for closure under its Base Realignment and Closure (BRAC) process, and the Depot's military mission ceased in 2000. Since its designation for closure, the Army has been working to complete necessary investigations and required remedial actions to address environmental conditions and concerns previously identified at the Depot and to prepare the property for transfer to other parties for beneficial reuse. Since 2000, more than 8,500 acres of land, including portions of SEAD-12, have successfully been transferred or leased to other parties for alternative uses. One of the new owners of transferred property at the Depot is the Seneca County Industrial Development Authority (SCIDA). Recently, the SCIDA leased a portion of SEAD-12 to a private user who is now occupying buildings

and land that are located to the northwest and west of the historic Radiological Waste Burial Pit locations. The tenant has indicated that they are interested in increasing their holdings in SEAD-12 to allow for future expansion of their business. Such an expansion could result in greater access to all portions of SEAD-12, and could involve the eventual construction of new facilities in support of their continuing business.

In response to this potential expanded use of the SEAD-12 site, the Army decided that the contents of the historic burial pits should be excavated, so that they could be examined to determine what material was actually present in the burial pits and to allow the Army to secure any military-related materials contained prior to releasing the land to new users. In addition, the excavation of the historic burial pits would allow further analysis of all of the buried material (military-related, C&D, and miscellaneous debris, fill, etc.) to verify that unacceptable levels of previously unidentified contaminants were not present in the burial pits.

1.1 PURPOSE OF THE CONSTRUCTION COMPLETION REPORT

This CCR describes the actions performed during the excavation of three historic burial pit locations within SEAD-12. This CCR presents laboratory results, survey data, drawings, and associated documentation to demonstrate that the removal action was conducted and completed in a manner that is consistent with the requirements of a removal action that is performed under CERCLA.

The Army's goal at the historic Burial Pit locations within SEAD-12 was to prevent future access and exposure to buried military-related items by removing and securing them, pending any subsequent demilitarization and disposal. In addition, during the recovery of the military-related items and objects, if previously unidentified levels of hazardous substances were found associated and commingled with the buried debris and were determined to pose an unacceptable threat or risk to the environment or human health, the removal action would provide a mechanism through which the hazardous substances could be removed, treated, and disposed to mitigate or eliminate the concern.

1.2 DESCRIPTION OF THE SENECA ARMY DEPOT

The SEDA is a former military facility that was owned by the U.S. Government and operated by the Army between 1941 and 2000 when the SEDA's military mission ceased. The Depot occupied approximately 10,600 acres of land in the towns of Varick and Romulus in Seneca County, New York (see **Figure 1-1**). The Depot's historic military mission included receipt, storage, distribution, maintenance, and demilitarization of conventional ammunition, explosives, and special weapons.

In September 2000 the Army assumed the role of caretaker of the former Depot. As caretaker, the Army maintains control of the Depot's land until parcels are transferred to new owners for alternate uses. Areas in the Depot that are subject to continuing investigation and remedial action under the requirements of CERCLA remain under the control of the Army; however, to date more than 8,500 acres of the former Depot have been transferred to the Seneca County Industrial Development Authority (SCIDA), the State of New York, and other federal entities for reuse.

1.2.1 Future Land Use

The Seneca County Board of Supervisors established the Seneca Army Depot Local Redevelopment Authority (LRA) in October 1995 after the Depot was designated for closure under the DoD's BRAC process to prepare a plan for redevelopment of the SEDA property. The Land Reuse Plan was adopted and approved by the LRA and the Seneca County Board of Supervisors in 1996. The Reuse Plan designated parcels of land in the Depot into eight categories of preferred reuse: Planned Industrial/Office Development (PID), Warehousing, Prison, Conservation/Recreation, Institutional, Housing, Airfield/Special Events, and Federal to Federal Transfer. In 2005, the SCIDA revised the planned future use of Depot property by modifying portions of the original Conservation/Recreation parcels to include Institutional Training, Residential/Resort, Green Energy, Development Reserve, Training Area, and Utility uses. The planned future land use for SEAD-12 is currently designated as Institutional/Training as shown on **Figure 1-2**.

1.3 DESCRIPTION OF SEAD-12

SEAD-12 is located in the north central portion of the former SEDA within the former Weapons Storage Area (WSA) facility, also known as the "Q Area". Investigation of SEAD-12 originally began as the investigation of two separate areas, formerly designated as SEAD-12A (Radioactive Waste Burial Site – northeast corner of SEAD 12) and SEAD-12B (Radioactive Waste Burial Site – northeast of Buildings 803, 804, and 805). Locations of these two historic SEADs are shown in **Figure 1-3**. SEAD-12A encompassed an area measuring approximately 1,500 feet long by 900 feet wide that was suspected to have included up to five separate small burial pits. SEAD-12B encompassed an area measuring 300 feet long by 300 feet wide, and it was suspected to have included a 5,000-gallon storage tank and a small dry waste pit.

After the completion of the ESI of SEAD-12A and SEAD-12B in 1995, the bounds of SEAD-12 was expanded to that which is shown on **Figure 1-3** based on the similarity of the chemicals found at the two historic SEADs and the general history of the WSA, which suggested that similar constituents were likely to exist throughout the larger area. As redefined, SEAD-12 was enlarged to encompass an area of approximately 360 acres, which included all of the land of the original SEAD-12A and 12B, and most of the land located north of the storage igloos that are located within the boundary of the WSA. The only area not included within the bounds of the redefined SEAD-12, is land that is designated as SEAD-63, the Miscellaneous Components Burial Site, which is located in northwestern corner of the WSA.

Past environmental investigations and surveys within the greater SEAD-12 area, including the collection and analysis of soil, sediment, surface water, and groundwater samples for chemical contaminants and the real-time scanning and sampling of building surfaces and other environmental media for radiological constituents, focused on nine separate areas within the overall site. These sites are shown on **Figure 1-3** and are listed below:

- Building 819 and EM-27;
- Building 815, Building 816, and EM-28;

- Disposal Pits A/B (a portion of the former SEAD-12A);
- Disposal Pit C (a portion of former SEAD-12A);
- Dry Waste Disposal Pit (former SEAD-12B);
- EM-5;
- EM-6;
- Open areas; and
- Building 715 Wastewater Treatment Plant.

The results of the past environmental investigations indicated that with the sole exception of a small area in the vicinity of Building 813/814, there were no locations within SEAD-12 where residual contamination was identified at levels that posed unacceptable levels of risk or hazard to the environment or human health. In the vicinity of Building 813/814, groundwater in a single monitoring well (i.e., MW12-37) was found to be contaminated with trichloroethylene at a concentration above the federal maximum contaminant level (MCL) and the NYSDEC Class GA groundwater standard. A subsequent evaluation of the Building 813/814 and MW12-37 area including additional analysis of groundwater samples and the excavation and sampling and analysis of soil surrounding the affected well indicated that the groundwater contamination was not spread beyond the immediate area of the affected well, and that the source of the noted groundwater contamination appeared to be associated with soil contamination that extended back beneath the buildings. As a result of this finding, two land use controls will be implemented, monitored, and maintained at this location pending a future determination that the potential risk present at this location has been eliminated.

1.3.1 Location

The historic radiological burial pits identified as Disposal Pit A, B, and C, are all located in the area previously designated as SEAD-12A, which is located in the northeastern portion of SEAD-12. SEAD-12A is bounded to the north and east by the WSA's high-security fence line and Patrol Road, to the south by a wooded area that is located to the north of Buildings 813/814 and 815 between the WSA's eastern security fence and Service Road No. 1, and to the west by a narrow, north-south oriented row of trees that are located roughly 200 feet east of Service Road No. 1. Prior to the RA, land within SEAD-12A was classified as generally open and vacant, with intermixed areas that were either vegetated with grass, weeds, and scrub brush or free of vegetative cover.

The exact locations of the historic burial pits were identified using electromagnetic (EM) geophysical surveys that were performed as part of the SEAD-12 ESI. The locations of the identified burial pits areas are shown on **Figure 1-4**. Disposal Pit A and B are located in the southern part of the extended SEAD-12A open area, near the wooded area that forms the southern boundary of the overall disposal site area. The location of the tree line is approximated by the white area that is observed on **Figure 1-4**, while the largest red/pink/yellow feature is designated as Pit A and the smaller colored feature is Pit B located to the west of the larger Pit A. Disposal Pit C is located to the north and west of

Disposal Pit A and B, immediately east of the north-to-south oriented row of trees. Pit C is comprised of two separate components, Pit C1 which is the northernmost area that is shown by the blue coloration, and Pit C2 which is the southern area signified by yellow/pink/red and blue areas. The geophysical anomaly that is located to the north and east of Pit A, near the eastern perimeter fence is the remains of a historic security emplacement. The blue and yellow geophysical anomaly that is located west of Pits A and B and southwest of Pit C2 along Service Road No. 1 is a culvert that allows flow within an unnamed creek to flow from the east to the west.

1.3.2 Site Conditions

The regional topography in the vicinity of the burial pits is generally highest in the southeastern corner of the open area, east of Pits A and B, and slopes downward in a radial pattern to the north, west, east, and southwest. The small unnamed creek that flows under Service Road No. 1 passes to the south and southwest of the topographic high point, and through the wooded area south of the open area. The drainage ditches running parallel to Service Road No. 1 discharge captured surface water runoff into the unnamed creek at locations adjacent to the road culvert.

As is reported in the SEAD-12 RI Report, the site geology consists of gray Devonian shale bedrock having a thin upper weathered zone that is overlain by a Pleistocene age till. Topsoil covers much of the site. In developed areas, the till or weathered bedrock (where the till has been removed) is overlain by fill material consisting of reworked till. This stratigraphy is consistent over the entire site.

Figure 1-5 shows the location of geologic cross-sections that were developed for SEAD-12 during the RI, and two of these sections identified as B-B' (northern east-west section) and C-C' (north-south section) transect a portion of the Burial Pit area. The eastern part of transect B-B' (between the locations of MW-12-8 and MW12-12, see **Figure 1-6**) cuts through the location of Pits A and B and shows that as much as 10 – 12 feet of fill may be present in the immediate area of Disposal Pits A and B, and that this material overlies 1 to 2 feet of weathered shale, which in turn overlies competent shale. A localized bedrock high exists to the east of Burial Pit A, between the pit location and the eastern security fence. Beyond MW12-12, section B-B' turns northwards where it transects Pit C1 at location MW12-33 that is near the middle of the excavation where the stratigraphic information shows that roughly 6 feet of fill overlies an equal thickness of native till which in turn is above 1 to 2 feet of weather shale and then competent shale.

Similar cross sectional data from the area of Disposal Pits C1 and C2 (See northern end of **Figure 1-7** between locations MW12-34 and MW12-33) indicates that between 10 and 12 feet of fill and till overlies each 2 feet of fractured shale, which in turn overlies competent shale. The thicknesses of the fill and till layers each vary from 3 to 7 feet over the length of Pit C1 and thins out as it proceeds beyond the southern bound of Pit C2 at location MW12-14.

Historical groundwater data for SEAD-12 indicates that groundwater flow is predominantly to the west and northwest across the majority of the site. In the northeast corner of SEAD-12 in the vicinity of Burial Pits A, B, and C regional groundwater flow appears to be to the north and northwest. Local groundwater flow in the immediate vicinity of a relative high near Burial Pit C is to the north, northeast,

and northwest. Groundwater elevations range from a high of approximately 5.48 feet bgs (MW12-2) in the east, to a low of approximately 4.80 feet bgs (MW12-23) on the western side of the site. The horizontal groundwater gradient is steepest in the southern and central portions of the site at approximately 0.015 feet per foot (ft/ft). The horizontal groundwater gradient is flattest in the northern portion of the site at 0.007 ft/ft.

1.3.3 History

Land within SEAD-12 was believed to have been used for the disposal of laboratory wastes that originated from areas and operations located within the WSA. Available information suggests that the burial of material in this area occurred between the construction of the Depot in 1941 and 1980. In 1986, screening for radiological materials was performed in the area and a large amount of laboratory trash was excavated from five pits located in the southeastern corner of SEAD-12A. The waste was found in several concrete and one metal pipe, which were found under large concrete slabs (4 – 6 inches thick) that were apparent from the ground surface. The identified wastes were removed from the excavated pits and shipped off-site to an authorized radioactive waste landfill in December 1987.

The area of the Burial Pits was investigated again in 1994 as part of the ESI at the site. During this work, geophysical surveys (EM, ground penetrating radar [GPR], and seismic refraction), test pitting, and monitoring well installations were performed, and samples of soil, groundwater, surface water and sediment were collected and characterized for radiological and chemical contaminants. The results of this work suggested that buried materials were likely present at four locations within the greater SEAD-12A area (i.e., At Pits A and B and two locations in Pit C). Subsequent test pitting at these locations confirmed the presence of buried objects, including military-related items. The preliminary analysis of samples indicated that hazardous substances were present in all of the sampled media. As a result of this information, the Army expanded the focus of continuing investigations within the WSA to include additional area and buildings and authorized performance of a remedial investigation including a radiological survey throughout the larger SEAD-12 area.

The SEAD-12 RI was performed between 1998 and 2002. During the RI, the expanded SEAD-12 area (360 acres) was evaluated and expanded sampling and analysis of soil, groundwater, surface water and sediment were performed at the nine locations described above in **Section 1.3**. Sampling and analysis included the characterization of chemical and radiological constituents. At the conclusion of the RI, which included the results of the human health and ecological risk assessment, it was concluded that only two areas within the greater SEAD-12 footprint that required further consideration due to residual levels of contamination identified. These areas included EM-5 due to the apparent presence of residual levels of radiological constituents in excess of background, and in the vicinity of Building 813/814 due to the presence of trichloroethylene in the groundwater at well location MW12-237. The land including Burial Pits A, B, and C was not found to pose any unacceptable level of risk or inappropriate levels of non-carcinogenic hazard due to residual levels of contamination. However, the Army did acknowledge that additional work was required at Burial Pits A, B, and C to deal with the potential presence of military-related material in the historic burial pits.

1.4 REPORT ORGANIZATION

The first section of this report serves as an introduction to the CCR and provides SEAD-12 site history. **Section 2** details the pre-construction activities completed at SEAD-12. **Section 3** summarizes the construction activities, including the earthwork and confirmatory sample collection and analysis. **Section 4** addresses differences in actions conducted at SEAD-12 from the actions detailed in the Work Plan. **Section 5** presents a summary of the post-construction activities. **Section 6** presents the conclusions and recommendations. References are provided in **Section 7**.

Appendix A includes the Daily Reports; **Appendix B** provides chemical and radiological confirmatory soil sample results; **Appendix C** presents the waste characterization results for soil sent to the landfill; **Appendix D** provides the Health Physicist's (Cabrera Services, Inc.) Final Status Survey Report and summary of field support activities; **Appendix E** provides chain of custody documentation for the chemical and radiological analytical results; **Appendix F** presents case narratives for chemical constituents of concern; **Appendix G** presents the data validation memos for chemical contaminants of concern; **Appendix H** presents the update to the SEAD-12 RI Report human health risk assessment; **Appendix I** presents ambient air instrumentation dust monitoring results during the construction period; **Appendix J** presents the waste material manifests and truck load out log; **Appendix K** provides the analytical results for the water collected at the work site; and **Appendix L** includes the response to regulatory comments.

2.0 PRE-CONSTRUCTION ACTIVITIES

This section discusses the activities performed in preparation of the removal action implementation at the Burial Pits site in SEAD-12. These activities included a pre-mobilization site visit; a pre-construction kick-off meeting; a health and safety meeting; establishment of site access and security; clearing requirements; utility clearance; establishment of work and staging areas; staking and surveying; control of run-on and run-off waters; establishment of erosion and sedimentation controls; well abandonment; and disposal characterization and approval.

2.1 PRE-MOBILIZATION SITE VISIT

Personnel from Parsons visited the Depot during the week of June 29, 2009 to establish work zone boundaries, to lay out work zone grids, to conduct a pre-action topographic survey of the area, and to coordinate site access to the work zone. During this visit, Parsons' personnel also coordinated the mowing of the work zone with the Army and arranged to have a vendor spray the area to kill poison ivy that was prevalent within the work area site.

2.2 PRE-CONSTRUCTION MEETING

A project kick-off meeting was held at SEDA on July 6, 2009. Attendees included Parsons' Site Manager (SM), Site Health and Safety/Quality Control (SHS/QC Officer) and Project Manager (PM, by phone); the United States Army Corps of Engineers (USACE), Huntsville Center's Contracting Officer Representative (COR, by phone); the USACE New York District's Construction Manager; and personnel of the earthwork subcontractor S. St. George Enterprises, Inc. (St. George) of Fredonia, NY. SEDA, Parsons, and St. George coordinated administrative issues related to the project to ensure that the RA would proceed and be executed smoothly.

2.3 HEALTH AND SAFETY MEETING

All field activities conducted during the removal action were performed in general accordance with the site-specific health and safety plan (HSP) "Accident Prevention Plan and Generic Site Wide Health and Safety Plan for Seneca Army Depot Activity" (Parsons, 2005), which was prepared in accordance with Parsons' Safety, Health, and Risk Program (SHARP) Manual. The aforementioned generic HSP was supplemented with SEAD-12 specific information that was presented in the Supplemental Health and Safety Plan, Appendix A**,** *Draft Work Plan for Removal Action at the Waste Burial Radiological Sites (SEAD-12)* (Parsons, May 2009).

Access to the Parsons' Generic and Site-Specific Health and Safety Plan was provided to representatives of S. St. George and Cabrera Services, Inc. (Cabrera) during the development of their site-specific Health and Safety Plans for work at SEAD-12. St. George and Cabrera were each required to prepare and provide to Parsons for review, copies of their project-specific health and safety plans for the planned work at SEAD-12.

A health and safety indoctrination meeting was held at SEDA for all field crew members on July 13, 2009 prior to the commencement of intrusive construction activities at the SEAD-12 site. Parsons, St. George, and Cabrera personnel attended the health and safety meeting. A review of the project health

and safety requirements and procedures outlined in the Generic and Site-Specific Health and Safety Plan for Seneca Army Depot Activity and SEAD-12 was performed. Project coordination and communication and the scope of work were discussed.

Each workday morning, a brief "tool box" or "tail-gate" health and safety meeting was held prior to commencing the day's construction. The meeting topics addressed potential health and safety hazards specific to the site and the planned daily activities. Topics discussed included; ergonomics of hand held instruments; working in slippery conditions; heat stress and hydration; hot and cold weather procedures; slips, trips, and falls; avoiding poison ivy and ticks; glove usage; heavy equipment hand signals and high visibility personal protective equipment (PPE); proper handling and storage of TLD badges; safe work procedures of hand tools; excavation and trenching safety; safety glasses; and, frisk out procedures.

2.4 SITE SECURITY

The Burial Pits site (Pits A, B, and C) are located within SEAD-12, which encompasses approximately 360 acres of the former WSA that is located in the north-central portion of the Depot property. The entire WSA is surrounded by a multi-tiered perimeter chain-link security fence, which encase a perimeter patrol road. Access into and out of the former WSA is controlled through locked or manned security gates. Land within the northwestern portion of the former WSA is currently occupied by a tenant organization that maintains control of access into and out of their facilities. The Burial Pit sites (Pits A, B, and C) are located in the northeastern portion of the WSA, sandwiched between the northern and eastern perimeter security fences, Service Road No. 1, and an unnamed creek and wooded area that lay to the north of Buildings 813/814 and 815.

The Army provided site access to the field team prior to and during the performance of construction activities. All construction personnel and visitors accessed the work site from the southeast, entering the WSA through the southeastern unmanned (locked) security access point that is located off Fayette Road near its intersection with Igloo Road No. 1.

Site security was necessary to prevent exposure of unauthorized, unprotected individuals to the work area and its potential hazards. The area immediately surrounding the work zone was clearly marked through the use of signs, barrier rope, tape, or fencing. Security barriers ("K rails" or "Jersey" Barriers) were installed across Service Road No. 1 to the north and west of the work zone area to limit vehicular access into the work area by tenant organization personnel and to prohibit construction vehicles from traveling into the tenant occupied land.

Site security was enforced by the Site Health and Safety Officer (SHSO) or a designated alternate who ensured that only authorized personnel were allowed in the work area. The SHSO or designee also ensured that site entry during active operations was limited to personnel that possessed the required level of personal protective equipment (PPE), were trained under the requirements of Title 29 Code of Federal Regulations (CFR) 1910.120, and were part of a current medical monitoring program.

All visitors to the work site were required to report to the SM and/or the SHSO as soon as they arrived on site. The presence of visitors on site was recorded in the field logbook, including the visitor's name, company, date, time, and activities performed while on-site. All visitors to the work site, and persons working at the work site received site-specific training prior to entering the work area. The presence of visitors on-site, including the visitor's name, company, date, time, and activities performed while on site, was recorded in the site visitors log and in the daily reports provided in **Appendix A** of this report.

2.5 SITE CLEARING

Prior to the initiation of the removal action, land surrounding the Burial Pits site (Pits A, B, and C) was covered with tall grass, intermixed with poison ivy vines, sporadic small trees or brush and open, sparsely vegetated areas. Prior to the initiation of construction, the entire work zone area was sprayed with Roundup® to kill poison ivy and then the area was mowed. Grass and weed clippings were left in place.

2.6 IDENTIFICATION OF OBSTRUCTIONS AND UTILITIES

The earthwork subcontractor contacted Underground Facilities Protective Organization (UFPO) and worked with Parsons and the Army to locate and mark utilities and other obstructions in the immediate areas of the excavation sites and the supporting work/staging areas. No utilities or services were located in the immediate area of the excavation sites. The only obstructions identified in the work area were several historic monitoring wells, which initially were worked around, and subsequently removed during final portions of the construction phase activities.

2.7 ESTABLISHMENT OF WORK AND STAGING AREAS

The perimeters of the planned excavation sites and its support zone were marked using stakes.

The support area for the removal action activity was established in the unoccupied land located between Service Road No. 1 (to the west) and the north-south oriented row of trees (to the east) that bounded the western edge of the historic burial pit locations. The support zone area extended from the edge of the wooded area and unnamed creek at the southern end of the open grassland area northwards for a distance of 400 – 500 feet.

The support area was arranged to facilitate free and logical equipment movement to and from the work area to enhance safety, security, and minimize the likelihood that contaminants, if present, were introduced to new areas beyond the overall work site. Vehicular access into the support area was gained from Service Road No. 1 over a west-to-east oriented construction entrance that was constructed prior to the work and located in the southwestern corner of support area. The construction entrance was approximately 25 feet wide, and the road extended roughly 200 – 250 feet (west to east) into the open grassland area. The entrance was constructed by burying a 24-inch culvert pipe in the existing storm water drainage culvert located along the eastern edge of Service Road No. 1. The culvert pipe was covered with fabric and then gravel to stabilize the entrance and form the entry way from Service Road No. 1 into the support area and subsequently the work zone. A second construction entrance was built approximately 200 feet north of the first one along the edge of

Service Road No. 1, and these two entrances were connected by a "jug-handle" shaped earthen road which served as the truck turn-around and debris load out area during final material removal and disposal operations.

The support zone extended to north of the construction entrance, and included locations where excavated soil/fill/debris could be laid out for radiological scanning and removal of identified military-related items and other forms of debris, mechanical screening, and waste material stockpile/staging pending final disposal/deposition determinations. Waste streams from the handling/processing/screening operations were either staged in roll offs (for recyclable metals and other debris), B-25 boxes (military-related items and debris with radiological properties) or placed into soil/fill windrows located along the jug-handled road in the southwestern portion of the support area, but north of the construction entrance and road. The excavated soil layout and staging areas were lined with 6 millimeter (mil) polyethylene sheeting or equivalent material, and were used for temporary staging of excavated material pending processing (e.g., scanning or characterization sampling, screening, etc.) for disposal.

The construction entrance road extended through the north-to-south tree line where it extended into the work zone, passing immediately south of the location of Burial Pit C2. Beyond the tree line, the defined construction roadway gave way to meandering vehicular routes that marked how the construction vehicles passed from and around the excavation work zone to the support areas. Each of the excavation sites was bounded and marked with a 4-foot high orange construction fence that was installed around its perimeter as a safety measure.

Silt fences constructed of 2-foot high fabric mounted on wooden stakes were installed between the work and support zones and the wooded area that borders the work/support areas to the south and well as around the staging and handling (support) area, access roads, and along the road side ditches that parallel Service Road No. 1. Ditch checks constructed of hay bales were installed on the downstream ends of both of the drainage ditches that border Service Road No. 1 upgradient of the location where they discharge into the unnamed creek. The approximate locations of the silt fences and ditch checks are shown on **Figure 2-1**.

Available lithologic data from soil borings and test pit operations performed at the disposal pit locations during the RI indicated that the top 2.5 feet at Pit A and B, the top 0.5 feet at Pit C Area 1 north, and the top 3 feet at Pit C Area 2 south were likely to contain a large amount of clean overburden material overlying the actual burial pit locations. As such, a separate unlined soil staging area for the "clean" overburden soil was located north of Pit A and B, and east of Pit C and set aside for the temporary staging of clean overburden soils/fill that was identified as it was removed from the excavation sites.

The location of the support area including post excavation material handling, processing, and staging area, and the work zone area for this removal action are shown on **Figure 2-1**.

Temporary, impermeable pads were constructed for the screen plant, and equipment decontamination. The pads were bermed to prevent contaminated water run-off where it could impact clean areas. The

impermeable pads consisted of 40-millimeter polyethylene sheeting placed over several inches of clean sand laid atop the existing ground surface, and covered with several more inches of sand to protect the plastic sheeting. Pads were sloped to allow for the collection of runoff either back into the disposal pits and/or into sumps. The collected water was pumped to the frac tank.

Equipment leaving the work area was inspected prior to departure to ensure that loads were covered, and that clods of dirt and debris were not trapped between vehicle wheels, and that the exterior surfaces of the vehicles were not covered with excavated soil and debris. Construction equipment allowed within (i.e., beyond the jug handle load out area) the material handling and processing area and the excavation site area was scanned for residual radiation, and release surveys were processed before equipment was allowed to leave the work/processing site.

2.8 STAKING AND SURVEYING

The perimeters of the planned excavation areas were staked out based on coordinates from the design drawings included in the Work Plan. A pre-construction site survey was completed using a Trimble 5800 Real-Time Kinematic (RTK) global positioning system (GPS) unit. The Trimble GPS unit has an accuracy of ±10 millimeters (mm) for horizontal measurements and ±20 mm for vertical measurements.

A Trimble global positioning system (GPS)-enabled gamma walkover survey (GWS) was performed using a Ludlum 44-20 3”x3” sodium iodide (NaI) gamma scintillation detector to document the pre-excavation conditions of the ground surfaces at the presumed excavation pit footprints and planned support areas. The data were logged and uploaded to geographical information system (GIS) mapping software and statistically evaluated to identify any outliers or anomalies. The footprints of Pit A, Pit B, Pit C2, the sorting/segregation area, and the background area were scanned. Logged scans at Pit C1 were not performed prior to excavation; due to some initial setup problems with the GPS unit, only qualitative data were collected from the C1 footprint. One point of interest (POI) exhibiting above-background radiation levels was identified in the footprint of Pit C2. Further investigation of this location revealed a small piece of brown sandstone-like material for which subsequent laboratory analyses identified elevated levels of radionuclides associated with both the natural uranium and thorium decay series.

2.9 CONTROL OF RUN-ON AND RUN-OFF WATERS

Run-on waters in the excavation area were controlled by installing berms and/or ditches to divert storm water runoff from clean areas around the areas of excavation. Berms were placed upgradient of open excavation areas as work proceeded. The berms were constructed of clean, native soil from the site or hay bales. The run-on, run-off, and erosion control measures were inspected daily and minor repairs were completed as needed.

Run-off waters were retained within the excavation area through use of berms or hay bales and were generally allowed to infiltrate or evaporate. Storm event water and groundwater entering the excavations and materials staging areas were captured and periodically pumped into a tank for temporary storage pending determination of final disposition.

2.10 ESTABLISHMENT OF EROSION AND SEDIMENTATION CONTROLS

Erosion and sedimentation controls, such as silt fencing and hay bales, were installed in downgradient areas during operations to prevent migration of sediments and erosion. Prior to beginning any excavation work, temporary silt fencing was erected between the work area (i.e., Disposal Pit sites and the support/laydown area) and downgradient surrounding areas (i.e., wooded area and the unnamed creek to the south and drainage ditches bordering Service Road No. 1 to the west) to prevent contaminated sediment transport. As discussed in Section 2.4, hay bale ditch checks were also installed in the two drainage ditches that run on either side of and parallel to Service Road No. 1 at locations upgradient of where the drainage ditches discharge into the southeast to westerly trending unnamed creek that flows to the south of the historic burial pit site. The temporary silt fencing was maintained throughout the project and will not be removed until permanent vegetation has been re-established.

Temporary erosion control measures, including excavation slope stabilization benches, soil berms and swales exterior to the excavations, and silt fence emplacements were constructed around each of the open excavation sites to control surface water run-on/run-off and soil migration to outlying areas. Additionally, once excavated soils was placed into the Overburden/C1 stockpile, temporary silt fencing was added to the east, north, and northwest of this area to prevent sediment migration into lower lying areas.

3.0 CONSTRUCTION ACTIVITIES

This section documents construction-phase activity associated with the removal action of military-related items at the Burial Pits site that were performed by the Army in SEAD-12. Construction activities began with the mobilization of personnel and equipment to the work site by Parsons and subcontractors, S. St. George Enterprises, Inc., and Cabrera Services, Inc. on July 13, 2009. All construction activities were completed by November 4, 2009, by which time Parsons, St. George, Cabrera, and other subcontracted organizations had all demobilized from the work site. All construction activities that took place at SEDA were documented in daily reports (**Appendix A**).

3.1 SITE PREPARATION AND MOBILIZATION

The field crew and the equipment were mobilized to the site on July 13, 2009. Construction equipment mobilized to the site initially included an excavator, a bulldozer, articulated off-road trucks, a loader, a water pump, and a water storage tank. During the continuation of the removal action, additional construction equipment was mobilized to the site on an as-needed basis and the additional pieces used included a mechanical screening plant, skid steers, roll-offs, a York rake, flatbed trucks, forklifts, a New Holland tractor, Baker tanks, additional dozers and loaders, and over-the-road transport vehicles for transport to material disposal or recycling locations.

Radiological survey equipment mobilized to the site included an Alpha Spectra FIDLER with Ludlum 2221, for low-energy gamma detection; a Ludlum 43-93 with Ludlum 2360, for alpha and beta detection; a Bicron MicroRem, for exposure rate measurement; a Ludlum 2929, for alpha/beta measurements of smear samples and air filters; a Ludlum 44-9 with Ludlum 12, for beta/gamma frisking of personnel and equipment; a breathing zone air sampler and filters; and appropriate instrument check sources. Ancillary equipment deployed to the work site included GPS surveying equipment, a Photo-ionization Detector for VOCs, Schonstedt magnetic detectors, Thermo DataRAM DR-4000 real-time ambient dust monitors, a ground conductivity meter EM31-SH, and thermoluminescent dosimeters.

3.2 HEALTH AND SAFETY DURING CONSTRUCTION

At the start of each work day, all on-site workers attended a daily health and safety briefing conducted by Parsons' SHSO. The daily health and safety "tailgate" or "toolbox" meetings were mandatory for all subcontractor and Parsons personnel working at the site. At each meeting, the SHSO discussed PPE needs for that day and any potential hazards associated with the day's scheduled activities. The topics covered and all attendees at each daily briefing were documented, and the records were stored by the SHSO in the project files. Visitors to the work site were required to review the project Health and Safety Plan (Parsons, 2006b) and attend a site-specific health and safety briefing prior to entering the work site or support area.

All primary site personnel (i.e., those with a long-term presence, e.g., the SHSO, Cabrera's radiation technician [rad tech], St. George's foreman, operators, laborers, etc.) wore personnel thermoluminescent dosimetry (TLD) badges to monitor for evidence of exposure to ionizing radiation. The badges were individually assigned and were only worn on the site during hours of

operation. All badges were returned to the SHSO at the end of each work day and stored at the site office. Additionally, all site personnel were "frisked out" ("real-time scan") of the job site at the end of each work day to ensure that no radiological contaminants were transported away from the site.

During construction operations, all excavated materials were scanned in real-time with field monitoring equipment for indications of radioactivity or elevated levels of volatile organic compounds. Any excavated material that exhibited signs of radiation above regional background levels; contamination by other potential hazardous substances as assessed by hand-held photoionization detectors (PIDs) for VOCs or by visible signs of staining or soil discoloration or staining; or which showed visible evidence of the presence of intermingled debris was segregated from other lesser/non-contaminated excavated material in the material handling and staging areas.

3.3 DUST CONTROL AND AIR MONITORING

Air monitoring measurements were collected periodically during the first three weeks of the removal action (July 13 – July 30, 2009), during periods when the greatest amount of excavation and material handling activities occurred. Air monitoring frequency decreased once the majority of the disposal pit excavation, transport, and material layout operations, which required more vehicular travel, were completed and site activities moved more into material sorting, screening and staging which involved shorter driving distances and fewer trips. The data collected during the monitoring are presented in **Appendix I**. The presented data show that fugitive dusts were not identified as a concern during the excavation phase of the work due to the low number and slow operating speeds of site vehicles (e.g., articulated trucks, excavator, dozer, etc.). Furthermore, the clay-till composition of the native soil materials found at the site tends to clod which inherently reduces windborne dust levels. The professional judgments of the site manager and the site health and safety officer dictated when air monitoring and conventional methods of dust suppression (e.g., water spraying) were used to control dust generated during construction.

3.4 REMOVAL ACTION CONSTRUCTION ACTIVITIES

During the development of the Work Plan and continuing until the initial excavations at the burial pit sites began, the Army did not believe that further contaminant characterization was necessary for the materials contained in the burial pits. This belief was based on the results of the SEAD-12 ESI and RI sampling, test pitting, and risk assessment findings which indicated that unacceptable levels of chemical or radiological contaminants were not present at any of the burial pit sites and no unacceptable levels of environmental or human health hazard or risk were indicated for the historic disposal pits. This belief was further supported by the results and findings of the non-time critical removal action (NTCRA) performed at SEAD-63 (Miscellaneous Components Burial Site), a separate burial pit site located within the WSA, where excavated debris, including military related items, were not found to exhibit elevated levels of radioactivity and were not found to be commingled with conventional hazardous substances. As such, the stated objective of the removal action at the Burial Pits site was to:

- Excavate, segregate, and secure military-related materials from other debris and soil that are present in Burial Pit A/B and Burial Pit C within SEAD-12 to prevent public access to the classified or sensitive military-related material.

Even though the Army's motivation for the removal action focused on the recovery and securing of military-related items, provisions were included for the recovery and disposal of other forms of debris and for the characterization of materials that were identified and found to contain hazardous chemical or radiologic substances. Contingency work objectives were also documented in the Work Plan and included provisions to:

- Provide the Army access to other buried debris, if determined necessary, so it can be recovered, characterized, and subsequently transported off-site to licensed or permitted locations (e.g., landfills or recyclers) for disposal or reprocessing.
- Characterize, treat as necessary, and transport and dispose of any non-military related materials found to contain hazardous chemical or radiological substances off-site at licensed landfills in accordance with solid, hazardous, and/or radiological waste regulations.
- Verify that the Burial Pits A/B and C areas are free of classified military-related items and other forms of debris so that they can be released for unrestricted use and unlimited exposures.

Shortly after beginning the excavation activities at the SEAD-12 burial pit locations, the Army determined that the pits contained a greater number and a wider variety of military-related items than had been expected, and real-time radiological scans of many of the recovered military-related items showed the presence of radioactivity at, or modestly above, background levels. In addition, the debris recovered from the burial pits contained quantities of metallic components that had potential value as recycled materials.

Based on these findings, the Army and the project team modified their planned excavation, scanning, segregation, staging, handling, and processing operations to ensure that all excavated materials were fully characterized and evaluated before any final disposition determinations were made and before any site closeout operations were initiated and completed. Specific work changes implemented included:

- More frequent and thorough real-time radiological scanning of all excavated materials;
- Expanded excavated material processing and handling operations to ensure that all military-related items were recovered, all materials showing elevated levels of residual radiological activity were investigated and characterized, and all metal components of potential recycle value were recovered;
- Expanded post-removal characterization and handling of all military-related items to assess their condition and to secure them pending their transfer to another Army (non-SEDA) entity/authority for final demilitarization, disposal determinations, and actions;

- Expanded geophysical and physical surveys of all excavation locations to verify the removal of all identifiable debris prior to demobilization of personnel and equipment from the work sites;
- Collection and analysis of confirmatory samples from all excavation sites for radiological and chemical contaminants of concern (RCOCs and COCs, respectively);
- Collection and analysis of confirmatory samples from segregated overburden soil for radiological and chemical contaminants to confirm its suitability as backfill material; and,
- Implementation of more comprehensive equipment, personnel assessment, and demobilization procedures prior to daily and final job closeout of the work site.

Specifics of these expanded actions and procedures are discussed in the remainder of this Section.

3.4.1 Pit Excavations

Excavations at the disposal pits site began on July 14, 2009 with the preliminary excavation of material from Disposal Pits A and B located along the southern edge of the work area. Information developed during the ESI and the RI sampling and test pitting activities indicated that each disposal pit location was covered by a finite layer of "clean fill" or overburden soil above the buried debris. Furthermore, based on the ESI/RI geophysical characterization data of the burial pit sites, Pit A, B, and C2 appeared to have prominent, well-defined lateral limits, while the lateral characteristics of Pit C1 were less well defined. As such, the preliminary excavations at each pit focused on the stripping of thin lenses (3 to 6 inch cuts) of soil/fill from the top of the disposal pit location, followed immediately by the examination and radiological survey of the material excavated.

Radiological scanning was performed by the rad tech using an audio output 3-inch by 3-inch thallium-activated, sodium iodide (3"x3" NaI[Tl]) detector coupled to a digital rate meter. If the excavated material was free of radiation in excess of background levels and appeared to be free of debris, it was transported to, and staged in, the "Overburden" pile pending subsequent characterization and evaluation as potential backfill material at the excavation sites. The "Overburden" pile was located in the unlined open area to the north of Pits A and B, and to the east of Pits C2 and C1.

Once debris was observed or once scanning indicated radiation levels at or above background levels, the excavated material was transported to the material processing and staging area located west of the burial pit excavation sites for further handling and characterization. Excavation of material from each pit, and transport of excavated materials to the processing and staging area continued until visual evidence indicated that native soils or bedrock had been encountered along all excavation wall edges and the excavation floor. The excavation surrounding the deeper debris caches found at each excavation site was expanded laterally, as necessary, to assure that the open excavation was suitably sloped to prevent excavation wall collapse. Soil removal done to promote sidewall and slope stability resulted in the excavation of native soils from beyond the edge of the former burial pit debris cache locations and as such, this material was found to be free of debris and any evidence of radioactivity.

As such, this material was added to the "Overburden" stockpile, pending further chemical and radiological characterization to assess its possible reuse at the excavation sites as backfill.

Excavated material containing debris or indications of residual radioactivity moved to the materials processing and staging area next to Service Road No. 1 was laid out in 12–inch lifts (+/- 2-inches) so that it could be viewed, scanned by the rad tech with the 3"x3" NaI(Tl) detector, and surveyed to locate and recover intermingled debris, prior to further post-excavation processing and characterization. Additional details of the materials scanning, sorting, and separation procedures used are summarized below in **Section 3.4.3**.

The initial excavations of Burial Pits A and B were completed by mid-day on July 15, 2009. Excavation then began at the southern most portion of Pit C, in the area designated as Pit C2. Excavation of Pit C2 continued throughout the remainder of July 15th and throughout July 16th when the field crews demobilized for the weekend and the work site was secured. All mixed debris/fill materials recovered from the excavations at Pit A, B, and C2 were moved into the materials handling and staging area, and were segregated prior to scanning for radioactivity, and the recovery of military-related materials and other forms of debris. All recovered military-related items collected during the first week of work were turned over to and secured by the Army at the end of July 16th, as part of the end-of-week closeout process.

On July 20th, the field crew remobilized to the site, added the mechanical screening plant, and began the excavation of Pit C1. Field observations indicated that materials contained in Pit C1 were generally dissimilar to those found in the other three excavation pit sites; materials found in Pit C1 were found to contain C&D and miscellaneous debris whereas each of the other pits showed the presence of significant quantities of military-related items with levels of radioactivity at and slightly above background. The Pit C1 material was transported to the materials processing and staging area where it was laid out on plastic separately from the materials removed from Pits A, B, and C2. Excavation of Pit C1 was completed by the end of day on July 21st.

3.4.2 Preliminary Verification of Extent of Excavation

Subsequent to the completion of initial excavations from all burial pit locations, each pit was re-examined for signs of residual debris, soil staining, or discoloration in the exposed surfaces of the base, sidewalls, and within perimeter slopes of the excavation cuts. Furthermore, post-excavation radiological scans were performed at each excavation site to confirm the absence of elevated levels of residual radiation in any of the exposed surfaces. If debris, soil staining/discoloration, or evidence of radiation above background levels were observed/detected, they were further investigated and evaluated to determine their source and nature, and necessary actions (e.g., further excavations, hand-digging, etc.) were implemented to remove any identified debris or source material. Such material was added to the appropriate material processing stream, either in the materials processing and staging area or in the Army's secured location.

At the conclusion of the preliminary excavation of the disposal pits, approximately 1,037 cubic yards (cy) of material had been excavated from Pit A, approximately 286 cy of soil/debris had been

removed from Pit B, roughly 1,639 cy of material had been excavated from Pit C1, and approximately 1,436 cy of soil/debris had been excavated from Pit C2. Additional information (e.g., perimeter of deep excavation, perimeter of sloped excavation, total area, and maximum depth) pertinent to each of the excavation sites is summarized in **Table 3-1.** Details of the excavations are also displayed in **Figure 3-1**

3.4.3 Segregation of Debris

Once excavated materials were brought to the materials processing and staging area, they were laid out in 12-inch lifts on plastic, scanned for radiation, and identified radioactive materials, military-related items, and other debris were removed and segregated. The site rad tech conducted scanning using a Ludlum 44-20 which was operated in the audio response mode to identify locations with elevated readings, all of which were flagged for further investigation. Following the scan, field personnel returned to the flagged locations to investigate, identify, and remove the source of the noted radioactivity. If needed, the on-site construction equipment (e.g., dozer, excavator, etc.) was used to assist in the removal and recovery of any large object. Recovered radioactive materials were placed into B-25 waste containers for storage, pending further examination by Army personnel and storage/deposition determinations. Site laborers also removed other identified, non-radioactive debris from the soil lifts and placed these onto plastic for subsequent inspection and segregation determinations by Army personnel. Debris removed from the excavated material was either placed into B-25 boxes (radioactive), handed over to the Army for secure storage (other military-related items, electronic components, batteries, capacitors, etc.) pending dismantling, set aside as miscellaneous or C&D debris, or separated for potential recycle. Recovered metal debris that was not military-related or radioactive, was further segregated into piles of ferrous, aluminum, copper, and stainless steel scrap.

3.4.4 Mechanical Screening

In the secondary round of post-excavation material processing, excavated materials, exclusive of those separated and placed in the "Overburden" pile and those recovered during the lay down scanning and sorting operations described above, were run through a mechanical screening plant to separate the material into two size fractions (i.e., 6-inch plus and 6-inch minus). Material from the soil/debris lift areas was picked-up by a loader, and loaded into the screening plant's feed hopper. Processed excavated materials from Pit C1 were mechanically screened first, since they had been found to contain less radiation and military-related materials, and therefore posed less of a potential threat for cross-contaminating subsequent batches of materials mechanically screened. Processed, excavated material residuals from Pits C2, A, and B, where military-related items and radiation levels at or slightly above background were processed sequentially thereafter.

Oversized materials recovered from the mechanical screening operation were again laid out for review by Army representatives. Military-related items were recovered and secured by the Army and debris/materials (e.g., soil clods, debris, etc.) showing evidence of radiological activity were investigated and all recovered source materials were added to B-25 boxes. Other debris recovered from the oversized stream was segregated as necessary. The processed 6-inch minus stream from Pit

C1 was moved back into the processing and staging area where it was laid out on plastic again and rescanned manually for evidence of potential radioactivity before it was loaded into haul trucks and added to the "Overburden" pile.

During the processing of Pit C1 materials, a gamma detection system comprised of an array of three 3"x3" NaI(Tl) detectors connected to a Ludlum Model 4609-3 single channel analyzer was mobilized to the work site and installed immediately above the screening plant's conveyor belt discharge line to provide real-time scanning of soil and undersize material for residual radiation during the processing of excavated materials from Pits C2, A, and B. The detectors were suspended above and perpendicular to the direction of movement of the 24 inch discharge conveyor belt. Each detector was separated by a distance of approximately 6 inches, space outwardly from the centerline of the conveyor belt to provide maximum coverage of the discharge line. When the belt was loaded with soil, the distance between to the top of the soil and the bottom of a detector was approximately 3 to 4 inches, and a metal screen bar was placed across the conveyor belt upstream of the detector array to protect it from oversized clumps of soil/debris that might damage the detector or cause false positives. A laptop personal computer (PC) was used to monitor each detector's count rate, input parameters, and system alarms. Use of the PC allowed the system operator to closely observe its performance, and particularly to note the segment count when the system alarmed.

The maximum thickness of soil carried on the waste conveyor belt during processing was estimated by field operators as 3 inches thick. At the conveyor operating speed (i.e., 6 feet per second), each individual detector has a modeled minimum detectable concentration (MDC) of 3.0 picoCuries per gram (pCi/g) with no soil cover. Under a soil cover of 3 inches (the maximum observed soil thickness on the conveyor), the modeled MDC is 8.2 pCi/g. However, the intent of the detector system was to identify discrete sources that may have been missed during the previous scans, and to not assess low-level distributed activity in the soils.

In operation, when the detector system's alarm sounded, the screen plant was shut down, and suspect material on the conveyor was recovered, and this material was transported to a site where it could again be laid out on plastic in a thin lift for further manual scanning and sorting to identify the source. Many of the alarms proved to be "false-positives", but approximately one or two in ten resulted in the recovery of small fragments of radioactive materials (e.g., commonly radium dials or fragments), which were subsequently added to the B-25 box inventory. Once the undersize stream from Pits C2, A, and B was confirmed to be free of residual radioactivity in excess of background levels, it was transported to a location adjacent and parallel to the "jug-handle" turnaround area where it was staged in a windrow on plastic sheeting pending final chemical and radiological characterization, disposal determinations, and load out.

When Pit C2, A and B oversized materials were removed from the screening plant they were again scanned for residual radiation prior to being laid out for review by Army representatives. If radioactivity was noted, the oversized debris was added to the contents of a B-25 box pending further determinations by the Army. Other oversized debris was laid out on plastic for review by the Army

where final separation of military-related items from other forms of debris and recyclable materials occurred.

3.4.5 Suspension of Field Operations

On-site operations were suspended on August 13, 2009, upon completion of excavated material processing and mechanical screening, post-screening handling, segregation, and staging. Site work was suspended to provide time to receive and assess analytical results from confirmatory soil samples that were collected from all of the excavation pits, and from samples of materials contained in the "Overburden" and Pit C2, A, and B windrow. Confirmatory soil samples from the excavation sites were collected and submitted to contract laboratories for conventional target compound and target analyte list (TCL and TAL, respectively) constituents of concern only. Soil samples from the "Overburden" pile were collected and submitted for TCL, TAL and radiological analyses, while samples from the windrow comprised of Pit A, B, and C2 6-inch minus material were collected and submitted for waste characterization and radiological analyses. Additional information pertinent to the sampling and analysis of materials and the results obtained are provided in **Sections 3.4.6** and **3.5.1**, respectively, below.

Prior to suspending site operations, the field crew secured all of the excavation sites; covered all waste and material piles and containers; secured all radiological and military-related items in Building 814; and scanned all construction equipment for evidence of radiation and cleaned as necessary prior to releasing it from the work site. When work was suspended, the inventory of materials listed below remained at the site.

- Approximately 2,100 – 2,200 cy of excess 6-inch minus soil in the Overburden/C1 stockpile.
- Approximately 2,300 cy of mixed waste soil and debris from the 6-inch minus stream from Pit C2, A and B.
- Debris sorted into eight roll-offs, six B-25 boxes, and other covered piles.
    - Five roll-offs – Primarily aluminum metal.
    - One roll-off – Ferrous metals.
    - One roll-off – Mixed metals.
    - One roll-off – Trash and other debris.
    - Six B-25 Boxes – Military-related items with detectable levels of radionuclides – stored in secure location.
    - Other assorted debris and objects.

3.4.6 Sampling and Analysis

3.4.6.1 Conventional Chemical Analyses

Excavation Limit Confirmatory Sampling for Chemical Analysis

Subsequent to the completion of the initial excavations at the historic burial pits and before the temporary suspension of work activities, confirmatory soil sampling was performed to verify that conventional chemical hazardous substances (i.e., not radiological) were not present at levels in excess of acceptable levels. Confirmation sampling was done separately for chemical and radionuclides contaminants of concern (COCs and RCOCs, respectively), with the sampling and analysis of chemical COCs done first. Confirmatory sampling and analysis for RCOCs was conducted once the results for the chemical COCs were received, reviewed, and verified to comply with the desired cleanup levels.

Confirmatory soil samples from the base of the excavation were generally collected as a discrete grab sample from a unique location at a frequency of one sample per 2,500 square feet (sf) or less of excavation bottom, except in areas where the excavation extended to the bedrock surface and all soil was removed, in accordance with the FSP (Parsons, 2008a). At locations where the base of excavation was greater than 2 feet below the adjacent ground surface, sidewall samples were collected at a rate of one soil sample for every 50 linear feet (lf) or less. Sidewall samples were collected at a depth halfway between the base of the excavation and the adjacent ground surface or sloped bench elevation. Excavation perimeter samples were taken at locations approximately 1 to 2 feet back from the edge of the pit excavations, adjacent to the location of excavation pit sidewall samples. The minimum number of confirmatory samples required for each excavation is listed in **Table 3-1.** The approximate location of the initial confirmatory soil samples collected from four excavation pits (A, B, C1, and C2) are shown on **Figures 3-2** through **3-4**. The actual placement of the sample locations on the map has been moved from survey coordinate locations to enhance readability and understanding.

Field duplicates were collected to meet the quality assurance/quality control (QA/QC) requirements established in the Work Plan. The contract laboratories completed matrix spike (MS) and matrix spike duplicate (MSD) analyses on one site-specific project sample per sample delivery group (SDG). All samples were collected following procedures outlined in the Final Sampling Plan for Seneca Army Depot Activity (Parsons, 2008a).

Confirmatory soil samples for chemical COCs were submitted to a contract laboratory (primarily Columbia Analytical Services, Inc. [CAS], Rochester, NY; and subsequently Life Science Laboratories [LSL], East Syracuse, NY) for analysis total solids (EPA Method 160.3), TCL Volatile Organic Compounds (VOCs, EPA Method 8260B); TCL Semivolatile Organic Compounds (SVOCs, EPA Methods 3550C/8270C); TCL Pesticides (EPA Methods 3541/8081A), TCL Polychlorinated Biphenyls (PCBs, EPA Methods 3541/8082), and TAL Metals (EPA Method 6010B/7471A [Hg]) and cyanide (EPA Method 9012A). Life Sciences Laboratories was added to provide rapid

turnaround analyses during follow-up sampling and analysis that occurred once the field crews remobilized to the site for final operations.

Soil cleanup goals (CUGs) established by the Army for verification that no unacceptable levels of chemical COCs remained at the Burial Pit locations were defined as the State of New York's (NYS) Unrestricted Use Soil Cleanup Objective (SCO) levels as defined in Title 6, New York Code of Rules and Regulations (6NYCRR) Part 375-6.8(a).

Analytical data for conventional COCs are provided in **Appendix B**, **Tables B-1C** and **B-2**. The chain-of-custodies for the confirmatory samples are included in **Appendix E** and the case narratives for laboratory sample delivery groups are presented in **Appendix F**. All of the analytical results were validated in a manner that is consistent with EPA Region 2's Standard Operating Procedures (SOPs). Data validation reports for the conventional COCs are provided in **Appendix G**. Conventional chemical (TCL/TAL analytes) results obtained for the confirmatory soil samples are discussed in **Section 3.5** below.

Overburden/C1 Stockpile Analyses

Soil samples from the "Overburden/C1" stockpile were also collected and submitted to CAS Inc. for chemical analyses including total solids (EPA Method 160.3), TCL VOCs (EPA Method 8260B); TCL SVOCs (EPA Methods 3550C/8270C); TCL Pesticides (EPA Methods 3541/8081A), TCL PCBs (EPA Methods 3541/8082); and, TAL Metals (EPA Method 6010B/7471A [Hg]) and cyanide (EPA Method 9012A). Analytical results from the "Overburden/C1" samples were compared to the NYS Unrestricted Use SCO levels as defined in 6NYCRR Part 375-6.8(a).

Analytical data for conventional COCs are provided in **Appendix B**, **Table 3C**. The chain-of-custodies for the confirmatory samples are included in **Appendix E** and the case narratives for laboratory sample delivery groups are presented in **Appendix F**. All of the analytical results were validated in a manner that is consistent with USEPA Region 2's Standard Operating Procedures (SOPs). Data validation reports for the conventional COCs are provided in **Appendix G**. Conventional chemical (TCL/TAL analytes) results obtained for the confirmatory soil samples are discussed in **Section 3.5** below.

Six-inch Minus Cut Stockpile from Pits A, B, and C2

Samples of the six-inch minus waste soil cut from materials excavated from Pits A, B, and C2 were collected on August 6, 2009 and submitted to CAS Inc. for waste disposal characterizations. In accordance with the requirements and specifications identified by representatives of the Seneca Meadows Landfill, waste disposal samples for chemical COCs were collected at a frequency of one per every 700 cy of stockpiled waste material. Samples of the stockpile waste soil were also collected for radiological analyses at a frequency of one per every 200 cy as specified by the intended landfill recipient.

Prior to sampling, the volume of the six-inch minus waste soil windrow was estimated by surveying its extent and height using GPS. These survey coordinates were superimposed over previously defined site elevation survey data and the volume of the six-inch minus stockpile was estimated.

Waste characterization sample locations were then randomly sited across the length and width of the waste soil windrow, and samples for characterization of radiological and chemical waste characteristics were collected from sample depths varying from 2 inches to 2 feet below grade surface. As the material contained in the waste soil windrow was comprised of soil and fill that had been handled and mixed several times (i.e., excavated, moved to the laydown area, scanned, hand sorted, picked up for processing through mechanical screen, laid out and sorted again if mechanical screen radiation scanner alarmed, picked up, and staged pending analysis), these materials were considered to be well mixed within the windrow. Since the number of radiological samples required exceeded the number of samples needed for conventional waste characterization purposes per the requirements of the receiving landfill, the locations of the radiological samples were used as the primary sample locations and the necessary conventional waste characterization samples were collected from selected radiological sampling locations that scattered throughout the windrow.

All waste characterization analytical results obtained were reviewed by the Army, Parsons, and Cabrera Services upon receipt and once the data were found not to contain any unanticipated levels of chemical or radiological contamination, it was provided to representatives of Seneca Meadows Landfill for review and pre-approval prior to it being loaded onto trucks for transport to the off-site facility for disposal. None of the analytical determinations showed evidence of TSCA regulated materials or levels of radiation that were not within the landfill's permitted levels to receive.

Waste characterization samples collected for chemical COCs were analyzed by CAS Inc for toxicity characteristics (TCLP VOCs [Method 1311 Zero Headspace Extraction{ZHE} /SW-846 8260B], TCLP SVOCs [Method 1311 Extraction/SW-846 8270C] and TCLP Metals [1311 Extraction/SW-846 6010C and 7470]); total organochlorine pesticides/PCBs (pesticides [SW-846-8081A], PCBs [SW-846-8082]); ignitability (flashpoint [SW-846 1010]); corrosivity (pH [SW-846 9045D]); reactivity (reactive cyanide [SW-846 9014], and reactive sulfide [SW-846 9034 modified]); free liquid (SW-846 9095A), and total solids (EPA 160.3 modified).

Chemical COC results of these determinations are provided in **Appendix C**. The chain-of-custodies for the waste disposal characterization samples are included in **Appendix E** and the case narratives for laboratory sample delivery groups are presented in **Appendix F**.

Waste characterization samples collected for radiological COCs were analyzed by GEL Laboratories, LLC (GEL) of Charleston, South Carolina for gross alpha and gross beta by EPA Method 900.0M, and selected radionuclides of interest (see discussion in **Section 3.4.6.2**, below) using gamma spectroscopy by EPA Method 901.1M. Radiological COC results of these determinations are provided in **Appendix C**. The chain-of-custodies for the waste disposal characterization samples are included in **Appendix E**.

3.4.6.2 Radiological Analyses

Once analytical results for the conventional chemical COCs were received and reviewed, and once necessary re-digs were performed (see discussion in **Section 3.4.10**) and subsequent confirmatory

sample results for chemical COCs received, reviewed and approved, confirmatory scanning and sampling and analysis for radiological COCs (RCOCs) was performed.

Radionuclide Identification

Immediately after the discovery of the radioactive components in the burial pits, three samples of material and four smear samples exhibiting activity above background levels were sent to GEL in Charleston, South Carolina for quick screen gamma spectroscopy analyses. Results from these samples were used to confirm the RCOCs for this project. **Table 3-2** presents and summarizes the data obtained from these analyses. Summary discussions of the key results are provided below.

- S12DS01: This sample consisted of the material identified during the initial baseline scanning survey of the surface footprint of Pit C2. The location was flagged and excavated using shovels - the source material was found approximately six inches below the ground surface. Measurements returned to background levels following its removal.

  Based on the detection of radionuclides associated with both the naturally-occurring uranium and thorium decay series, the material is assumed to be unprocessed. One historical mission of SEDA was the storage of valuable ores, including pitchblende ore (in SEAD-48) and columbite ore. With the rock's location in the surface soil it is unlikely it was intentionally placed in the area for burial. No additional similar material was found over the course of the excavation and/or screening process.

- S12DS02: This sample was collected from the vicinity several items that had a large white-colored light metal sleeve with above-background radiation levels, and appears to be the same type of material. The results indicate the presence of natural thorium (Thorium-232 [^{232}Th]) progeny. The items themselves were not identified, but thorium alloys with aluminum, magnesium, and other light metals are common in aircraft parts and other components that must maintain structural integrity in high temperatures.

- S12DS03: This sample consisted of a clump of clay with small pieces of metal or paint, apparently from a damaged radium dial or gauge. The detection of three progeny of Radium-226 (^{226}Ra) without detections of uranium decay series progeny above ^{226}Ra, such as Thorium-234 (^{234}Th) confirm the presence of radium.

Based on these results, a Canberra Inspector 1000 portable multi-channel analyzer (MCA) was mobilized to the site to further assist in identification of the radionuclides present in components or debris excavated from the burial pits. The Inspector 1000 system consisted of a Lanthanum Bromide detector to allow for quick identification of detected gamma energies. Measurements were conducted on excavated debris using the manufacturer's recommendations. A Cesium-137 (^{137}Cs) source was used during the measurement to provide a reference energy (661 kiloelectron Volt [keV]) to determine potential spectral shift due to temperature or other fluctuations in operating parameters.

Radionuclides of Concern

Based on laboratory gamma spectroscopy results as well as the onsite screening with the MCA, the primary RCOCs for this project were identified as ^{226}Ra and ^{232}Th with progeny in equilibrium assumed.

Site Release Criteria

The radiological release criteria established by the Army for the Disposal Pits were as shown below.

1) The level of residual radioactivity distinguishable from background at this site would result in a total effective dose equivalent (TEDE) to an average member of the critical group of 10 millirem per year (mrem/yr) or less as per NYSDEC standards (NYSDEC, 1993); and

2) The level of residual radioactivity represents an excess lifetime risk of cancer, at a point of exposure, to an average individual no greater than between 10^{-4} and 10^{-6}.

The Nuclear Regulatory Commission (NRC) applies a TEDE standard of 25 mrem/yr; the USEPA recommends a TEDE standard of 15 mrem/yr; for this site, a TEDE of 10 mrem/yr (a more restrictive criterion) based on the New York's Technical and Administrative Guidance Memorandum (TAGM) 4003 (NYSDEC, 1993) guide was selected.

Levels of residual radioactivity that correspond to the allowable radiation dose are calculated by analysis of various scenarios and pathways through which exposures could be reasonably expected to occur. The *Summary of Field Activities* (Cabrera, 2009) specified derived concentration guideline levels, or DCGLs, which are the concentration of residual radioactivity distinguishable from background that, if uniformly distributed throughout a survey unit, would result in a TEDE to an average member of a critical group equivalent to the allowable dose. These wide-area DCGLs were developed by Argonne National Laboratory (ANL) for use during the license termination effort at SEDA in 2003. These dose-based criteria did not properly account for the residual risk due to residual radioactivity above background at the site. Therefore, for the purposes of satisfying both dose- and risk-based criteria, the data from this survey of the final surfaces of the pits was included as the source term in site-specific dose and risk assessment using the computer code developed by ANL, *Residual Radioactivity (RESRAD), Version 6.5*.

Identification of Impacted Areas

Three impacted areas were identified during confirmation surveys (Pits A/B, Pit C1, and C2). Confirmation surveys of the final surfaces of these pits were based on MARSSIM guidance. Each pit was evaluated as a Class 1 survey unit [SU] in a fashion similar to a standard MARSSIM final status survey, except for a few key differences, which are described in **Section 3.5**. Burial pit sizes are provided in **Table 3-1**.

Background Reference Area

Background concentrations of ^{226}Ra and ^{232}Th and other naturally-occurring radionuclides were determined using the surface and subsurface data set collected during the SEAD-63 project conducted in 2004 (Plexus, 2005). Unlike SEAD-12, no radioactive items were discovered during the SEAD-63

excavation support. Gamma spectroscopy data for Actinium-228 (^{228}Ac), Bismuth-214 (^{214}Bi), Potassium-40 (^{40}K), and ^{234}Th, as well as gross alpha and beta results, were evaluated for statistical outliers and no anomalous data were identified. Therefore, the soils at SEAD-63 were considered unimpacted from a radiological perspective and these results were used as a background dataset for the Disposal Pit removal action. The summary statistics of the evaluated radionuclides are presented in **Table 3-3**.

Survey Design

The MARSSIM guidelines for sampling design for a Final Status Survey (FSS) were followed in determining the appropriate number of samples to be collected. The initial step is the determination of the relative shift using the following equation:

$$\text{Relative Shift} = \frac{\Delta}{\sigma} = \frac{DCGLw - LBGR}{\sigma}$$

Using the background data for ^{214}Bi and ^{228}Ac shown in Table 3-2, a combined σ was calculated to be 0.16 pCi/g. Using the sum of ratios and unity rule, the $DCGL_W$ is unity, and the lower bound of the grey region is set to 0.5 as a default value. A relative shift of 3.1 results, and from that relative shift, the random measurement probability (P_r) is determined to be 0.983039 from MARSSIM Table 5.2.

The following equation (MARSSIM Equation 5-1) was then used to determine the total number of samples in the survey unit/reference area pair:

$$N = \frac{\left(Z_{1-\alpha} + Z_{1-\beta}\right)^2}{3\left(P_r - 0.5\right)^2}$$

The terms $Z_{1-\alpha}$ and $Z_{1-\beta}$ both reflect the desired Type I and II error rates, both set at 0.05. The total number of samples was then divided by two and increased by a factor of 20%, per MARSSIM recommendations. The overall number of samples required per survey unit was calculated to be 10 samples.

The appropriate number of systematic samples within the pits was calculated to be 10 per 2000 square meters (m^2) Class 1 survey unit, or approximately 1.1 per 2500 square feet (ft^2). This frequency was met by utilizing the sampling points from the chemical sampling activity, which were collected at a frequency of at least 1 sample per 2500 ft^2 from the excavation floor and sidewalls. A grid of the pit areas consisting of 50 ft X 50 ft squares was established prior to the excavation activities and was used to guide sampling frequency. The grid is shown in **Figure 3-1**. A sample was also collected every 50 linear feet along the perimeter of each of the pits to ensure that area immediately surrounding each of the burial pits was not impacted by remedial activities.

Because of the nature of this remediation, these samples were co-located with chemical sampling locations on the basis of a square sampling grid in accordance with the *Radiological FSP* (Parsons, 2009) and the *Summary of Field Activities* (Cabrera, 2009). While the sample density was calculated in accordance with MARSSIM guidelines, the sample locations were not pre-selected based on a

systematic triangular grid as is advised in MARSSIM. Biased samples were collected based on gamma walkover survey (GWS) results as is described below.

Integrated Survey Strategy

Confirmation surveys of open land areas consisted of performing GWS to identify locations of residual contamination and collecting soil samples to be analyzed for the project RCOCs. Additional biased measurements and samples were obtained, as necessary, from locations where scans indicated the potential for residual contamination.

GWS was performed using a Ludlum Model 44-20 three inch by three inch sodium iodide (3x3 NaI) detector coupled to a Ludlum Model 2221 ratemeter. This detector was linked to a GPS receiver/datalogger so that activity measurements could be spatially referenced. Scanning was performed in accordance with MARSSIM protocol by walking straight parallel lines with the detector approximately 10 centimeters (cm) above the ground surface. Survey passes were approximately 0.5 m apart and the scan rate was approximately 0.5 m per second.

Data collected during surface gamma scans in the burial pits was recorded every second along with corresponding easting and northing GPS coordinates. The measurements were plotted and color-coded for visual review and evaluation with the coordinates of the highest measurement identified for possible biased sampling. The average and standard deviation were calculated for each SU to allow evaluation of the data outliers via Z-score. Z-scores represent the number of standard deviations the result lies from the mean, based on following formula:

$$Z - score = \frac{CountRate - Mean}{StdDeviation}$$

All areas exceeding three standard deviations above the average (i.e., Z-score greater than or equal to 3.0), were flagged for further investigation. A biased sample was collected at the location with the maximum Z-score in each burial pit.

Surface soil samples were also collected from burial pit surfaces at locations co-located with chemical sampling locations on a square sampling grid as described in **Section 3.5**. Following collection, soil samples were maintained under formal chain-of-custody procedures, sent to the offsite laboratory, and analyzed by gamma spectroscopy, with analytical results reported in units of pCi/g. At least 11 samples were collected in each SU.

All samples collected for radiological COC characterization were submitted to GEL Laboratories, LLC in Charleston, South Carolina and analyzed for gross alpha and gross beta by EPA 900.0/SW846 9310/SM 7110B Modified and selected radionuclides by EPA 901.1 Modified.

Raw analytical results from GEL are provided in **Appendix B**. Processed Final Status Survey results are provided in **Appendix D**. The chain of custodies for the confirmatory samples are included in **Appendix E**.

3.4.7 Remobilization to the Work Site

Subsequent to the receipt and assessment of the analytical results from the conventional chemical confirmatory soil samples, field crews and equipment were remobilized to the Burial Pits site to complete the removal and recovery of military-related items and other forms of debris. Field activities recommenced at the site on September 29, 2009 and work subsequently conducted included further excavation and processing of additional soil/debris from locations around three of the excavation pits (A, B, and C2); the load-out and disposal of waste and recycled materials from the work site; the performance of radiological scans at all completed excavation sites; the collection and analysis of confirmatory samples for radiological constituents of concern; geophysical surveys of all work areas and travel/haul roads using metal detectors (i.e., Schonstedts and EM-31) to locate and remove ("mag and dig") metallic debris objects that had fallen to and become buried in disturbed soils during excavation, loading, hauling, material processing and handling operations; the backfill or regrading of the excavation pit sites; disturbed area landscaping and seeding; and the final demobilization of all field equipment and personnel.

3.4.8 Additional Geophysical Surveys

The Army initially requested that the field crews perform additional visual and geophysical surveys of all of the excavation impacted areas (e.g., excavation area side perimeters areas, travel/haul roads, material handling and staging area, etc.) as part of site cleanup and restoration activities. As a first step in this process, Parsons mobilized a two man "mag + dig" team to the site, and these personnel conducted walkover surveys of all affected areas using a Schonstedt metal detector to locate debris that had fallen from construction equipment as it was excavated, loaded, transported, and processed around the excavation sites, the haul roads, and in the materials handling and staging areas. Each item identified during this process was subsequently recovered and reviewed by site personnel in accordance with established procedures (i.e., scanned for radiation; laid out for Army inspection; added to secured material, material to be recycled, or general debris stream for final disposition; etc.). Subsequent to the discovery of a large debris cache exterior to the original Pit C2 excavation (see discussion in **Section 3.4.10**), the Army requested that site geophysical surveys be expanded to include EM-31 surveys around each of the open excavation sites. Initially, the EM-31 surveys were limited to the excavation sites and a buffer zone that extended 25 - 35 laterally outwards from all of the excavation disturbed areas around each of the open pits. The EM-31 survey area was subsequently expanded to encompass all of the larger open area that defined the suspected location of the Burial Pits site (i.e., bounded by northern and eastern perimeter security fence of the WSA, by the southern wooded area, and by the north-south oriented row of trees that separated the suspected burial pit area from the material processing and staging area). Results of the area-wide EM survey that was completed by October 15th are provided in **Figure 3-5**, and this figure shows evidence of buried debris in the vicinity of Pit C2 and Pit A.

The final EM-31 survey was conducted along parallel survey lines that were spaced at 10-foot intervals throughout the open area. Monitoring well installations located in close proximity to the open excavations blinded the EM-31 survey equipment due to the presence on metal in the

construction, and limited the field crew's ability to make firm determinations as to the possible continuing presence of debris and other materials around these installations. To eliminate this interference, each of these wells was dug out by the excavator, and all well components were removed (see discussion in **Section 3.4.9**, below). EM-31 surveys then were re-performed around the locations of the excavated well installations and these data were used to confirm the absence of buried debris and objects in these areas. Results of the EM-31 survey were used to locate areas where expansions to pit excavations were required (i.e., Pit C2) and localized re-digs of spot items were needed. Final EM survey results reported on October 30, 2009 for the SEAD-12 work area are shown in **Figure 3-6**.

3.4.9 Monitoring Well Removal

Monitoring wells MW-12-7, MW12-8, MW12-10, MW12-11, MW12-12, MW12-13, MW12-14, MW12-15, MW12-33, and MW12-34, each of which is located in close proximity to one of the burial pit (i.e., Pits A, B, C1, or C2) sites, were excavated and removed in their entirety to eliminate the geophysical survey equipment blinding issues described above. All excavations made to remove the identified wells extended over the full depth of the overburden soil/fill that lay above competent bedrock in this portion of the SEAD-12 site. During the excavation and removal of each of the targeted wells, all installation components (i.e., sand pack, grout, well screen and upriser, protective cover, well collar, etc.) and surrounding native soils were removed and all excavated materials and debris were either disposed at the Seneca Meadows Landfill as soil cover material or C&D debris, or sent to the recycler as scrap metals (e.g., protective metal casing) once they were removed. Since each of the excavated well installations was located immediately adjacent to the larger open excavations where military-related items and other forms of debris had been recovered, the Army did not believe that the abandonment of the identified wells in this manner would result in the development of any higher level of preferential flow path between the surface and the underlying bedrock regime than the open excavation already represented. As such, once each well was excavated, removed, and the surrounding and underlying areas were cleared via EM survey, each of the former well locations was abandoned and backfilled in a manner equivalent to those used at the larger excavation pit sites. In the case of well installations in proximity to Pits A and B, each of the former wells were backfilled using soil from the "Overburden/C1" stockpile that was dumped and pushed into the open holes using bulldozers. At well location near Pits C1 and C2, the bulldozers pushed native soils that surrounded the open excavation sites back into the open holes and graded the areas to promote positive drainage away from the sites. Soil and fill used to backfill all of the excavations was compacted, prior to final grade, raking and re-seeding to establish a vegetative cover.

3.4.10 Additional Burial Pit Excavations

Additional excavations were conducted along the northern face of excavation Pit B, in a larger area around Pit C2, and at an isolated debris cache located to the south of Pit A. Details of this additional excavation work is provided below.

Additional Pit B Excavations

Two subsequent sequences of excavation and confirmatory sampling and analysis for conventional COCs were performed along the northern face of Pit B during early October 2009 (i.e., October 1 and October 8). Each of these excavations removed a three- to five-foot slice of soil along the entire length of and depth of the Pit B's northern excavation face. These excavations were initiated as a result of the review of confirmatory soil data that showed that there were levels of aroclor-1254 in excess of NYSDEC's Unrestricted Use SCO (100 μg/Kg) in the sidewall and perimeter samples collected from locations S12EXSW-O-8-01 and S12EXPR-O-8-01 (see **Figure 3-2**). Once the initial redig at Pit B was completed, confirmatory samples S12EXSW-O-8-14 and S12EXPR-O-8-14 were collected and submitted for rapid turnaround time analysis of polychlorinated biphenyls. When results for both of these replacement samples were received and reviewed, they again showed elevated levels of aroclor-1254, so a second sequence of excavation followed by the repeat collection and analysis of replacement sidewall and perimeter samples (i.e., S12EXSW-O-8-05 and S12EXPR-O-8-05) from this face of the pit's excavation face. The results of the reanalysis of samples for PCBs showed acceptable levels of aroclor-1254, and all other PCB congeners after the second redig at Pit B.

Materials removed during these subsequent excavations at Pit B were again moved to the material handling and processing area where they were laid out, scanned for evidence of radiation in excess of background levels, and surveyed for evidence of intermingled military-related items or other forms of debris. Military-related items and other debris were not noted in these soils, and no elevated levels of radiation were associated with any of this soil based on real-time scanning performed.

Pit C2 Excavations

As part of the initial "mag +dig" surveys, the survey team identified a large metal anomaly beneath the surface of the ground to the northeast of Pit C2 (in grid cell J3). When this anomaly was investigated, a large metal object was uncovered, which subsequently was removed using the excavator (due to its size). During this removal operation, a larger cache of buried debris was uncovered beneath the initial object and as a result, a satellite excavation extending into grids I3, I4, J3 and J4 (including benching) was created adjacent to Pit C2 from which approximately 70 cy of material was excavated, and transported to the materials handling and processing area, where it was laid out on plastic, scanned and processed to remove all radiological items, identified military-related items, and other forms of miscellaneous debris. Once all debris and items of interest were recovered and secured, the waste soil was staged for subsequent disposal at the off-site landfill.

Once the EM-31 surveys were performed around Pit C2, additional buried objects were identified in previously unexcavated areas immediately surrounding Pit C2 (in grid cells I2 and J2), at other locations between Pit C1 and C2, and to the south-southeast of Pit A. **Figure 3-5** presents the results of the EM-31 surveys conducted after the initial excavations at each of these were cleared and samples were collected. Each of the identified areas showing an EM-31 response suggesting buried objects were subsequently investigated by field crews. Investigation of anomalies identified in grid cells I2 and J2 resulted in the excavation of another 300 cy of material from grid cells G2, H2, I2, J2,

K2, G3, H3, I3, H4, I4, and J4 (including stability benching, see **Figure 3-7**), all of which was transported to the materials handling and processing area where it was laid out on plastic, scanned for evidence of radiation, manually sorted, debris and soil separated, recovered debris presented for inspection by Army personnel, and then segregated as either radiological materials (secured in B-25 boxes), military-related items secured by the Army, or added to the recycle, C&D/miscellaneous debris stream, or added to a soil stockpile for load out to the local off-site landfill. Additional excavations around Pit C2 took place during the period from October 5 to October 13, 2009. Confirmatory sampling and analysis for COCs and RCOCs were performed in the expanded pit area on October 5, October 7, and October 15, 2009. The extent of the additional excavation in Pit C2 can be seen in **Figure 3-7**.

Pit A Excavation

When the anomaly to the south-southeast of Pit A was excavated, it was found to be surficial in nature and to contain only C&D debris (fence posts, concrete, and chain link fence), which was added to the C+D waste debris stream.

3.4.11 Final Verification of Extent of Excavation

At the conclusion of the excavation of the pits, approximately 1,037 cy of material had been excavated from Pit A, approximately 349 cy of soil/debris had been removed from Pit B, roughly 1,639 cy of material had been excavated from Pit C1, and approximately 2,376 cy of soil/debris had been excavated from Pit C2. Additional information (e.g., perimeter of deep excavation, perimeter of sloped excavation, total area, and maximum depth) pertinent to each of the excavation sites is summarized in **Table 3-1**. Details of the excavations are also displayed in **Figure 3-6**. The locations of all of the final confirmatory soil samples are shown on **Figure 3-8** through **3-10**.

3.4.12 Load-Out of Waste Soil and Debris and Recycle Materials

Military–related items

Military-related items and debris recovered from the excavation sites included non-radioactive and radioactive materials. Recovered, non-radioactive military-related items were disfigured or dismantled prior to being added to waste streams going to the landfill as C&D or added to the recycle stream that was sold and shipped off-site to a metal recycler for subsequent reclamation (see discussion below). Military-related items that were found to be radioactive were disposed by the Army as low-level radioactive waste at Energy Solutions LLC in Utah.

Waste Soil and C&D and other Miscellaneous Debris

Concurrent to the excavation and removal of additional soil from the northern face of Pit B, the field crews began the load out of waste soil from burial pit excavations A, B, and C2 that had been staged along the western edge of the materials processing and staging area adjacent to the “jug handle” truck turnaround. Results from the disposal characterization samples for conventional and radiological COCs were provided to personnel of Seneca Meadows Landfill for review and approval. Based on their review of the data provided, the landfill approved the six-inch minus cut from burial pit

locations A, B and C for disposal as cover material and authorized the Army to proceed with the transport of this material to the landfill site. Miscellaneous debris and C&D debris were also accepted for disposal within the landfill.

Load out of the original six-inch minus waste soil windrow began on September 30, 2009 and was initially completed by October 2, 2009. Additional soil and debris was loaded out thereafter as needed based on the excavation and processing of additional soil and debris from Pits A, B, and C2. All soil and debris was removed by October 29, 2009. Parsons subcontracted with Riccelli Enterprises, Inc. to transport and dispose of the excavated non-hazardous soil cover material, C&D Debris, and miscellaneous debris at the Seneca Meadows Landfill. At the completion of the removal action, more than 5,420 tons of cover soil and debris was transported to, and disposed at, Seneca Meadows Landfill. Information pertinent to the load out and shipment of soil and debris to the Seneca Meadows Landfill is provided in **Appendix J**.

Recyclable Materials

Compliance with the EPA Region II "Clean and Green" policy was demonstrated through the recycling of materials. Riccelli Enterprises, Inc. also transported recyclable metals that were removed from the SEAD-12 burial pit locations to Luffman Metal Recyclers in Seneca Falls New York. Scrap metal excavated from the site were segregated into varying categories of waste metals (e.g., aluminum, stainless, ferrous, copper, etc.) and were loaded into roll-off containers which were then transported to Luffman's. By the end of the work, more than 122 tons of mixed metal scrap was sent to Luffman's for recycle. Information pertinent to the recycle of metal to the Luffman Metal Recyclers in Seneca Falls NY is also provided in **Appendix J**.

3.4.13 Water Removal

Approximately 17,000 gallons of water was recovered from the disposal pit excavations over the duration of the removal action. This water was pumped from the excavation sites into a Bakers tank, where it was mixed with approximately 50 gallons of wastewater generated at Building 803 as part of the RCRA Closure activity performed at this location during July 2009. One water sample was collected and submitted to Columbia Analytical Service, Inc for determination of TAL and TCL analytes (metals, VOCs, SVOCs, pesticides and PCBs). The analytical data for sample WW1006-1 was submitted to the Seneca County Water/Sewer District for their approval. Approximately 17,000 gallons of water were discharged to the Sewer District. The complete analytical results for the water samples are included as **Appendix K**.

3.4.14 Site Restoration

No off-site borrow material was used to backfill or regrade the disposal pits. Pits A and B and associated monitoring well locations were backfilled using soil from the "Overburden/C1" stockpile. Analytical results for these soils are discussed in **Section 3.5.1** Overburden / C1 Stockpile discussion, below. Excavations at Pits C1 and C2, and monitoring well locations associated with these pits were backfilled by pushing native soil from high areas surrounding the excavation areas back into the excavation locations and grading to promote positive drainage away from the sites. During the

backfill and regarding operations, the temporary silt fence located to the east, north, and northwest of the Overburden/C1 stockpile was removed and disposed at the licensed landfill. Additionally, excavation site stabilization benches, temporary soil berms, and storm water diversion swales created around each of the excavation pit sites were also regraded to promote positive flow throughout the former work areas.

Once all of the excavation sites were backfilled and graded, all areas were raked and seeded on November 2 and 3, 2009 with winter wheat to promote vegetation and to prevent erosion.

The erosion and run-off controls established between the work/support/laydown areas and the wooded area and creek to the south and the drainage ditches to the west along Service Road No. 1 were left in place, pending the revegetation of the work/support area sites.

3.5 ANALYTICAL RESULTS

3.5.1 Conventional Chemical Analyses

Confirmatory Soil Sampling Results

Pit A

Thirteen (13) confirmatory soil samples, including three floor, five sidewall, and five perimeter samples were collected from Pit A after the completion of the initial excavation in July 2009. Summary results for these samples are provided in **Table 3-6**. The full data set for these samples is provided in **Appendix B**. The location of the final confirmatory soil samples is shown in **Figure 3-8**.

Thirty-one contaminants of potential concern (COPCs) were identified in one or more of the 13 confirmatory samples collected from Pit A, including eight VOCs, one SVOC, one PCB, one organochlorine pesticide, and 20 metals. Of the 31 COPCs identified, only two metals, chromium (1 time) and nickel (7 times) were observed at concentrations that exceeded NYSDEC's Unrestricted Use SCO levels. The range of concentrations observed for chromium in soil ranged from a minimum of 15.1 milligrams per Kilogram (mg/Kg) to a maximum of 46.7 mg/Kg, with a mean of 20.1 mg/Kg and a 95th percentile upper confidence limit (95th UCL) of the arithmetic mean of 24.5 mg/Kg, which is below the NYSDEC Unrestricted Use SCO for chromium of 30 mg/Kg. The range of concentrations noted for nickel in the Pit A soil samples varied from a minimum of 25.4 mg/Kg to a maximum of 39.6 mg/Kg, with a mean concentration of 31.2 mg/Kg and a 95th UCL value of 33.65 mg/Kg. The NYSDEC Unrestricted Use SCO for nickel is 30 mg/Kg. Comparison of the mean and 95th UCL nickel values in the remaining Pit A soils are generally consistent with the nickel values found in Seneca specific background samples.

Based on the limited number of compounds (i.e., two) that were detected at concentrations above their respective Unrestricted Use SCO levels, and the fact that while nickel was detected more than once at a concentration above its SCO the 95th UCL concentration found for all confirmatory samples from this pit was 33.7 mg/Kg which is generally consistent with the Seneca background concentration for nickel in soil, the Army determined that no further excavations were required at Pit A.

Pit B

Ten (10) confirmatory samples, including one floor, four sidewall, and five perimeter (four samples and a duplicate) were originally collected from Pit B.

Twenty-four (24) COPCs were detected in one or more confirmatory samples characterized from Pit B, including two VOCs, one PCB, two organochlorine pesticide, and three metals. Of these 24 COPCs identified, one PCB (Aroclor-1254 – 2 times), two organochlorine pesticides (4,4'-DDE – 2 times; 4,4'-DDT – 1 time), and one metal (nickel – 3 times) were observed at concentrations that exceeded NYS's Unrestricted Use SCO levels. Of further note was that all of the observed exceedances for the PCB and the organochlorine pesticides, and one of the exceedances for nickel were collocated in two samples collected from the sidewall and perimeter on the north face of Pit B. Based on this observation, additional excavation was performed along this pit face once the field crew returned to the burial pit sites to remove the contaminated soil.

Confirmatory results from the first subsequent excavation at Pit B continued to show evidence of aroclor-1254 at concentrations in excess of the State's Unrestricted Use SCO in both the sidewall and perimeter samples (S12EXSW-O-8-14 and S12EXPR-O-8-14, respectively), so this process was repeated a second time. Confirmatory data from the second additional excavation sequence (samples S12EXSW-O-8-05 and S12EXPR-O-8-05, respectively) showed that the aroclor-1254 were not detected at concentrations in excess of NYSDEC's Unrestricted Use SCO levels.

At the conclusion of excavations at Pit B only 22 COPCs were found in the final confirmatory samples collected from Pit B, and of these COPCs the only contaminant that was observed to be present at concentrations in excess of its NYSDEC Unrestricted Use SCO goal was nickel. The range of concentrations noted for nickel in the Pit B varied from a minimum of 20.9 mg/Kg to a maximum of 34.9 mg/Kg, with a mean concentration of 27.7 mg/Kg and a 95th UCL value of 30.1 mg/Kg. The NYSDEC Unrestricted Use SCO for nickel is 30 mg/Kg. In comparison the mean and 95th UCL nickel values in the Pit B soils are slightly lower than those found in Seneca specific background samples.

Based on the findings that nickel was the only compound observed to exceed NYSDEC Unrestricted Use SCO levels, and that this occurred in fewer than half of the confirmatory soil samples collected, and that the 95th UCL calculated for all of the final data at the site showed close agreement with the Unrestricted Use SCO (30.12 mg/Kg versus 30 mg/Kg) the Army determined that no further excavations were required at Pit B.

Summary results for the final samples collected from Pit B are provided in **Table 3-7**. The full data set for these samples is provided in **Appendix B**, **Table 1C**. Analytical results for the samples that were excavated are provided in **Appendix B**, **Table 2**. The location of the final confirmatory soil samples is shown in **Figure 3-8**.

Pit C1

Twenty-one (21) confirmatory samples were originally collected from Pit C1; these included three floor samples, nine sidewall samples (eight samples and a duplicate), and nine perimeter samples

(eight samples and a duplicate). Summary analytical results for these samples are provided in **Table 3-8**. The full data set for samples collected from Pit C1 is provided in **Appendix B**, **Table 1C**. The location of the final confirmatory soil samples is shown on **Figure 3-9**.

Thirty-four (34) COPCs were detected in one or more confirmatory samples collected from Pit C1, including six VOCs, five SVOCs, three organochlorine pesticide, and 20 metals. Of these 34 COPCs, three organochlorine pesticides (4,4'-DDD – 1 time, 4,4'-DDE 2 times; and 4,4'-DDT – 2 times), and five metals (chromium, copper, manganese and zinc – 1 time each; and nickel – 8 times) were detected at concentrations that exceeded their respective NYSDEC Unrestricted Use SCO levels. Estimated 95th UCLs for four of the metals (i.e., chromium, copper, manganese, and zinc) computed for Pit C1 data were all lower than their respective NYSDEC Unrestricted Use SCO values. The estimated 95th UCL for nickel (i.e., 35.1 mg/Kg) was higher than its NYSDEC SCO value (i.e., 30 mg/Kg) but generally consistent with the 95th UCL computed for nickel in background soils at Seneca (34 mg/Kg). With reference to the organochlorine pesticide species, all five detections and noted exceedances were collocated in two separate perimeter samples collected from the southern end of the overall excavation.

Based on the determination that nickel was the only compound observed to exceed its NYSDEC Unrestricted Use SCO level in more than 10 percent of the samples collected, and that this occurred in fewer than half of the confirmatory soil samples collected, and that the 95th UCL calculated for all of the final data at the excavation was generally consistent with background concentrations for nickel at the Depot, the Army determined that no further excavations were required at Pit C1.

Pit C2

At the conclusion of excavations at Pit C2, 43 confirmatory soil samples were collected and analyzed for conventional chemical COCs. These included eight floor samples (six samples and two duplicates), 15 perimeter samples, and 20 sidewall samples (19 samples and a duplicate). Excavation floor samples were not collected in grid cells I2 and J3 because the excavations in these areas extended to bedrock. Paired sidewall and perimeter samples were not collected at locations S12EXSW-J-2-02 and S12EXSW-I-3-04 due to the gentle slope of the excavations that were present at these locations. A perimeter sample was not collected from grid cell I-2-03 where a sidewall sample (i.e., S12EXSW-I-2-03) was collected from a limited excavation that was opened to remove a cache of debris that was identified during geophysical surveys conducted as part of the final removal action verification activities. Summary analytical results for these samples are provided in **Table 3-9**. The full data set for these samples is provided in **Appendix B**, **Table 1C**. Analytical results for the samples that were excavated are provided in **Appendix B**, **Table 2**. The approximate location of the final confirmatory soil samples is shown in **Figure 3-10**. The actual placement of sample locations on the map has been moved from survey coordinate locations to enhance readability and understanding.

Thirty-eight (38) COPCs were detected in one or more confirmatory samples collected from Pit C2, including nine VOCs, three SVOCs, one PCB, five organochlorine pesticides, and 20 metals. Of these 38 COPCs, only three metals and three pesticides were detected at concentrations in excess of

NYS Unrestricted Use SCO values in any samples. Nickel (15 times) and manganese and zinc (1 time, each) were the three metals detected at concentrations that exceeded their respective NYSDEC Unrestricted Use SCO levels. The single exceedance for manganese was found at a level of 1630 mg/Kg, and was found in sample S12EXPR-I-2-02. The estimated 95th UCL for manganese for samples from Pit C2 was 557 mg/Kg, which is well below NYSDEC's Unrestricted Use SCO value of 1,600 mg/Kg. The single exceedance for zinc was found at a level of 118 mg/Kg, and was found in sample S12EXSW-J-4-01. The estimated 95th UCL for zinc for samples from Pit C2 was 60.2 mg/Kg, which is well below NYSDEC's Unrestricted Use SCO value of 109 mg/Kg. Sample concentrations reported for nickel in samples from Pit C2 ranged from a minimum of 11 mg/Kg to a maximum of 48 mg/Kg, with a mean value of 29.2 mg/Kg and an estimated 95th UCL level of 30.8 mg/Kg, which is just above the NYS Unrestricted Use SCO of 30 mg/Kg, and slightly lower than the level of nickel found in background soils at the Depot.

With reference to the three pesticides, alpha-BHC was detected in four samples and two of these samples contained concentrations that exceeded its NYSDEC Unrestricted Use SCO value of 20 μg/Kg. Beta-BHC was detected in one sample, at a level of 63 μg/Kg which exceeds its NYS Unrestricted Use SCO of 36 μg/Kg. Comparably, delta-BHC was detected in three samples with one concentration measured at a maximum of 61 μg/L as compared to its Unrestricted Use SCO value of 40 μg/Kg. Based on the assessment of this data, excavations were determined to be complete at Pit C2.

Overburden / C1 Stockpile

Concurrent to the collection of confirmatory samples from the historic disposal pit excavation sites, samples of soil from the stockpile containing stripped overburden and the sub 6-inch cut of processed soil from the Burial Pit C1 excavation were collected and submitted to the laboratory for chemical analysis. All of these samples were submitted to CAS Inc. in Rochester NY and each of these samples was characterized for the same list of analytes as were characterized in the confirmatory samples collected from the excavation sites (discussed above). Prior to the collection of samples from the stockpile, a GPS survey of the stockpile was performed and the approximate volume of overburden/C1 material contained in the windrow was estimated to be 2,200 – 2,400 cy. Samples for characterization were collected at a rate of one per every 200 cy of soil (or less). The full analytical data for conventional COCs are provided in **Appendix B**, **Table 3C**.

Twelve soil samples were collected and analyzed from the Overburden/C1 stockpile after the completion of the preliminary excavations at the historic burial pit sites. Summary analytical results for these samples are provided in **Table 3-10**. Thirty-four contaminants of potential concern (COPCs) were detected in one or more of the collected samples C2, including three VOCs, 11 SVOCs, one PCB, and 19 metals. Of the 34 COPCs identified, only nickel (5 times) was ever detected at concentrations in excess of its NYSDEC Unrestricted Use SCO level (30 mg/Kg). The maximum detection observed for nickel was at a level of 32.3 mg/Kg. The estimated 95th UCL for nickel for samples from the overburden/C1 stockpile was 30.5 mg/Kg, which is only slightly above

the NYSDEC's Unrestricted Use SCO value. Based on the assessment of the data, the Army determined that the "Overburden/C1" stockpile was suitable for use as backfill at the sites.

3.5.2 Radiological Survey Results

A summary of the Radiological Survey results are presented below. Complete analytical data are provided in **Appendix B**, **Table 3R**. A full discussion of the Radiological Survey process for radiological contaminants of concern is provided in **Appendix D.**

The impacted areas of SEAD-12 consist of Pits A/B and Pits C1 and C2. Pit C1 and C2 results were combined into one data set (Pit C) to maintain consistency with the Risk Assessment that was performed at SEAD-12 in 2000. Ten samples were collected from clean overburden material overlying the actual burial pit locations. These clean overburden soils/fill were excavated from the top 2.5 feet at Pit A and B, the top 0.5 feet at Pit C Area 1 north, and the top 3 feet at Pit C Area 2 south and set aside for temporary staging (Parsons, 2009). Because these soils were intermixed during the backfill and restoration and used to backfill Pit A/B, the overburden sample results were added to the Pit A/B evaluation to represent the current condition of the backfilled pit.

Confirmation survey soil sample data from 2009 was combined with previous SEAD-12 radiological sample data from the original baseline risk assessment (BRA) to develop an updated risk/dose model for the site. A detailed description of this assessment is provided in **Section 7.0**. Analytical data for the BRA are included in **Appendix D**, **Attachment C**.

Systematic soil sample summary results for the pit surveys are provided in **Appendix D, Table 6-1**. Biased soil sample summary results for the pit surveys are provided in **Appendix D, Table 6-2**.

Pit A/B

Confirmation survey activities in SEAD-12 Pit A/B included a GWS and collection of 22 systematic surface soil samples. Pit A/B is 564 m^2 in area. Three biased soil samples were collected based on the results of the GWS. Biased sample S12EXSW-N-10-01 was collected at the location of highest gamma activity along the northeast sidewall of Pit A. The GWS is displayed in **Appendix D**, **Figure 7-1**. Systematic and biased sample locations are displayed in **Appendix D**, **Figure 7-2**.

Pit C

Confirmation survey activities in SEAD-12 Pit C (consisting of Pits C1 and C2) included a GWS and collection of 50 systematic surface soil samples. Pit C is 2,903 m^2 in area. Additional biased soil sampling was performed based on the results of the GWS. Biased sample S12EXSW-N-10-01 was collected at the location of highest gamma activity along the southwest sidewall of Pit C1. Biased sample S12EXSW-E-1-01 was collected at the location of highest gamma activity on the excavation sidewall of Pit C1. Biased sample S12EXFL-K-3-01 was collected at the location of highest gamma activity on the excavation floor of Pit C2. GWS results for pits C1 and C2 are displayed in **Appendix D**, **Figures 7-3** and **7-5**, respectively. Systematic and biased sample locations for pits C1 and C2 are displayed in **Appendix D**, **Figures 7-4** and **7-6**, respectively.

3.6 CONSTRUCTION COSTS

The total construction costs for the RA at SEAD-12 were approximately $1,225,000. The cost breakdown is as follows:

Engineering/Oversight	$295,000
Construction	$815,000
Analytical Laboratory	$115,000

4.0 UPDATED HUMAN HEALTH RISK ASSESSMENT

Human health risk assessments for Disposal Pits A/B and C were prepared and included in the Final SEAD-12 Remedial Investigation (RI) Report in August 2002. Potential carcinogenic risks and non-carcinogenic hazard indices were estimated for four current and future recreational/conservation receptors and an adult, child, and lifetime resident based on exposure to site surface and subsurface soils, groundwater, surface water, and sediments. The media-specific datasets used for estimating risks and hazard levels associated with groundwater, surface water and sediment exposures were based on SEAD-12 site-wide data that were collected during the RI and the earlier Expanded Site Investigation (ESI) of the area. The datasets used for surface and subsurface soils were based on Disposal Pit area-specific data that were collected from Disposal Pit A/B and Disposal Pit C during the RI and ESI.

Soils within Disposal Pits A/B and C were excavated and disturbed during the removal action conducted to recover and secure military-related items. More than 5,400 tons of material excavated from these Disposal Pits were characterized and disposed at a licensed, off-site landfill during the removal action, while more than 130 tons of mixed recyclable metals were recovered and sent to a metal recycler for recovery, and more than 13 tons of military-related items were secured by the Army and disposed of.

New chemical and radiological data for soil that remains at the excavated burial pit sites was obtained from each of the former Disposal Pit locations and these data have been discussed and summarized in earlier sections of this report. The newly collected chemical results have been compared to State of New York unrestricted use soil cleanup objective (SCOs) levels. Similarly, the newly collected radiological results have been assessed relative to background levels of radioactivity that are present at another burial pit location in the general vicinity of the SEAD-12 Disposal Pits where no radiological wastes or debris was identified. These comparisons suggest that site soils at each of the former SEAD-12 burial pit locations achieve the soil cleanup objectives defined by the State of New York, and as such unrestricted use might be allowed; however, radiological results suggest that the levels of ^{226}Ra in the vicinity of Disposal Pits A/B and C may be elevated relative to background, while ^{232}Th levels are generally consistent with those previously reported for the SEAD-63 burial site.

To more fully assess the potential risks and hazards that may still be present the SEAD-12 Radiological Waste Burial Site Disposal Pits, the Army has updated the human health risk assessments previously reported for these locations in the SEAD-12 RI Report. The technical memorandum providing specific details of the updated risk assessment conducted for the chemical contaminants in soil is provided in its entirety as **Appendix H** of this report. Complete details of the radiological constituent risk assessment update that has been prepared is contained in **Appendix D**, **Section 7** and **Attachments C – G** of this report (*Radiological Confirmation Survey Report* [Cabrera, 2011]). The following discussion presents and summarizes the findings and conclusions of the updated human health risk assessments that have been prepared.

The datasets that have changed based on the performance and completion of the military-related item removal action are the site-specific chemical and radiological soil datasets that were used for Disposal

Pits A/B and C. Datasets for groundwater, surface water, and sediment remain unchanged because no new data for samples from these media were collected as part of the removal action performed.

The prior soil datasets used for Pit A/B and C were individually replaced by a new total soil dataset prepared for Pit A/B and C. These datasets are comprised of analytical results that were collected during the RI or ESI and which are outside of the area of the work sites that have been excavated combined with new analytical data that were collected during excavation confirmatory sampling and backfill characterization and qualification activities performed. Confirmatory soil sample results from historic Disposal Pits A/B locations have been merged with backfill characterization sample results for the Overburden/C1 Stockpile that was used as backfill in this location and RI and ESI soil sample data from beyond the excavation sites to update this dataset. As assembled, the Disposal Pit A/B soil dataset contains results from a maximum of 60 soil samples that were collected from the area of this historic burial site. Confirmatory soil sample results collected from locations within excavations opened for removal of military-related items from Pits C1 and C2 (collectively Pit C) have now been combined with historic ESI and RI soil sample results to yield a dataset that now contains results from 85 samples.

4.1 SITE-SPECIFIC DATA EVALUATION CONSIDERATIONS

The RI Report (Parsons, 2002) and the *SEAD-12 Construction Completion Report* (Parsons, 2011) provide data on the nature and extent of radiological constituents present at the SEAD-12 site. These site constituents were designated based on the operational history of each area, including the chemicals and radionuclides known or suspected to have been used at each specific area.

4.1.1 Identification of Chemical Constituents of Potential Concern

Non-radiological (i.e., chemical) contaminants found in soil evaluated in this risk assessment (i.e., Contaminants of Potential Concern [COPCs]) were selected by comparing maximum detected concentrations (MDCs) left at an exposure point location (i.e., Disposal Pit A/B or C) with USEPA Regional Screening Level (RSLs) for residential soil (June 2011 Version). Published RSL values for carcinogenic chemical compounds were used at USEPA's listed value, which corresponds to a target cancer risk of 1×10^{-6}; comparator RSLs for non-carcinogenic chemical compounds were reduced by a factor of 10 (i.e., 0.1 times the listed RSL value), which corresponds to a hazard quotient of 0.1. Chemicals with concentrations below the comparator RSLs were eliminated from the list of COPCs evaluated in the updated risk assessments. Chemicals with no available screening values and chemicals with detected concentrations above the screening values were retained as COPCs. In addition, all members of a chemical class that had any member selected as a COPC were also retained as COPCs (e.g., all detected carcinogenic polycyclic aromatic hydrocarbons [cPAHs] were retained as COPCs if any one cPAH was identified as a COPC based on the aforementioned screening process), if they were detected at any level in a Disposal Pit's soil dataset.

Fifty six (56) soil contaminants, including 10 VOCs, 19 SVOCs, five pesticide/PCBs and 22 metals were initially evaluated as COPCs for Disposal Pit A/B. After the screening of the Pit A/B COPCs, three cPAHs and seven metals were retained as COPCs, and due to the selection of three cPAHs, four

other cPAHs that were also detected in the soil at Disposal Pit A/B, but which were not observed to exceed screening values, were also retained as "chemicals of the same group" (CSG) for further evaluation in the risk assessment. In addition, three other SVOCs and four other metals were also retained as COPCs in the risk assessment based on the determination that no comparator RSL screening value existed for them.

Comparably, 58 soil contaminants, including nine VOCs, 18 SVOCs, seven pesticides and 24 metals/cyanide were initially evaluated as COPCs for Disposal Pit C. Based on screening versus RSL comparator values, four cPAHs, one organochlorine pesticide, and nine metals were retained as COPCs. Four other SVOCs, one organochlorine pesticide, and four metals were also retained for further evaluation based on the determination that no comparator RSL screening value existed for them. Due to the retention of the four cPAHs, the other three cPAHs were also retained as "chemicals of the same group" (CSG), and one additional organochlorine pesticide was retained since it was an isomer of the two other organochlorine pesticides that were retained.

Data for the identified metal COPCs for Pit A/B and C were then compared to SEDA background soil concentrations found for the same metals to assess whether there was any indication that the metals found at the disposal pit excavation site could be attributed to the release of material from activities historically conducted in the area of concern (AOC), or could be associated with natural conditions. This comparison had been used and allowed during the risk assessment performed during the 2002 RI, and was repeated in the update to ensure that data processing procedures used in both risk evaluations were equivalent. The comparison to background was performed using the Wilcoxon-Mann-Whitney (WMW) Test provided in the USEPA's ProUCL Software package (version 4.01.004). This analysis procedure was used in place of the Wilcoxon Rank Sum test that was applied to the SEAD-12 datasets during the SEAD-12 RI.

The results of the WMW Test for the 11 Pit A/B metals retained indicate that mean concentrations for six of the 11 retained metals are lower than comparable values reported for sample concentrations in the SEDA background dataset. Therefore, the concentrations of these six metals in Disposal Pit A/B cannot be distinguished from background concentrations and there is no definitive indication that a contaminant release has occurred at the site. The WMW analysis for four other metals (i.e., calcium, potassium, selenium, and thallium) indicate that levels found in the vicinity of former Disposal Pit A/B are higher than those identified in the background soil, so these metals are retained as COPCs for further analysis under the risk assessment. The WMW results for sodium provided conflicting information as the results indicate that all of the tested hypotheses (i.e., site equals background, site greater than or equal to background, site less than or equal to background) were true. However, since it is not mathematically possible for two datasets to be greater than and less than each other at the same time it is assumed that the sodium concentrations found at Disposal Pit A/B and the background are equal, and that no release of sodium is likely to have occurred at Disposal Pit A/B. Therefore, based on risk assessment pre-screening and background evaluations, 14 COPCs (i.e., 10 SVOCs, four metals) were evaluated for soil in the updated risk assessment for Disposal Pit A/B.

The results of the WMW Test for the 13 Pit C metals retained indicate that mean concentrations of eight of the retained metals are lower than comparable values reported for sample concentrations in the SEDA background dataset. Therefore, effects from these metals cannot be distinguished from those of background conditions, and these metals are removed as COPCs. WMW Test results for the other five metals indicate that residual Pit C concentrations were higher than background, so these metals are retained as COPCs in the risk assessment. Therefore, based on risk assessment pre-screening and background evaluations, 19 COPCs were evaluated for soil in the updated risk assessment for Disposal Pit C.

Screening of chemical COPCs in other media (groundwater, surface water, and sediment) of interest at SEAD-12 were performed in a similar manner during the original RI.

4.2 IDENTIFICATION OF RADIOLOGICAL CONSTITUENTS OF POTENTIAL CONCERN (ROPCS)

In this section, the methodology used to select ROPCs is presented. ROPCs differ from site constituents in that the ROPCs are the constituents that have been detected at the site that have gone through an extensive screening process and are retained for quantitative analysis in the risk assessment. Four different types of screenings were performed to identify ROPCs for the SEAD-12 site. The following sections summarize the screening processes.

4.2.1 Data Reduction

For radiological constituents, any daughter product with a half-life of less than 180 days was not evaluated during this assessment. A six-month cutoff half-life was selected in the radiological dose and risk model. The risk model assumes that these decays products (daughters) are in secular equilibrium with respect to the parent radionuclide. Therefore, their contributions are already incorporated in the dose conversion factor (DCF) and risk coefficients of the parent. Due to this,

- Actinium-228 ([^{228}Ac] half-life = 6 hr), daughter product of Radium-228 (^{228}Ra), was evaluated as ^{228}Ra.
- Lead-214([^{214}Pb] half-life = 27 minutes) and Bismuth-214 ([^{214}Bi] half-life = 20 minutes), daughters of ^{226}Ra, were not inputted as separate source terms in the model.
- Lead-212 ([^{212}Pb] half-life = 11 hours), Bismuth-212 ([^{212}Bi] half-life = 61 minutes), and Thallium-208 ([^{208}Tl] half-life = 3 minutes), daughters of Thorium-228 (^{228}Th) were not inputted as a separate source terms in the model.
- Thorium-227 ([^{227}Th] half-life = 19 days), Radium-223 ([^{223}Ra] half-life = 11 days) and Lead-211 ([^{211}Pb] half-life = 36 min) are daughter products of Actinium-227 (^{227}Ac), and none of these were inputted as separate source terms in the model.
- Thorium-234 ([^{234Th}] half-life = 24 days), daughter product of Uranium-238 (^{238}U), was not inputted as a separate source term.
- The half-life of Lead-210 (^{210}Pb) is 22.3 years. After a thorough analysis of the data, of the 20 of 42 samples where ^{210}Pb was detected, the uncertainty associated with those results were

usually 75-100% of the result. In the 22 of the 42 samples where ^{210}Pb was not detected, the results averaged 18.42 pCi/g. In these same results, the ^{226}Ra values averaged 1.62 pCi/g. Since ^{226}Ra decays directly to ^{210}Pb, the results would be expected to be much closer to a 1:1 ratio in soils. Gamma spectroscopy does not provide accurate results for ^{210}Pb in soils due to the difficulty in detecting its low energy (49 kev) gamma photon when it decays. The more common and accurate method to analyze for ^{210}Pb is alpha spectroscopy for polonium-210 (^{210}Po), which is a daughter product of ^{210}Pb. Given these reasons, ^{210}Pb sampling results were not used to determine the EPC for ^{210}Pb. The EPC for ^{210}Pb was set equal to that for ^{226}Ra during the dose and risk evaluation for the disposal pits.

4.2.2 Weight-of-Evidence Screening

The weight-of-evidence screening was performed for all radiological constituents that passed the data reduction screening. If the frequency of detection for a radionuclide in a medium is five percent (5%) or less (i.e., a minimum of one detection out of 20 analytical results), generally, the radionuclide is excluded from further evaluation. This rationale is consistent with USEPA's RAGS guidance (USEPA, 1989). Under this screening, radiological constituents that were detected in less than 5% of the samples from a given medium may be artifacts in the data due to sampling, analytical, or other problems, and may not be related to site activities. These constituents were not included in the assessment.

4.2.3 Background Screening

The background screening was performed for all radiological constituents that passed the first two screenings. This screening consisted of comparing the maximum detected concentration against background sample criteria. Background samples were collected during the BRA, and these results are included in **Attachment C** of Cabrera's Report (**Appendix D**). If the maximum detected concentration was below background criteria, the site constituent was not considered for risk screening. However, if the site constituent was present at concentrations above background criteria, that site constituent was retained for risk screening.

4.2.4 Risk-Based Screening

Risk-based screening for radionuclides present in soil cannot be performed as there are no soil screening values for radionuclides available in the guidance documents supplied by NYSDEC and USEPA. However, risk-based screening was performed for radiological constituents that are present in the groundwater and surface water. Under the risk screening, the maximum detected concentration of the radionuclide was compared against their corresponding USEPA maximum contaminant level (MCL). Any radionuclide that exceeded the MCL was retained as a ROPC for the Site.

4.3 EXPOSURE ASSESSMENT

This section describes the receptors and exposure pathways evaluated in the updated risk assessment. The objectives of the exposure assessment were to estimate the magnitude, frequency, duration, and routes of potential human exposures to COPCs and ROPCs at the Disposal Pit AOCs. Potential receptor groups are identified in the exposure assessment and estimates of exposure or chemical and

radionuclide intake are calculated based on assumptions regarding exposure pathways and exposure parameters. The following sections of the report summarize the exposure assessment process utilized during this risk assessment.

4.3.1 Receptors

The human health risk assessment previously conducted for the Disposal Pits in the 2002 RI Report was completed based on the assumption that land within the AOC would be used for recreational or conservation purposes. Since the submittal of the 2002 RI, SCIDA has re-designated use of the land within SEAD-12 for use as future institutional and training areas. In addition, a tenant has leased a portion of SEAD-12 and is currently using the property for commercial purposes (telecommunications/data warehousing). Nevertheless, the Army updated the risk assessment for Disposal Pits A/B and C in SEAD-12 on the basis that the land will be used for conservation/recreational purposes. The selection of the conservation/recreational activities use for this property makes the risk assessment prepared more conservative (i.e., more stringent because it applies restrictive exposure assumptions) than would one that assumes use of the property for institutional/training purposes, which is more aligned with commercial purposes. In addition, a future 30-year resident (for COPCs) and a future 30-year resident farmer (which assumes consumption of homegrown produce, meats, and dairy products affected by site ROPCs) has been evaluated to assess potential risks and hazards to receptors under the unrestricted use scenario. The residential receptors are provided to address the State of New York's goal for site remediation to "restore the site to pre-disposal conditions, to the extent feasible and authorized by law". Both the resident and resident farmer scenarios assume that six years of the 30-year duration are experienced as a child, 0 to 6 years of age, while 24 years of the 30-year exposure period are lived as an adult (age 18 to 42 years). Therefore, for this update of the SEAD-12 risk assessment the following receptors were evaluated:

1. Current site worker,
2. Future park worker,
3. Future recreational visitor (child),
4. Future construction worker,
5. Future adult and child resident (for hazard assessment), and
6. Future lifetime resident (for COPC carcinogenic risk assessment) and future resident farmer (for ROPC carcinogenic risk assessment and dose assessment).

4.3.2 Identification of Exposure Pathways

Exposures are estimated only for pathways that are considered plausible and complete. A complete exposure pathway possesses the following four elements:

1. a source and mechanism for chemical or radionuclide release,
2. an environmental transport medium,
3. an exposure point, and
4. a human receptor and a feasible route of exposure at the exposure point.

A pathway cannot be completed unless each of these elements is present. **Figure 4-1** illustrates the completed exposure pathways for SEAD-12 Disposal Pit AOCs.

4.3.3 Sources and Receiving Media

Historic maintenance, testing, storage, and disposal operations conducted within the former WSA are the source of potential chemical and radiological contaminants that have been found present at, and within the vicinity of, the Disposal Pit AOCs. Soil may be impacted directly as a result of these operations. Groundwater may be affected due to leaching of potential contaminants in the soil. Sediment and surface water may be affected due to run-off from the affected disposal areas.

4.3.4 Integration of Exposure Pathways

The proper framework of an exposure pathway involves a source, transport medium, exposure point, and an exposure route. The pertinent exposure pathways for SEAD-12 are summarized in **Figure 4-1**. According to RAGS (USEPA, 1989a), a pathway is considered incomplete if one or more of these components is not present. Hence, if there is not a complete pathway, there can be no risk resulting from that theoretical pathway. For the purposes of this updated risk assessment, current and future human exposure pathways have been identified as potential pathways which meet the criteria for an exposure pathway.

The following pathways were not quantified based on the rationale below:

1. Exposure to surface water and sediment while swimming on-site were considered to be unrealistic exposure pathways because the depth of drainage ditches is at most only a few inches. Only occasional, incidental contact with surface water and sediment are evaluated.
2. Ingestion and dermal contact with soil by current off-site area residents was eliminated from the risk assessment based on the unlikely occurrence of a trespasser at SEAD-12. Perimeter security fences remain in place around SEAD-12 and the commercial tenant occupying land to the north and northwest of the former disposal pits controls access to the area via a security force. Land to the south of the former Disposal Pits is controlled by the Army, the SCIDA, and the Seneca County Sheriff's Department.
3. The most realistic current on-site exposure scenario is the site worker scenario. Because the assumptions are based on present data, it was determined that modeling a future site worker would yield no different risks than the current land use scenario.

4.3.5 Summary of Exposure Pathways Quantified

The pathways presented reflect the current onsite and the projected future onsite use of the former Disposal Pit Sites and the larger area of SEAD-12. This section presents the rationale for including exposure pathways in this risk assessment.

Direct Gamma Radiation

External gamma is an important pathway of exposure for radiological constituents, and therefore, it was quantified in this evaluation. This pathway is not applicable for chemical constituents (COPCs).

Inhalation of Particulate Matter in Ambient Air

Surface soil particles may become airborne via wind erosion or mechanical disturbances, or chemicals that are adsorbed onto soil particles may volatilize and be inhaled by receptors present at the site. Therefore, inhalation exposure to dusts and vapors in ambient air was assessed for all current and future onsite receptors for both COPCs and ROPCs.

Incidental Ingestion of On-Site Soils

Humans routinely ingest small amounts of soil or soil-like materials each day, primarily as a result of hand-to-mouth activity. As a rule, young children ingest larger quantities of such materials than do older children and adults, exclusive of construction workers. Soil ingestion is frequently an important pathway of exposure and therefore, was quantified for COPCs and ROPCs in this risk evaluation.

Dermal Contact to On-Site Surface Soils

During the course of daily activities, an on-site worker, recreational visitor, construction worker, or resident/resident farmer could have dermal contact with site soils. Dermal contact with soils could result in absorption of COPCs through the skin, therefore dermal adsorption is usually considered as complete pathway for chemicals; however, ROPCs are typically metals and do not easily pass through the skin, and as such, the dermal pathway was not evaluated for ROPCs.

Ingestion of Groundwater

The shallow groundwater aquifer underlying SEAD-12 is not currently used as a drinking water source. The shallow groundwater aquifer present throughout SEAD-12 and SEDA as a whole, has routinely been proven inadequate with respect to both yield and quality, affected by wide seasonal variations of storm event fed replenishment and the known quality impacts arising from the native soil metals content of the Devonian shale-derived clay/till strata that underlies the Site. Therefore, it is unlikely that a groundwater supply well will be installed in the future for use by future users of the site as an alternative municipal potable water supply exists and distribution lines are present in the area of SEAD-12. Nonetheless, since groundwater use is not prohibited or restricted via an institutional control, the Army has assumed that wells will be installed on site and used to provide potable water; this provides a degree of conservatism to any risk or hazard level predicted in the risk assessment. Therefore, groundwater use is considered a complete pathway and data from the on-site wells are used to calculate exposure concentrations. Exposure via ingestion of groundwater containing COPCs and ROPCs was assessed for a future outdoor park worker, a future recreational visitor, and a future resident / resident farmer.

Inhalation and Dermal Contact (Submersion) with Groundwater while Showering

Recreational visitors and residents may come into contact with groundwater while taking daily showers. These receptors may be exposed to COPCs contained in groundwater during showering by dermal contact and volatile chemicals that partition into the air via inhalation. Therefore, this is considered a complete pathway and COPC data from the on-site wells are used to calculate exposure

concentrations. Exposure via inhalation of groundwater and dermal contact (submersion) was assessed for a future recreational visitor. These pathways were not evaluated for ROPCs.

Incidental Dermal Contact to Surface Water and Sediment

There are drainage ditches throughout SEAD-12. Surface water runoff captured in these ditches and the associated wet soil, or sediment, may contain COPCs that have been mobilized from the AOCs. Park workers, recreational visitors, and residents may contact and have their skin exposed to surface water or sediment and be exposed to COPCs that are contained in these media. Therefore, exposures to surface water and sediments COPCs via dermal contact were assessed for a future recreational visitor, a future outdoor park worker and a future resident. Potential impacts from a park worker's dermal contact with surface water containing ROPCs was also evaluated assess potential short-term effects that may be present.

Incidental Ingestion of Surface Water and Sediment

Exposure to surface water and sediment while swimming on-site were considered to be unrealistic pathways of exposure because the depth of drainage ditches is at most only a few inches. As a conservative approach, accidental ingestion of surface water and sediment was considered for only onsite residential receptor scenario. However, exposure to surface water and sediment while wading were evaluated for a downstream receptor in Reeder Creek.

When the drainage ditches are dry, there is potential for contact with the sediment contained in the ditches. While dermal contact with this sediment has been addressed above, there is also the potential that a future resident/resident farmer might ingest some of this sediment (similar to soil ingestion). Ingestion exposure to sediment would be limited, since the sediment would often be covered by surface water or snow. Exposure to sediment by ingestion was assessed quantitatively for a future resident only.

4.4 UPDATE OF COPC RISK CHARACTERIZATION RESULTS

Risk characterization results for soil samples were only updated to estimate potential risk and hazard level changes that have resulted due to changes in COPCs and contaminant concentrations present at Disposal Pits A/B and C due to the completion of the removal action and new post-action soil sampling that was performed. Estimated carcinogenic risks and non-carcinogenic hazard levels predicted during the SEAD-12 Remedial Investigation arising from exposure to SEAD-12 groundwater, surface water, and sediment have only been updated to address new toxicity or reference dose concentrations that may have occurred since the *Remedial Investigation Report at the Radiological Waste Burial Sites (SEAD-12)* (Parsons, 2002) was issued. Radiological risk characterization results have been updated for all media of interest (soil, surface water, sediment, groundwater) due to the collection of the new analytical results for soil, and the evolution and advancement of the RESRAD model that has occurred since the 2002 RI Report was issued.

A detailed discussion of the updated risk assessment process employed to estimate risk and hazard levels due to COPCs remaining at the SEAD-12 site are summarized in **Appendix H** (*Technical Memorandum, Updated Risk Assessment, Radiological Waste Burial Sites*) of this Report. A detailed

discussion of the update of the risk assessment conducted for the ROPCs is provided in **Appendix D** (Cabrera, 2011), **Section 7**, with supporting data and information provided in **Attachments C** through **G** of that document. The discussions presented below in the remainder of this Section present and summarize the findings of these two separately performed operations.

The USEPA-recommended limit for the non-carcinogenic hazard index (HI) is 1.0. The USEPA upper limit for the cancer risk level is $1x10^{-4}$ and its preferred limit is $1x10^{-6}$ or lower.

4.4.1 Risk Assessment Update - COPCs

4.4.1.1 Disposal Pit A/B

The table presented below summarizes the calculated reasonable maximum exposure carcinogenic risks and the non-carcinogenic hazard indices for all receptors due to all chemical (non-radiological) exposure scenarios considered in this risk assessment for Disposal Pits A/B.

Receptor	Hazard Index	Cancer Risk
Current Site Worker	2.1E-04	3.6E-08
Outdoor Park Worker	1.2E-01	2.0E-05
Recreational Child Visitor	3.1E-01	2.0E-05
Construction Worker	1.1E-02	4.7E-08
Adult Resident	9.6E-01	--
Child Resident	2.8E+00	--
Lifetime Resident	--	7.0E-04

Current Site Worker

Three chemical exposure routes were evaluated for the site worker. The total cancer risk from all chemical exposure routes is below the USEPA target range for the RME. Likewise, the total non-cancer hazard index from all exposure routes is less than one for the RME.

Future Outdoor Park Worker

Six chemical exposure routes were evaluated for the outdoor park worker. The total cancer risk from all chemical exposure routes is within the USEPA target range for the RME. The total non-cancer hazard index from all exposure routes is less than one for the RME.

Future Recreational Visitor (Child)

Eight chemical exposure routes were evaluated for the child recreational visitor. The total cancer risk from all chemical exposure routes is within the USEPA target range for the RME. The total non-cancer hazard index from all exposure routes is less than one for the RME.

Future Construction Worker

Three chemical exposure routes were evaluated for the construction worker. The total cancer risk from all chemical exposure routes is below the USEPA target range for the RME. Likewise, the total non-cancer hazard index from all exposure routes is less than one for the RME.

Future Resident

Nine chemical exposure routes were evaluated for the future resident. For the RME, the total cancer risk from all chemical exposure routes, 7.0×10^{-4}, exceeds the USEPA target range. The total non-cancer hazard index from all chemical exposure routes for the adult resident is below, while the child resident's hazard index exceeds (HI = 2.8) USEPA's preferred limit of 1.

Dermal Contact with groundwater and surface water are the exposure routes responsible for the calculated RME cancer risk. The chemical that drives both of the noted carcinogenic risk levels is benzo(a)pyrene: cancer risk for dermal contact to groundwater equals 3.3×10^{-4}; cancer risk for dermal contact to surface water equals 2.2×10^{-4}.

The adult and child resident's elevated HI are primarily driven by dermal contact with surface water, with other significant impacts from ingestion of groundwater, and lesser contributions from dermal contact and inhalation of with groundwater. The non-carcinogenic hazard quotient due to the presence of chrysene in surface water is the contaminant most responsible for the noted HI increases; chrysene impact was not quantified in the RI because no dermal RfD was identified. The noted hazard indices increase for the adult and child resident is due to ingestion of cobalt in the groundwater, which was not quantified in the RI risk assessment. The noted increase in the HI levels due to dermal contact with groundwater is also attributable to cobalt.

4.4.1.2 Disposal Pit C

The next table summarizes the calculated reasonable maximum exposure carcinogenic risks and the non-carcinogenic hazard indices for all receptors due to all chemical (non-radiological) exposure scenarios considered in this risk assessment for Disposal Pits A/B.

Receptor	Hazard Index	Cancer Risk
Current Site Worker	2.6E-04	2.2E-07
Outdoor Park Worker	1.2E-01	2.2E-05
Recreational Child Visitor	3.1E-01	2.0E-05
Construction Worker	1.0E-02	1.7E-07
Adult Resident	9.6E-01	--
Child Resident	2.8E+00	--
Lifetime Resident	--	7.0E-04

Current Site Worker

Three chemical exposure routes were evaluated for the current site worker at Pit C. The total cancer risk from all chemical exposure routes is below the USEPA's target range of $1 \times 10^{-4} - 1 \times 10^{-6}$, based on a RME. Likewise, the total non-cancer hazard index from all exposure routes is less than 1.

Future Outdoor Park Worker

Six chemical exposure routes were evaluated for the outdoor park worker at Pit C. The total cancer risk from all chemical exposure routes is within the USEPA's target range for the RME. The total non-cancer hazard index from all exposure routes is less than 1 for the RME.

Future Recreational Visitor (Child)

Eight chemical exposure routes were evaluated for the child recreational visitor at Pit C. The total cancer risk from all chemical exposure routes is within the USEPA's target range for the RME. The total non-cancer hazard index from all exposure routes is less than one for the RME.

Future Construction Worker

Three chemical exposure routes were evaluated for the future construction worker at Pit C. The total cancer risk from all chemical exposure routes is below the USEPA's target range for the RME. Likewise, the total non-cancer hazard index from all exposure routes is less than one for the RME.

Future Resident

Nine chemical exposure routes were evaluated for the future resident. For the RME, the total cancer risk from all chemical exposure routes, 7.0×10^{-4}, exceeds the USEPA target range. The total non-cancer hazard index from all chemical exposure routes for the adult resident is below, while the child resident's hazard index exceeds (HI = 2.8) USEPA's preferred limit of 1.

Dermal Contact with groundwater and surface water are the exposure routes responsible for the calculated RME cancer risk. The chemical that drives both of the noted carcinogenic risk levels is benzo(a)pyrene: cancer risk for dermal contact to groundwater = 3.3×10^{-4}; cancer risk for dermal contact to surface water 2.2×10^{-4}.

The adult and child resident's elevated HIs are primarily driven by dermal contact with surface water, with other impacts from ingestion of groundwater, and lesser contributions from dermal contact and inhalation of with groundwater. The quantitation of a non-carcinogenic hazard quotient due to the presence of chrysene in surface water is the contaminant most responsible for the noted HI increases; chrysene impact was not quantified in the RI because no dermal RfD was identified. The noted hazard indices increase for the adult and child resident is due to ingestion of cobalt in the groundwater, which was not quantified in the RI risk assessment. The noted increase in the HI levels due to dermal contact with groundwater is also attributable to cobalt.

4.4.2 Risk Assessment Update - ROPCs

4.4.2.1 Disposal Pit A/B

The table presented below summarizes the anticipated dose and cancer risk that results due to receptor exposure to ROPCs in all media at Disposal Pit A/B. The State of New York's threshold radiation dose is 10 mrem/year. The USEPA's recommended cancer risk range is $1 \times 10^{-4} - 1 \times 10^{-6}$ with a preference for lower risk levels. Review of the summary data presented below indicates that all anticipated radiological dose levels are below the identified guidance range, while the anticipated cancer risk arising from exposure to ROPCs at the Disposal Pit site range from a high of 1.1E-05 for

the resident farmer (within the USEPA's recommended range) to levels below the USEPA's recommended range for the current site worker, the recreational visitor and the construction worker.

Receptor	Dose[1]	Cancer Risk
Current Site Worker	0.02	4E-07
Outdoor Park Worker	0.30	3E-06
Recreational Child Visitor	0.11	2E-07
Construction Worker	0.74	2E-07
Lifetime Resident Farmer	1.9	1.1E-05

1 Units for Dose are mrem/yr; guidance value limit is 10 mrem/yr

4.4.2.2 Disposal Pit C

The table presented below summarizes the anticipated dose and cancer risk that results due to receptor exposure to ROPCs in all media at Disposal Pit C. Review of the summary data presented below indicates that all anticipated radiological dose levels are below the identified guidance range, while the anticipated cancer risk arising from exposure to ROPCs at the Disposal Pit site range from a high of 4.1E-05 for the resident farmer (within the USEPA's recommended range) to levels below the USEPA's recommended range for the current site worker and the construction worker.

Receptor	Dose[1]	Cancer Risk
Current Site Worker	0.05	9E-07
Outdoor Park Worker	0.7	1E-05
Recreational Child Visitor	0.3	2E-06
Construction Worker	0.7	5E-07
Lifetime Resident Farmer	1.9	4.1E-05

1 Units for Dose are mrem/yr; guidance value limit is 10 mrem/yr

4.4.3 Cumulative Assessment of Site Hazards, Dose, and Cancer Risk Levels

4.4.3.1 Disposal Pit A/B

The table presented below summarizes the anticipated non-carcinogenic hazard, dose, and cancer risk levels that result due to receptor exposure to COPCs and ROPCs in all media at Disposal Pit A/B. The State of New York's threshold radiation dose is 10 mrem/year. The USEPA's recommended cancer risk range is $1 \times 10^{-4} - 1 \times 10^{-6}$ with a preference for lower risk levels, while its recommended non-carcinogenic hazard level is 1. Review of the summary data presented below indicates that all anticipated radiological dose levels are below the identified guidance range, while the anticipated non-carcinogenic hazard indices for all receptors except the child resident are below USEPA's preferred limit of 1. The anticipated carcinogenic risks for all of the conservation/recreation receptors evaluated are within or below the USEPA's recommended risk range, while the lifetime resident's/resident farmer's estimated cancer risk exceeds USEPA's preferred upper limit.

Receptor	Hazard Index	Dose[1]	Cancer Risk
Current Site Worker	2.1E-04	0.02	4.4E-07
Outdoor Park Worker	1.2E-01	0.30	2.3E-05
Recreational Child Visitor	3.1E-01	0.11	2.0E-05
Construction Worker	1.1E-02	0.74	2.5E-07
Adult Resident	9.6E-01	--	--
Child Resident	2.8E+00	--	--
Lifetime Resident/Resident Farmer	--	1.9	7.1E-04

1 Units for Dose are mrem/yr; guidance value limit is 10 mrem/yr

4.4.3.2 Disposal Pit C

The table presented below summarizes the anticipated non-carcinogenic hazard, dose, and cancer risk levels that result due to receptor exposure to COPCs and ROPCs in all media at Disposal Pit C. Review of the summary data presented for Pit C below indicates that all anticipated radiological dose levels are below the identified guidance range, while the anticipated non-carcinogenic hazard indices for all receptors except the child resident are below USEPA's preferred limit of 1. The anticipated carcinogenic risks for all of the conservation/recreation receptors evaluated are within or below the USEPA's recommended risk range, while the lifetime resident's/resident farmer's estimated cancer risk exceeds USEPA's preferred upper limit.

Receptor	Hazard Index	Dose	Cancer Risk
Current Site Worker	2.6E-04	0.05	1.12E-06
Outdoor Park Worker	1.2E-01	0.7	3.2E-05
Recreational Child Visitor	3.1E-01	0.3	2.2E-05
Construction Worker	1.0E-02	0.7	6.7E-07
Adult Resident	9.6E-01	--	--
Child Resident	2.8E+00	--	--
Lifetime Resident/Resident Farmer	--	1.9	7.41E-04

Review of the preceding six tables indicates the estimated child resident's non-carcinogenic hazard indices and the lifetime resident's/resident farmer's carcinogenic risk levels exceed USEPA preferred limits. Both of these exceedances result primarily due to the exposure of the child or lifetime resident's exposure to chemical, and not radiological, constituents. The three most significant exposure pathways contribution to the child resident's elevated non-carcinogenic hazard index level are dermal contact with surface water (1.6), ingestion of groundwater (0.55), and dermal contact with groundwater (0.42). The lifetime resident's cancer risk is impacted by their dermal contact with groundwater (4.3E-04), and their dermal contact with surface water (2.5E-04).

With reference to the child resident's non-carcinogenic hazard index, the chemicals responsible for the 1.6 HI reported for dermal contact with surface water included Aroclor-1242 and chrysene.

Arochlor-1242 was detected in two samples, and chrysene was detected in one of the surface water samples collected during the RI. Neither of these compounds are very soluble in surface water, so it is likely that there detection in any surface water sample results occurs due to the presence of soil particles in the sample that is being analyzed. Furthermore, the single chrysene detection was reported as an estimated concentration and was found in the duplicate of a sample-duplicate pair for which a non-detect value was reported for the sample. This further suggests that sampling errors may contribute to the value reported. Finally, both of the Aroclor-1242 results were found in surface water sample locations that are isolated from the Disposal Pit locations, and where it is unlikely that surface water runoff from the disposal pits could have entered the affected drainage channels. The single chrysene detection was found at a sample location that is hydraulically upgradient of the Disposal Pit sites, so it is likely that this material, if actually present, was released from a location not associated with the historic disposal pit operations.

Dermal contact to groundwater containing di-n-octylphthalate was the next highest contributor to the elevated HI that is noted for the child resident. This compound was detected in six out of 89 groundwater samples characterized during the RI, each time in a different well, and always at concentrations that were reported as estimated values. These wells are spread throughout the SEAD-12 site, although each of these wells was sampled at least twice during the RI, the phthalate was only detected in one of the two samples. Similarly, while ingestion of groundwater containing total dichloroethene was also noted as a significant contributor to the child's elevated HI, it was only detected in one well, once, and neither of its daughter isomers (cis- and trans-1,2-dichloroethylene) were ever noted in any other well at the SEAD-12 site. The single sample it was found in was collected from MW12-37, which was previously located next to Building 813/814 where a trichloroethene plume was found. This plume was remediated during the supplemental RI that was completed in 2004 and 2005.

Therefore, based on this information the noted elevated non-carcinogenic HI reported for the child resident over-estimates the true level of potential hazard that is present in the area of the SEAD-12 Disposal Pits.

The lifetime resident's elevated cancer risk results primarily due to dermal with groundwater (4.3E-06) and dermal contact with surface water (2.5E-06), both of which contain cPAH compounds. As noted above, it is unlikely that cPAHs readily are soluble in either surface water or groundwater, so it is more probable that their presence in the samples collected during the RI results from the capture of some amount of particulate that has these material sorbed onto the particles captured during the sampling process. Closer examination of the groundwater data indicate that four cPAHs contribute to the estimated cancer risk, but of these three were detected one each, while the other was detected in two samples collected from two separate well. All of the measured levels in groundwater were estimated, and for benzo(a)pyrene which was detected twice, it was not detected in the well when it was sampled the second time. Three cPAHs are the primary contributors to the noted carcinogenic risk arising from dermal contact with surface water, and again each of these was only detected in one sample (all collocated).

The removal of these overestimates of carcinogenic risks for the lifetime resident reduces the estimated level of carcinogenic risk to a level of approximately 1E-04, which is consistent with the upper level of USEPA's preferred risk range.

4.5 RISK CHARACTERIZATION RESULTS FOR LEAD EXPOSURES

Determination of receptor exposure to lead was not performed as part of this risk assessment since lead was not identified as a contaminant of concern in any of the datasets analyzed during this assessment.

4.6 UNCERTAINTY ASSESSMENT

The methodology used in this risk assessment is consistent with USEPA risk assessment guidance documents. All risk assessments involve the use of assumptions, judgments, and imperfect data to varying degrees. This results in uncertainty in the final estimates of risk. Assumptions built into the risk assessment in general, overestimate rather than underestimate potential risks, but occasionally can result in underestimating risk. In the following section, an evaluation is presented of the sources of uncertainty in the assessments and the relative influence of these sources on the results of the evaluation. The results of the assessments are presented in terms of the potential for adverse effects based upon a number of conservative assumptions. The tendency to be conservative is an effort toward protecting health. Uncertainty can be found at all phases in the risk assessment: in the analytical data, the exposure assessment, the toxicity assessment, and the risk characterization. Where uncertainty does exist, the BRA uses conservative assumptions to ensure that the outcome will be protective.

For example, there is uncertainty in the initial selection of substances used to characterize exposures and risk on the basis of the sampling data and available toxicity information. Other sources of uncertainty are inherent in the toxicity values for each substance and the exposure assessments used to characterize risk. Finally, additional uncertainties are incorporated into the risk assessment when exposures to several substances across multiple pathways are summed. Areas of uncertainty in each risk assessment step are discussed below.

4.6.1 Uncertainty in Data Collection and Evaluation

Uncertainties in the data collection/evaluation step of the risk assessment focus on determining whether enough samples were collected to characterize the risk, and if sample analyses were conducted in a qualified manner to maximize the confidence in the results. Results of the sample analyses were used to develop a database that includes a complete list of the chemicals by media and their representative concentrations used in the risk assessment. The sampling and analysis for this risk assessment included soil, surface water, sediment, and groundwater components of the comprehensive RI effort that was undertaken at the site in the 1998 to 2002 time frame, and focused confirmatory soil sampling that took place as part of the RA. Therefore, the samples collected and characterized were not collected randomly but were collected either from areas of the site known or suspected to be contaminated (RI samples) or from areas where the sampling and analysis effort focused on the attainment of an acceptable cleanup level. This type of non-random sampling biases

the data collected, in the case of the RI toward overestimating chemical concentrations from the site, as opposed to the RA sampling where lesser levels of contamination are sought.

The judgmental bias in the sample collection also limits the applicability of statistics to the database. Because the statistics used to calculate the upper limit of the 95th-percentile confidence interval assume that the data represents a randomly distributed population, and the database does not, there is inherent uncertainty in the application of statistics. Collection of non-random, judgmental samples was necessary to characterize the nature and extent of contamination that is an objective of the site investigations and actions.

All chemicals detected that were potentially site-related were retained in this assessment. Chemicals that were never detected were eliminated from the assessment. This practice may slightly underestimate risks due to low levels (i.e., below the sample quantitation limit) of eliminated chemicals. Since the RI samples were collected at areas where concentrations were expected to be high, it is very unlikely that any chemicals were present at the site at health-significant levels and not detected in at least one sample. However, if this did occur, this assumption will underestimate risk. The 95th UCLs were used to calculate site-related risks. Since that assumption implies chronic exposure to the 95th UCL concentration, this assumption is likely to overestimate risk.

For surface water, sediment, and groundwater data collected during the RI, if a chemical was detected, it was retained in the risk assessment regardless of how frequently it was detected. To calculate the upper limit of the 95th-percentile confidence interval, chemicals were assumed present in all samples in a media. When the chemical was not detected in a sample, one-half of the SQL was used. Especially for chemicals that were detected in only a few samples, the upper limit of the 95th-percentile confidence interval probably greatly overestimates the amount of the chemical present and, consequently, the risk from the chemical.

Comparatively, all soil data collected during the RI and RA and used to comprise the dataset for the risk evaluation, if a chemical was detected, it was retained in the risk assessment regardless of how frequently it was detected. The EPC for this media was based on the USEPA's ProUCL software package, where either the highest of the recommended UCL values was used as the EPC, or in the event that the recommended UCL value exceeded the maximum detected at the site, the maximum was substituted in its place. This computational and selection process probably leads to the overestimation of the chemical present and, consequently, the risk predicted from the chemical in soil.

The database also includes a number of data validation flags, indicating uncertainty in the reliability of the performance of the analyses done by the laboratory. Flagged data were retained following RAGS guidance.

4.6.2 Uncertainty in Exposure Assessment

There are inherent uncertainties in predicting future land uses and future chemical concentrations. Future land use scenarios were based on current plans for redevelopment of this portion of SEDA. Current land uses were identified by characterizing the site's physical setting.

A large part of the risk assessment is the estimation of risks for a broad set of exposure scenarios and pathways. If exposure does not occur, no risks are present. This assessment does not factor in the probability of the exposure occurring. For certain pathways, exposure may be extremely unlikely. For example, the future park worker, the future recreational visitor and the future resident all are assumed to ingest groundwater under exposure pathways assessed even though it is unlikely that such future use will ever be needed or realized due to the presence of an alternative, non-groundwater derived source of potable water at the site.

Once pathways are identified, exposure point concentrations must be estimated. There is always some doubt as to how well an exposure model approximates the actual conditions receptors will be exposed to at a given site. Key assumptions in estimating exposure point concentrations and exposure assumptions and their potential impact on the assessment are described in the following paragraphs.

There are many factors that determine the level of exposure for each exposure pathway. These factors include inhalation rates, ingestion rates, exposure frequencies, exposure durations, body weight, etc. The values for these exposure factors must be selected by the risk assessor to represent each receptor. For the RME scenarios particularly, upper bound values were selected for each exposure factor. In the calculations of RME exposure, these multiple upper-bound exposure factor estimates compound to yield intakes and absorbed doses that overestimate likely exposure levels.

There is further uncertainty in the quantitative dermal exposure assessments for soil and sediment, since these assessments have been limited to just five compounds with credible dermal absorption factors. Many other compounds were measured in soil and sediment that might be absorbed through the skin, although reliable quantitative absorption factors are not available. Ignoring this larger group of chemicals results in quantitative exposure estimates (absorbed doses), which underestimate the true potential exposures from dermal contact. Consequently, any risk associated with these compounds is also underestimated.

There is considerable uncertainty in the quantitative dermal exposure assessments for surface water (during swimming or wading) and groundwater (during showering). USEPA has cautioned that its recommended approach for calculating dermal exposures to organic chemicals in water may be overly conservative. USEPA expressed concern that for some compounds its model estimates absorbed dose from dermal exposure during showering that are much greater than the dose from ingestion of 2 L/day of water. USEPA further states that model validation is difficult due to a lack of data. This effect is most notable for compound with high estimated Kp values (Kp > 0.1 cm/hr), such as PCBs and PAHs. Consequently, risks associated with these compounds may be overestimated.

There is also uncertainty associated with using oral toxicity values to calculate dermal risks. As seen in the literature, there are differences between oral and inhalation absorption efficiencies. These differences vary and will likely cause either underestimation or overestimation of dermal risks. The efficiencies are generally within 1 order of magnitude of each other, so the uncertainty introduced is less than 1 order of magnitude.

The EPCs derived from the measured chemical concentrations are assumed to persist without change for the entire duration of each exposure scenario. It is likely that some degradation would occur over time, particularly for some of the organic compounds that would reduce the current concentrations. Therefore, this steady state assumption tends to overestimate exposure levels.

4.6.3 Uncertainty in Toxicity Assessment

Of the chemicals of potential concern, a number had no reference dose or slope factors. Several of these compounds have toxicity information such as weight of evidence classification indicating a strong potential for adverse health effects, particularly lead. The absence of toxicity values of these chemicals tends to underestimate risks.

There is considerable uncertainty inherent in the toxicity values for both carcinogens and noncarcinogens. Many of the studies are based on animals and extrapolated to humans, and in some cases, subchronic studies must be used to assess chronic effects. Most cancer slope factors are calculated using a model that extrapolates low dose effects from high dose animal studies. Because toxicity constants are generally based on the upper limit of the 95th-percentile confidence interval or incorporate safety factors to compensate for uncertainty, chemical-specific risks may be overestimated.

Toxicity information was not available for dermal exposure; hence, several assumptions had to be made which may tend to over- or underestimate risk. Oral toxicity values were used without adjustment to calculate risks from dermal exposure because the USEPA has not derived toxicity values for this route of exposure. However, values found in the literature (Owen, 1990) indicate that the uncertainty associated with using oral absorption to estimate dermal absorption is likely less than one order of magnitude. This is due to the lack of scientific studies available to quantify dermal toxicity and carcinogenic potential for the vast majority of priority pollutants and because chemical specific information needed to convert ingested dose to absorbed dose is not available.

4.6.4 Uncertainty in Risk Characterization

Uncertainties in the toxicity assessment are compounded under the assumption of dose additivity for multiple substance exposure. That assumption ignores possible synergisms and antagonisms among chemicals, and assumes similarity in mechanisms of action and metabolism. Synergism is the amplification of one chemical's toxic effect by the presence of a second chemical. For example, it is known that smokers also exposed to asbestos have higher lung cancer incidence than either smokers or asbestos workers alone. Ignoring synergism to the extent that it may occur at environmental levels tends to underestimate risk. Antagonism is the reduction of one chemical's toxic effect by the presence of a second chemical. For example, certain foods (such as broccoli) contain chemicals believed to be anti-carcinogenic. Ignoring antagonism tends to overestimate risk. Risks summed for chemicals having various weight-of-evidence classifications as well as different target organs may also tend to overestimate risk.

4.6.5 Uncertainty Pertaining to Dermal Risks from PAHs in Water

There is considerable uncertainty associated specifically with dermal exposures PAHs in groundwater and surface water at SEAD-12. Areas of uncertainty are discussed below:

1. Low frequency of detection. Benzo(a)pyrene was detected in just two of 89 groundwater samples and one of 52 surface water samples. The statistical treatment of these datasets to develop EPCs is highly uncertain, since it is dominated by "non-detect" values and the underlying distributions cannot be determined. Potential exposures to compounds detected so sporadically cannot be characterized with confidence.

2. Compound detected in one of two sampling rounds. Benzo(a)pyrene in groundwater was detected in just one of two sampling rounds from the same two set of wells. Therefore, its presence is unconfirmed in the second set of tests. Benzo(a)pyrene in surface water was detected in the first study phase, the ESI, but not in the second study, the RI.

3. Concentrations reported below the Sample Quantitation Limit (SQL). The detected results for benzo(a)pyrene in both groundwater and surface water were estimated values below the SQL. Identification and quantitation near the analytical detection is highly uncertain, and these results may be artifacts of the analytical process.

4. Dermal exposure modeling is highly uncertain. USEPA believes that its recommended model for estimating absorbed doses of organic compounds from dermal contact with water may overestimate true potential doses, with factors used here being even more conservative than recent guidance. This would tend to further discount the risk associated with dermal exposure to benzo(a)pyrene (future risk assessment calculations will utilize the lower adherence factor values). Absorbed doses from dermal exposure that greatly exceed the ingestion dose from the same water are counterintuitive and do not appear to be realistic. The model has not been adequately validated.

5.0 VARIATIONS FROM THE PLANNED WORK ACTIONS

The Army issued the *Draft Work Plan for Removal Action at the Radiological Waste Burial Pits Sites (SEAD-12)* (Work Plan) on May 12, 2009. The USEPA issued comments on the Work Plan on July 9, 2009. Mobilization to the site and field work associated with the removal action began on July 13, 2009, before there was time to respond to USEPA comments, prepare revisions to the Work Plan, and reissue the Work Plan for further review and approval. The decision to move forward with the field activity prior to responding to comments received was predicated on the Army's desire to move forward with the process of securing military-related items that were presumed to be buried at the site, and to take advantage of the summer and fall seasons when construction could most readily be performed. This decision was based in large part by the Army's knowledge that the planned excavation sites had previously been characterized during CERCLA site investigations and had been shown not to pose any unacceptable level of human health or ecological risk or threat.

The Army acknowledges that once field work began it became apparent that the historic burial pits contained a greater number and a wider variety of military-related items than had been anticipated prior to the work. In addition, certain of the recovered military-related items also were found to contain sufficient levels of radiation to warrant their continued management as low-level radioactive materials, pending their final demilitarization, dismantling, and their future disposal at a low-level radioactive disposal site. These materials continue to be held by the Army at the SEDA, pending their transfer to another Army contingent that is responsible for the ultimate declassification and release/disposal of such items.

As is documented and described throughout **Section 3** of this report, many modifications were made to the field operations originally planned as defined in the Draft Work Plan to address issues resulting from the discovery of the greater number and wider variety of military-related items than had been expected. Such modifications included the mobilization of additional field equipment and personnel (e.g., screening plant's radiation scanner array, field gamma spectrometer unit, health physicist, "mag and dig" team, EM-31, etc.) to deal with the increased number of military-related items recovered and the determination that much of it showed evidence of low-levels of radiation.

It is essential to note that with the exception of the 13.25 tons of military-related components that were secured by the Army and subsequently transfer for demilitarization and disposal as low-level radioactive waste, no evidence of hazardous waste was identified in any of the materials excavated from the historic disposal pits. The preceding section does indicate that finite levels of hazardous chemical substances were identified in the excavated soils and debris, but all of the identified levels identified were found to be below levels that the State of New York defines as being suitable for unrestricted use, or that are consistent with SEDA background levels for selected metals (e.g., nickel). Furthermore, there were no instances when competent or corroded drums or containers were recovered from the burial pits. There was also no evidence that municipal type trash or debris (e.g., paper waste, trash bags, miscellaneous cans, etc.), in the excavated burial pits.

General observations made during the excavation of these pits continue to suggest that the disposal of the materials at the burial pit locations were planned events, ones which were intended to secure

military-related items in a means that was normal (i.e., landfilled) during the period from the 1940s into the 1960s and 1970s. Visual evidence suggested that many of the buried items had been partially disfigured or dismantled prior to their placement in the burial pits, and that the accumulated total debris cache had been physically compacted to fit within defined burial pits.

After the excavation and recovery and separation of military-related items from other forms of C&D and miscellaneous debris, well characterized discrete waste and recycle streams were created and handled in the field. Military-related items with residual levels of radiation above local background levels were collected and disposed of as low-level radioactive waste. Other non-radioactive, military-related items were successfully dismantled or disfigured and were either sent off-site for disposal as miscellaneous debris at Seneca Meadows Landfill, or placed into the recycle stream for the recovery of metal content. Waste soils, possibly containing quantities of miscellaneous debris smaller than 6 inches in size, and known levels of hazardous chemical and radiological constituents were also sent to the Seneca Meadow Landfill where they have now been disposed, as cover material, in a controlled and monitored environment. Finally, other soils excavated from the burial pits that have been characterized and documented to contain levels of hazardous constituents that are consistent with or below New York State soil cleanup objectives that allow for continuing unrestricted use or surrounding background levels were used as fill at two of the historic burial pits (Pits A and B).

As a result of the completion of this removal action, the Army believes that no further action is required at the sites of the former burial pits within SEAD-12. The accumulated data indicates that materials that were left on site allow for the future use of this area for unrestricted use. Other areas within the greater bounds of SEAD-12 (e.g., area of former volatile organic compound groundwater plume near building 813/814) require continuing review and future actions, and these continuing plans will be addressed and discussed and defined in the pending Proposed Plan and Record of Decision for SEAD-12.

6.0 POST-CONSTRUCTION ACTIVITIES

Post-construction maintenance consists of periodic inspections of the site to determine if the areas of the historic burial pits and the associated work and support areas have reestablished vegetative growth. Seeding was completed by November 3, 2009. The site will be inspected during the spring or early summer of 2010 to determine the growth of vegetation.

7.0 CONCLUSIONS AND RECOMMENDATIONS

The Army conducted a removal action at the historic Radiological Waste Burial Pit site within the northeastern portion of SEAD-12 between July 13, 2009 and November 3, 2009. The objective of this work was to excavate material contained within the pits and allow the Army to examine the contents so that military-related items could be identified, removed, and secured, pending final demilitarization, dismantling, and disposal. The Army's motivation for removing the historic military-related items was to prevent them from being accessed by potential future owners or users of the SEAD-12 property, thereby allowing the property to be transferred for future beneficial reuse. Prior CERCLA investigations of the burial pit sites had indicated that military-related items were commingled with other debris, but that the combined disposed materials did not pose any unacceptable risk or threat to the environment or human health. The removal action also allowed the Army to more thoroughly examine and characterize other materials that had been placed in the pits to further ensure that previously unidentified hazardous substances were not contained, and that the historic disposal pits did not represent a potential future source of contaminant release.

Based on the completion of the removal action, the Army is now able to report that:

- Approximately 5,400 cy of soil were excavated from four historic burial pits of interest (i.e., Pits A, B, C1, and C2) within SEAD-12. Of the total quantity of material excavated from the pits, 5,423 tons of waste and debris was transported to the Seneca Meadows Landfill in Seneca Falls, New York for disposal in a regulated facility that is subject to continuing monitoring of environmental conditions. Most of the SEAD-12 material transported to the landfill (greater than 5,350 tons) was approved for use as cover material within the landfill, with the balance being disposed as C&D or miscellaneous debris.
- Approximately 122 tons of assorted scrap metals, including aluminum, iron, stainless steel, and copper, were transported to Luffman Metal Recyclers in Seneca Falls, New York for future sale to metal refiners.
- Approximately 13.25 tons of military-related items were disposed of at Energy Solutions LLC, Utah. These items were characterized and shown to contain low-levels of radioactive material.
- Seventeen thousand (17,000) gallons of water, including decontamination liquids, and groundwater and storm water that were pumped out of the excavations were characterized for chemical and radiological contaminants and were approved for disposal within the Seneca County Sewer District Number 2 wastewater treatment plant.
- Post excavation geophysical surveys of the work area showed that previously identified underground anomalies indicative of buried material caches had been removed and that there was no indication that buried debris was present anywhere within the former Radiological Waste Burial Pit area in the northeastern section of SEAD-12.
- Approximately 2,300 cy of overburden soil surrounding the deeper excavations and fill from Pit C1, which was found to contain principally C&D and miscellaneous debris, were characterized

for chemical and radiological contaminants and were found to be suitable for use as backfill at the excavation sites.

- Analytical results from 85 confirmatory soil samples collected from the base, sidewalls, and perimeter of the burial pit excavations were collected and characterized for chemical and radiological constituents. The results of the chemical analyses were compared to State of New York Unrestricted Use soil cleanup objective levels, and were found to be consistent with and below established guidance levels that allow for unrestricted use. The results of the radiological analyses were used as the basis of a RESRAD risk analysis, and the results indicated that the areas were suitable for release for unrestricted use.
- The update of the SEAD-12 human health risk assessment based site soil samples that remain in proximity to the former burial sites indicates that there is no unacceptable levels of carcinogenic risk or non-carcinogenic hazards associated with the levels of chemicals that are now documented to remain in the soil at the locations of former Disposal Pits A/B and C. Therefore, the levels of risk and hazard that remain at the sites of the excavations are equivalent to those previously identified during the Remedial Investigation of SEAD-12, which were previously accepted by the agencies based on the risk management and uncertainty discussion presented in the SEAD-12 Remedial Investigation Report.

As a result of the performance and completion of the removal action, the Army contends that all military-related items previously buried within the disposal pits have been removed. In addition, no hazardous waste were found to be present within the former disposal pits, and residual levels of chemical and radiological substances that are present at the former burial pit sites are sufficiently low as to allow for future unrestricted use and unlimited exposures. Based on this determination, it is the Army's intention to move forward with the preparation and submittal of a Proposed Plan and Record of Decision for SEAD-12, which will call for no further action at the burial pits site, but which will address other locations within the SEAD-12 site where land use controls are required.

8.0 REFERENCES

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TABLES

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3.9	Summary of Final Confirmatory Soil Sample Results – Excavation Pit C2
3.10	Summary of Final Confirmatory Soil Sample Results – Overburden/C1 Stockpile

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Table 3-1
SEAD-12 Details of Disposal Pit Excavations

Construction Completion Report for SEAD-12
Seneca Army Depot Activity

Burial Pit Designation	Total Area of Excavation (square feet - sq ft)	Perimeter of Total Excavation (linear feet - lf)	Volume of Total Excavation (cubic yards - cy)	Area of Excavation Where Debris Recovered (square feet - sq ft)	Perimeter of Excavation Where Debris Recovered (linear feet - lf)	Minimum Numer of Floor Samples	Minimum Number of Perimeter/Sidewall Samples
Preliminary Excavations - July 21, 2009							
A	6210	381	1037	2122	245	1	5
B	1328	179	286	663	119	1	4
C1	13536	698	1639	4226	359	2	8
C2	9032	566	1436	2805	531	2	11
Final Excavations - October 19, 2009							
A	6210	381	1037	2122	245	1	5
B	2298	187	349	1404	148	1	4
C1	13536	698	1639	4226	359	2	8
C2	21164	714	2376	7649	1120	4	23

Alll areas, perimeter lengths, and estimated volumes determined using CAD or GIS.

Table 3-2 [1]

Gamma Spectroscopy Quick Screen Results

Construction Completion Report for SEAD-12

Seneca Army Depot Activity

SAMPLE ID	MATERIAL	DETECTED RADIONUCLIDES [2]
S12DS01; S12WS04	Brown sandstone material	Elevated natural uranium (^{238}U) progeny: ^{214}Bi (250 pCi/g); ^{214}Pb (249 pCi/g); ^{210}Pb (243 pCi/g) Elevated natural thorium (^{232}Th) progeny: ^{228}Ac (408 pCi/g); ^{212}Bi (258 pCi/g); ^{212}Pb (368 pCi/g); ^{208}Tl (157 pCi/g)
S12DS02; S12WS03	White metal piece	Elevated natural thorium (^{232}Th) progeny: ^{228}Ac (1,080 pCi/g); ^{212}Bi (685 pCi/g); ^{212}Pb (1,120 pCi/g); ^{208}Tl (403 pCi/g)
S12DS03; S12WS02	Clump of mud with paint/metal flakes	Radium (^{226}Ra) progeny: ^{214}Bi (2,080 pCi/g); ^{214}Pb (1,470 pCi/g); ^{210}Pb (1,960 pCi/g)
S12WS01	Smear of excavated component	No radionuclides reported as detected.

(1) Source: Cabrera Services Inc., *Final Status Survey Report, Removal Action at the Radiological Waste Burial Pits Site (SEAD-12)*, Table 1-1.

(2) Bi = bismuth; Pb = lead; Ac = actinium; Tl = thallium.

Table 3-3 [(1)]

SEAD-12 Soil Background Concentrations

Construction Completion Report for SEAD-12

Seneca Army Depot Activity

RADIONUCLIDE	NUMBER OF MEASUREMENTS	AVERAGE (pCi/g)[(2)]	STANDARD DEVIATION (pCi/g)	MINIMUM (pCi/g)	MAXIMUM (pCi/g)
^{214}Bi (^{226}Ra)	35	0.6	0.1	0.0	0.8
^{228}Ac (^{232}Th)	35	1.0	0.2	0.0	1.3
^{40}K	35	25.1	2.1	21.0	29.4
^{234}Th	35	1.0	0.4	0.4	2.1
Gross Alpha	35	11.0	2.5	6.2	20.9
Gross Beta	35	26.5	4.9	12.5	42.6

(1) Source: Cabrera Services Inc., *Final Status Survey Report, Removal Action at the Radiological Waste Burial Pits Site (SEAD-12)*, Table 3-4.

(2) pCi/g = picocuries per gram.

Table 3-4 [(1)]

SEAD-12 Soil Release Criteria

Construction Completion Report for SEAD-12

Seneca Army Depot Activity

RADIONUCLIDE	$DCGL_W$ (pCi/g)[(2)]
^{226}Ra	1.7
^{232}Th	1.5

(1) Source: Cabrera Services Inc., *Final Status Survey Report, Removal Action at the Radiological Waste Burial Pits Site (SEAD-12)*, Table 3-1.

(2) pCi/g = picocuries per gram.

Table 3-5 [(1)]

MARSSIM Recommended FSS Survey Unit Sizes

Construction Completion Report for SEAD-12

Seneca Army Depot Activity

CLASS	RECOMMENDED SURVEY AREA	
	STRUCTURES	LAND AREAS
1	Up to 100 m^2	Up to 2,000 m^2
2	100 to 1,000 m^2	2,000 to 10,000 m^2
3	No limit	No limit

(1) Source: Cabrera Services Inc., *Final Status Survey Report, Removal Action at the Radiological Waste Burial Pits Site (SEAD-12),* Table 3-2.

Table 3-6
Summary of Final Confirmatory Soil Sample Results - Excavation Pit A
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

Compound	Units	Number of Times Detected	Number of Samples Collected	Maximum Concentration	Mean Concentration[1]	Minimum Concentration[1]	95th UCL[2] Concentration	NYSDEC Unrestricted Use SCO	NYSDEC Number of Exceedances	95th UCL > NYSDEC?	EPA RSL Residential (1/10th) Level	RSL Number of Exceedances	95th UCL > RSL?
Acetone	UG/KG	1	13	3.2	3.2	3.2		50	0		6,100,000	0	
Carbon disulfide	UG/KG	1	13	2.5	2.5	2.5			0		82,000	0	
Ethyl benzene	UG/KG	1	13	2.7	2.7	2.7		1,000	0		5,400	0	
Meta/Para Xylene	UG/KG	1	13	1.3	1.3	1.3		260	0			0	
Methyl ethyl ketone	UG/KG	1	13	1.1	1.1	1.1		120	0		2,800,000	0	
Styrene	UG/KG	2	13	0.57	0.6	0.54			0		630,000	0	
Toluene	UG/KG	8	13	1.1	0.7	0.49		700	0		500,000	0	
Trichloroethene	UG/KG	7	13	1.2	0.7	0.44		470	0		2,800	0	
Bis(2-Ethylhexyl)phthalate	UG/KG	1	13	120	120	120			0		35,000	0	
Aroclor-1254	UG/KG	1	13	63	63	63		100	0		220	0	
Alpha-BHC	UG/KG	1	13	8.5	8.5	8.5		20	0		77	0	
Aluminum[3]	MG/KG	13	13	13,700	10,823	7,340	11,757		0		7,700	12	Yes
Arsenic[3]	MG/KG	13	13	6.4	4.6	3	5.2	13	0	No	0.39	13	Yes
Barium	MG/KG	13	13	223	92.8	63.2		350	0		1,500	0	
Beryllium	MG/KG	13	13	0.78	0.59	0.40		7.2	0		16	0	
Cadmium	MG/KG	6	13	2.5	1.5	0.282		2.5	0		7	0	
Calcium	MG/KG	13	13	119,000	68,512	3,550			0			0	
Chromium[3]	MG/KG	13	13	46.7	20.1	15.1	24.5	30	1	No	12,000	0	No
Cobalt[3]	MG/KG	13	13	13.3	9.8	6.2	10.7		0		2.3	13	Yes
Copper	MG/KG	13	13	41	24.7	18.7		50	0		310	0	
Iron[3]	MG/KG	13	13	26,800	20,115	15,100	21,652		0		5,500	13	Yes
Lead	MG/KG	13	13	33.3	13.0	8.3		63	0		40	0	
Magnesium	MG/KG	13	13	37,400	13,561	4,350			0			0	
Manganese[3]	MG/KG	13	13	634	494	376	533	1600	0	No	180	13	Yes
Mercury	MG/KG	13	13	0.039	0.024	0.016		0.18	0		2.3	0	
Nickel[3]	MG/KG	13	13	39.6	31.2	25.4	33.7	30	7	Yes	150	0	No
Potassium	MG/KG	13	13	1,770	1,602	1,360			0			0	
Selenium	MG/KG	2	13	1.6	1.0	0.403		3.9	0		39	0	
Sodium	MG/KG	13	13	180	115	38.7			0			0	
Vanadium[3]	MG/KG	13	13	24.3	19.5	13.6	21.0		0		0.55	13	Yes
Zinc	MG/KG	13	13	73.6	54.1	45.1		109	0		2,300	0	

Notes:

(1) Mean and minimum value calculated for compounds that do not exceed Unrestricted Use SCOs or EPA RSL Residential (1/10th non-carcinogenic) based on detected concentrations only.
If compound found at concentrations above Unrestricted Use SCO or EPA RSL Residental (1/10th NC), mean value derived from ProUCL version 4.00.04.

(2) 95th upper confidence limit of the arithmetic mean as defined by ProUCL version 4.00.04.

(3) Highlights for exceedance and the 95th UCL was computed:
- Yellow highlights are for compounds found to exceed NYSDEC Unrestricted Use Soil Cleanup Objective levels.
- Orange highlights are for compounds found to exceed EPA Regional Screening Levels for Residential (1/10th for non-carcinogenics).

Table 3-7
Summary of Final Confirmatory Soil Sample Results - Excavation Pit B
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

Compound	Units	Number of Times Detected	Number of Samples Collected	Maximum Concentration	Mean Concentration[1]	Minimum Concentration[1]	95th UCL[2] Concentration	NYSDEC Unrestricted Use SCO	NYSDEC Number of Exceedances	95th UCL > NYSDEC?	EPA RSL Residential (1/10th) Level	RSL Number of Exceedances	95th UCL > RSL?
Acetone	UG/KG	1	8	2.1	2.1	2.1		50	0		6,100,000	0	
Toluene	UG/KG	2	8	0.75	0.64	0.47		700	0		500,000	0	
Trichloroethene	UG/KG	2	8	0.84	0.55	0.54		470	0		2,800	0	
Aroclor-1254	UG/KG	1	10	49	49	49		100	0		220	0	
Aluminum	MG/KG	8	8	14,300	13,013	12,000	13,883		0		7,700	8	Yes
Arsenic	MG/KG	8	8	5.7	3.9	1.9		13	0		0	8	
Barium	MG/KG	8	8	100	81.5	63.1		350	0		1,500	0	
Beryllium	MG/KG	8	8	0.76	0.67	0.54		7.2	0		16	0	
Calcium	MG/KG	8	8	76,200	20,835	3,580			0			0	
Chromium	MG/KG	8	8	22.3	18.9	16.5		30	0		12,000	0	
Cobalt	MG/KG	8	8	14	11.1	9.6	12.1		0		2.3	8	Yes
Copper	MG/KG	8	8	28.5	20.7	14.8		50	0		310	0	
Iron	MG/KG	8	8	25,500	21,488	19,100	22,891		0		5,500	8	Yes
Lead	MG/KG	8	8	20.8	14.4	9.2		63	0	No	40	0	No
Magnesium	MG/KG	8	8	11,400	6,091	3,340			0			0	
Manganese	MG/KG	8	8	1,030	633	475	764	1,600	0	No	180	8	Yes
Mercury	MG/KG	8	8	0.047	0.036	0.018		0.18	0		2.3	0	
Nickel[3]	MG/KG	8	8	34.9	27.1	20.9	30.1	30	2	Yes	150	0	No
Potassium	MG/KG	8	8	1,910	1,478	1,070			0			0	
Selenium	MG/KG	2	8	1.9	1.5	1.8		3.9	0	No	39	0	No
Sodium	MG/KG	8	8	130	62.3	33.2			0			0	
Vanadium	MG/KG	8	8	24.8	22.4	19	23.7		0		1	8	Yes
Zinc	MG/KG	8	8	70.9	59.2	51.9		109	0		2,300	0	

Notes:

(1) Mean and minimum value calculated for compounds that do not exceed Unrestricted Use SCOs or EPA RSL Residential (1/10th non-carcinogenic) based on detected concentrations only.
If compound found at concentrations above Unrestricted Use SCO or EPA RSL Residental (1/10th NC), mean value derived from ProUCL version 4.00.04.

(2) 95th upper confidence limit of the arithmetic mean as defined by ProUCL version 4.00.04.

(3) Highlights for exceedance and the 95th UCL was computed:
- Yellow highlights are for compounds found to exceed NYSDEC Unrestricted Use Soil Cleanup Objective levels.
- Orange highlights are for compounds found to exceed EPA Regional Screening Levels for Residential (1/10th for non-carcinogenics).

Table 3-8
Summary of Final Confirmatory Soil Sample Results - Excavation Pit C1
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

Compound	Units	Maximum Concentration	95th UCL[1] Concentration	Minimum Concentration[2]	Mean Concentration[2]	NYSDEC Unrestricted Use SCO	Number of Exceedances	Number of Times Detected	Number of Samples Collected
Acetone	UG/KG	4.2		3.5	8.5	50	0	3	21
Meta/Para Xylene	UG/KG	0.86		0.78	0.9	260	0	1	21
Methyl ethyl ketone	UG/KG	0.88		0.86	0.9	120	0	2	21
Methylene chloride	UG/KG	1.6		0.42	0.6	50	0	8	21
Toluene	UG/KG	3.3		0.37	1.1	700	0	11	21
Trichloroethene	UG/KG	0.48		0.48	0.5	470	0	1	21
Benzyl alcohol	UG/KG	140		36	51.7		0	13	21
Bis(2-Ethylhexyl)phthalate	UG/KG	96		55	75.6		0	4	21
Fluoranthene	UG/KG	74		58	66.0	100000	0	2	21
Phenanthrene	UG/KG	52		44	48.0	100000	0	2	21
Pyrene	UG/KG	64		54	59.0	100000	0	2	21
4,4'-DDD[3]	UG/KG	6.9	--	6.9	6.9	3.3	1	1	21
4,4'-DDE[3]	UG/KG	5.9	5.9	5.6	5.8	3.3	2	2	21
4,4'-DDT[3]	UG/KG	9.8	9.8	3.8	6.8	3.3	2	2	21
Aluminum	MG/KG	35100		6830	12167.1		0	21	21
Arsenic	MG/KG	12.2		1.5	4.2	13	0	21	21
Barium	MG/KG	304		48.2	111.6	350	0	21	21
Beryllium	MG/KG	1.7		0.49	0.7	7.2	0	19	21
Cadmium	MG/KG	0.31		0.11	0.2	2.5	0	9	21
Calcium	MG/KG	186000		4010	79467.1		0	21	21
Chromium[3]	MG/KG	51.2	22.1	9.6	18.9	30	1	21	21
Cobalt	MG/KG	29		4.9	10.6		0	21	21
Copper[3]	MG/KG	61.4	27.8	10.7	24.0	50	1	21	21
Iron	MG/KG	56400		12100	22885.7		0	21	21
Lead	MG/KG	30		7.6	12.4	63	0	21	21
Magnesium	MG/KG	74400		4070	18274.8		0	21	21
Manganese[3]	MG/KG	1650	633.8	387	523.8	1600	1	21	21
Mercury	MG/KG	0.05		0.01	0.0	0.18	0	21	21
Nickel[3]	MG/KG	75	35.1	14.2	30.5	30	8	21	21
Potassium	MG/KG	5330		1100	1919.5		0	21	21
Selenium	MG/KG	2		0.79	1.0	3.9	0	6	21
Sodium	MG/KG	390		37.2	153.3		0	21	21
Vanadium	MG/KG	68		12.7	22.1		0	21	21
Zinc[3]	MG/KG	154	72.5	29.1	62.1	109	1	21	21

Notes:
(1) 95th upper confidence limit of the arithmetic mean as defined by ProUCL version 4.00.04.
(2) Mean and minimum value calculated for compounds that do not exceed Unrestricted Use SCOs based on detected concentrations only. If compound found at concentrations above Unrestricted Use SCO, mean value derived from ProUCL version 4.00.04.
(3) Only compounds found to exceed NYSDEC Unrestricted Use Soil Cleanup Objective levels are highlighted.and have 95th UCL computed.

Table 3-9
Summary of Final Confirmatory Soil Sample Results - Excavation Pit C2
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

Compound	Units	Number of Times Detected	Number of Samples Collected	Maximum Concentration	Mean Concentration[1]	Minimum Concentration[1]	95th UCL[2] Concentration	NYSDEC Unrestricted Use SCO	NYSDEC Number of Exceedances	95th UCL > NYSDEC?	EPA RSL Residential (1/10th) Level	RSL Number of Exceedances	95th UCL > RSL?
Acetone	UG/KG	8	43	9.6	3.8	2.2		50	0		6,100,000	0	
Carbon disulfide	UG/KG	1	43	0.85	0.85	0.85			0		82,000	0	
Cis-1,2-Dichloroethene	UG/KG	1	43	0.45	0.45	0.45		250	0		78,000	0	
Meta/Para Xylene	UG/KG	1	43	0.75	0.75	0.75		260	0			0	
Methyl ethyl ketone	UG/KG	1	43	1.6	1.6	1.6		120	0		2,800,000	0	
Methylene chloride	UG/KG	12	43	2.8	0.88	0.47		50	0		11,000	0	
Styrene	UG/KG	1	43	0.61	0.61	0.61			0		630,000	0	
Toluene	UG/KG	20	43	1.6	0.81	0.81		700	0		500,000	0	
Trichloroethene	UG/KG	4	43	1	0.75	0.58		470	0		2,800	0	
Benzyl alcohol	UG/KG	19	43	140	69.4	38.0			0		610,000	0	
Bis(2-Ethylhexyl)phthalate	UG/KG	4	43	85	69.5	42			0		35,000	0	
Dimethylphthalate	UG/KG	6	43	86.0	62.2	44.0			0			0	
Aroclor-1254	UG/KG	2	43	78	65.5	53		100	0		220	0	
4,4'-DDE	UG/KG	1	43	0.9	0.9	0.9		3.3	0		1,400	0	
4,4'-DDT	UG/KG	1	43	1.7	1.7	1.7		3.3	0		1,700	0	
Alpha-BHC[3, 4]	UG/KG	4	43	210	89.2	2.6	134	20	2	Yes	77	2	Yes
Beta-BHC[3, 5]	UG/KG	1	43	63	63	63	63	36	1	Yes	270	0	No
Delta-BHC[3, 4]	UG/KG	3	43	61	34	3.3	61	40	1	Yes		0	
Aluminum[3]	MG/KG	43	43	16,700	10,731	5,300	11,404		0		7,700	40	Yes
Arsenic[3]	MG/KG	43	43	8	4.4	2.5	4.7	13	0	No	0.39	43	Yes
Barium	MG/KG	43	43	134	85.2	49.0		350	0		1,500	0	
Beryllium	MG/KG	42	43	0.96	0.60	0.25		7.2	0		16	0	
Cadmium	MG/KG	14	43	1.25	0.34	0.12		2.5	0		7	0	
Calcium	MG/KG	43	43	151,000	74,262	3,320			0			0	
Chromium	MG/KG	43	43	25.9	17.2	8.10		30	0		12,000	0	
Cobalt[3]	MG/KG	43	43	16.2	9.5	4.30	10.1		0		2.3	43	Yes
Copper	MG/KG	43	43	42	24.7	17.3		50	0		310	0	
Iron[3]	MG/KG	43	43	33,200	20,956	12,000	21,991		0		5,500	43	Yes
Lead	MG/KG	43	43	18.1	10.5	5.4		63	0		40	0	
Magnesium	MG/KG	43	43	41,000	14,258	5,260			0			0	
Manganese[3]	MG/KG	43	43	1,630	500	337	557	1,600	1	No	180	43	Yes
Mercury	MG/KG	39	43	0.042	0.023	0.010		0.18	0		2.3	0	
Nickel[3]	MG/KG	43	43	48	29.16	11	30.79	30	15	Yes	150	0	No
Potassium	MG/KG	43	43	2,400	1,593	1,100			0			0	
Selenium	MG/KG	7	43	1.3	0.60	0.25		3.9	0		39	0	
Sodium	MG/KG	43	43	163	121	39.6			0			0	
Vanadium[3]	MG/KG	43	43	28.4	19.5	12	20.5		0		0.55	43	Yes
Zinc[3]	MG/KG	43	43	118	56.2	35	60.2	109	1	No	2,300	0	No

Notes:

(1) Mean and minimum value calculated for compounds that do not exceed Unrestricted Use SCOs or EPA RSL Residential (1/10th non-carcinogenic) based on detected concentrations only.
If compound found at concentrations above Unrestricted Use SCO or EPA RSL Residental (1/10th NC), mean value derived from ProUCL version 4.00.04.

(2) 95th upper confidence limit of the arithmetic mean as defined by ProUCL version 4.00.04.

(3) Highlights for exceedance and the 95th UCL was computed:
- Yellow highlights are for compounds found to exceed NYSDEC Unrestricted Use Soil Cleanup Objective levels.
- Orange highlights are for compounds found to exceed EPA Regional Screening Levels for Residential (1/10th for non-carcinogenics).
- Grey highlights are for compounds found to exceed both NYSDEC Unrestricted Use SCO levels and EPA Regional Screening Levels for Residential (1/10th for non-carcinogenics).

(4) Limited number of detects (less than 4 data points, 10-15 is recommended) used for 95th UCL calculation; most conservative recommended ProUCL value was used.

(5) Single detection used as 95th UCL value

Table 3-10
Summary of Final Confirmatory Soil Sample Results - Overburden/C1 Stockpile
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

Compound	Units	Maximum Concentration	95th UCL[(1)] Concentration	Minimum Concentration[(2)]	Mean Concentration[(2)]	NYSDEC Unrestricted Use SCO	NYSDEC Number of Exceedances	95th UCL > NYSDEC?	EPA RSL Residential (1/10th) Level	RSL Number of Exceedances	95th UCL > RSL?	Number of Times Detected	Number of Samples Collected
Acetone	UG/KG	3.4		3.4	3.4	50	0		6,100,000	0		1	12
Methylene chloride	UG/KG	0.5		0.48	0.49	50	0		11,000	0		2	12
Toluene	UG/KG	0.83		0.43	0.68	700	0		500,000	0		4	12
Trichloroethene	UG/KG	0.53		0.53	0.53	470	0		2,800	0		1	12
Anthracene	UG/KG	58.0		48.0	52.6	100,000	0		1,700,000	0		5	12
Benzo(a)anthracene	UG/KG	190	135	52.0	114	1,000	0	No	150	3	No	11	12
Benzo(a)pyrene	UG/KG	140	106	47.0	91.6	1,000	0	No	15	11	Yes	11	12
Benzo(b)fluoranthene	UG/KG	170	125	63	109	1,000	0	No	150	2	No	10	12
Benzo(k)fluoranthene	UG/KG	150		62.0	97.1	800	0		1,500	0		9	12
Bis(2-Ethylhexyl)phthalate	UG/KG	130		70.0	90.4		0		35,000	0		7	12
Chrysene	UG/KG	250		57.0	139	1,000	0		15,000	0		11	12
Fluoranthene	UG/KG	320		91	218	100,000	0		230,000	0		11	12
Indeno(1,2,3-cd)pyrene	UG/KG	93		45	64	500	0		150	0		9	12
Phenanthrene	UG/KG	240		52.0	92.5	100,000	0			0		10	12
Pyrene	UG/KG	290		76.0	186	100,000	0		170,000	0		11	12
Aroclor-1254	UG/KG	54		54	54	100	0		220	0		1	12
Aluminum	MG/KG	14,900	14,188	12,800	13,850		0		7,700	12	Yes	12	12
Arsenic	MG/KG	5.1	4.458	3.40	4.217	13	0	No	0.39	12	Yes	12	12
Barium	MG/KG	105		88.8	97.0	350	0		1,500	0		12	12
Beryllium	MG/KG	0.742		0.65	0.70	7.2	0		16	0		12	12
Cadmium	MG/KG	0.371		0.29	0.34	2.5	0		7	0		11	12
Calcium	MG/KG	66,700		28,300	40,617		0			0		12	12
Chromium	MG/KG	22.4		19.3	20.7	30	0		12,000	0		12	12
Cobalt	MG/KG	12.5	10.9	8.90	10.4		0		2.3	12	Yes	12	12
Copper	MG/KG	24.4		21.3	22.6	50	0		310	0		12	12
Iron	MG/KG	26,300	24,128	20,200	23,308		0		5,500	12	Yes	12	12
Lead	MG/KG	33.2		16.6	20.5	63	0		40	0		12	12
Magnesium	MG/KG	10,700		7,550	9,215		0			0		12	12
Manganese	MG/KG	651	585	491	559	1,600	0	No	180	12	Yes	12	12
Mercury	MG/KG	0.05		0.037	0.044	0.18	0		2.3	0		11	12
Nickel[(3)]	MG/KG	32.3	30.5	26.3	29.4	30	5	Yes	150	0	No	12	12
Potassium	MG/KG	2,110		1,670	1,886		0			0		12	12
Selenium	MG/KG	1.1		1.1	1.1	39	0		39	0		1	2
Sodium	MG/KG	105		75.9	89.7		0			0		12	12
Vanadium	MG/KG	27.3	25.15	22.8	24.5		0		0.55	12	Yes	12	12
Zinc	MG/KG	109		76.7	94.5	109	0		2,300	0		12	12

Notes:

(1) 95th upper confidence limit of the arithmetic mean as defined by ProUCL version 4.00.04.

(2) Mean and minimum value calculated for compounds that do not exceed Unrestricted Use SCOs or EPA RSL Residential (1/10th non-carcinogenic) based on detected concentrations only.
If compound found at concentrations above Unrestricted Use SCO or EPA RSL Residental (1/10th NC), mean value derived from ProUCL version 4.00.04.

(3) Highlights for exceedance and the 95th UCL was computed:
- Yellow highlights are for compounds found to exceed NYSDEC Unrestricted Use Soil Cleanup Objective levels.
- Orange highlights are for compounds found to exceed EPA Regional Screening Levels for Residential (1/10th for non-carcinogenics).

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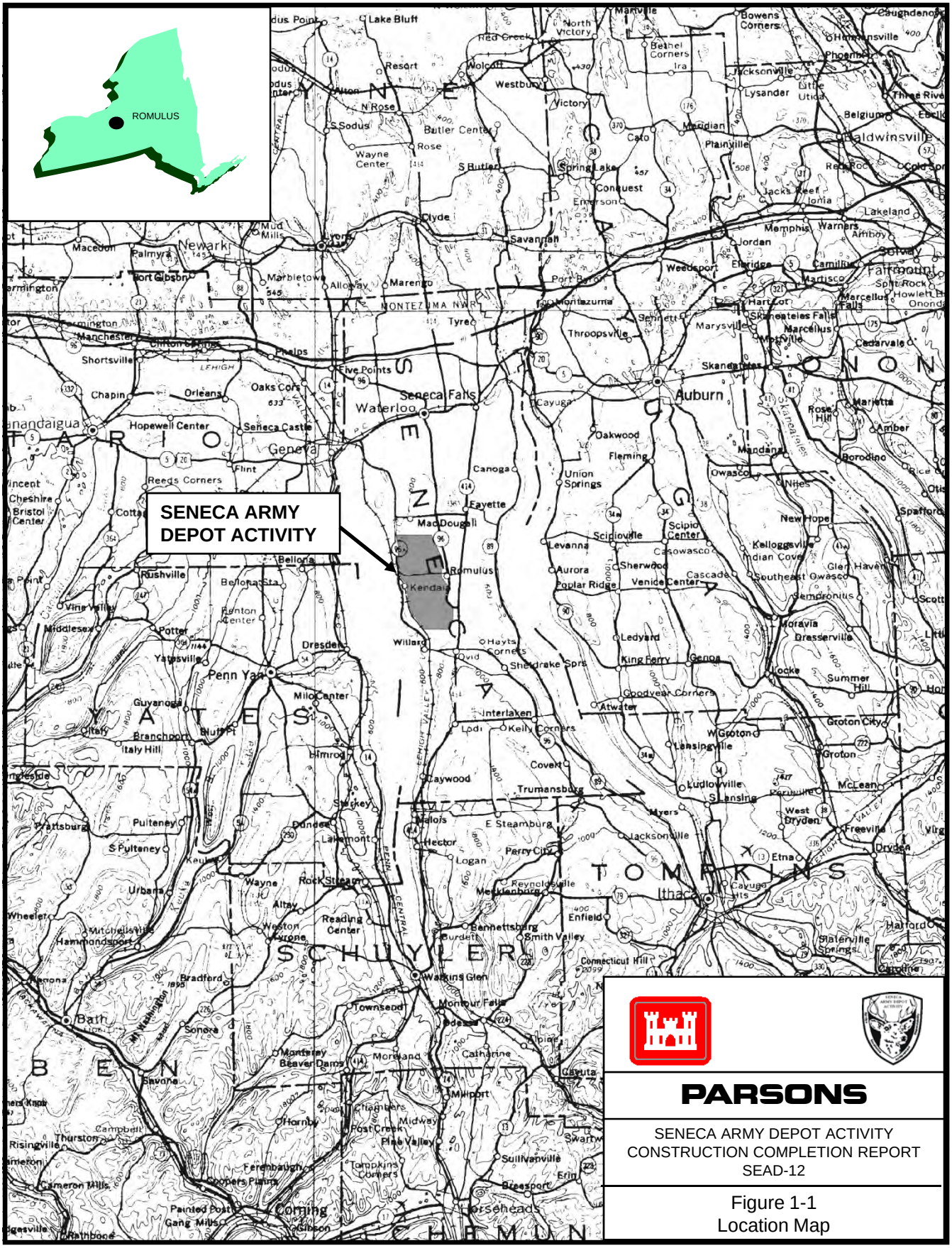

PARSONS

SENECA ARMY DEPOT ACTIVITY
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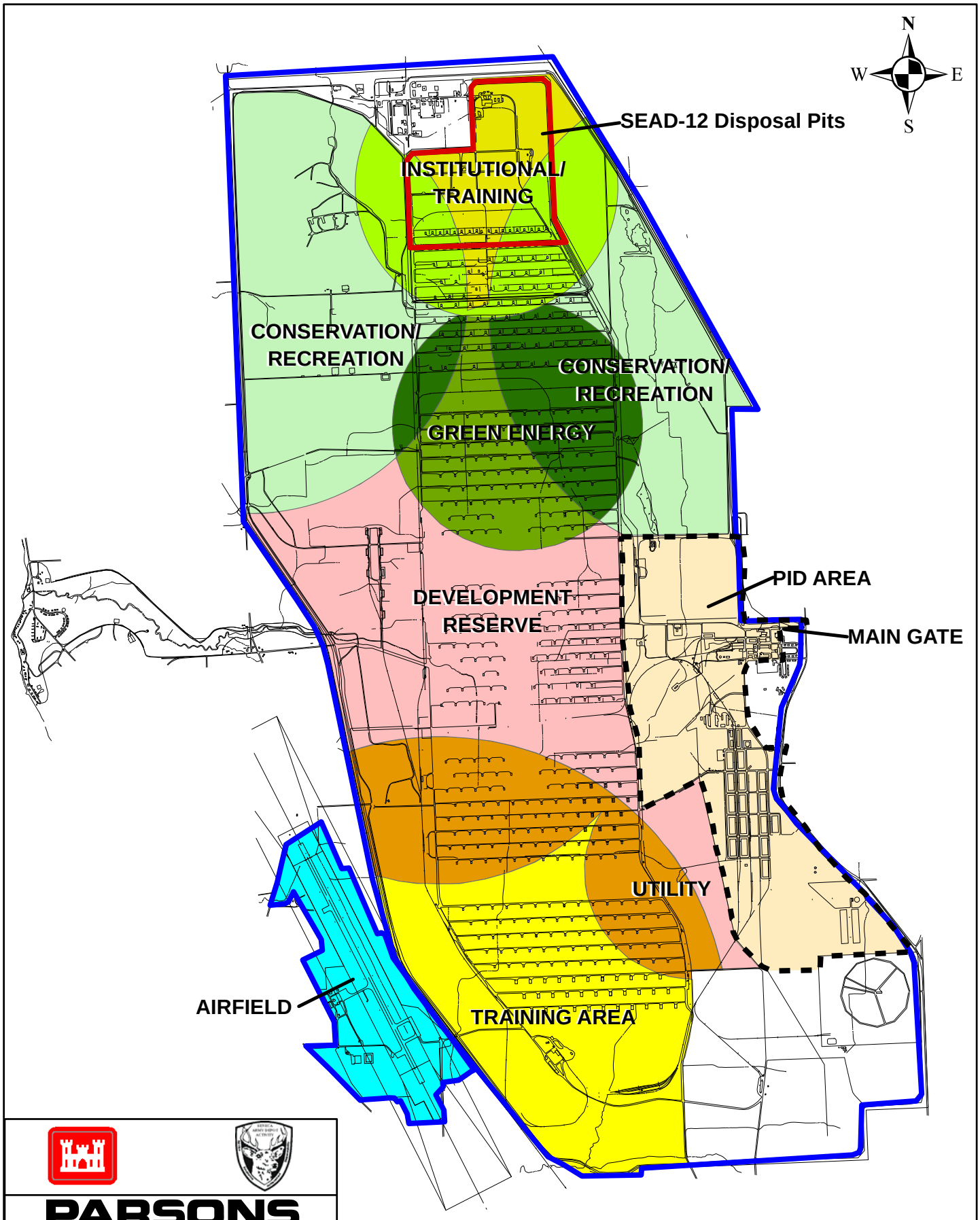
Figure 1-1
Location Map



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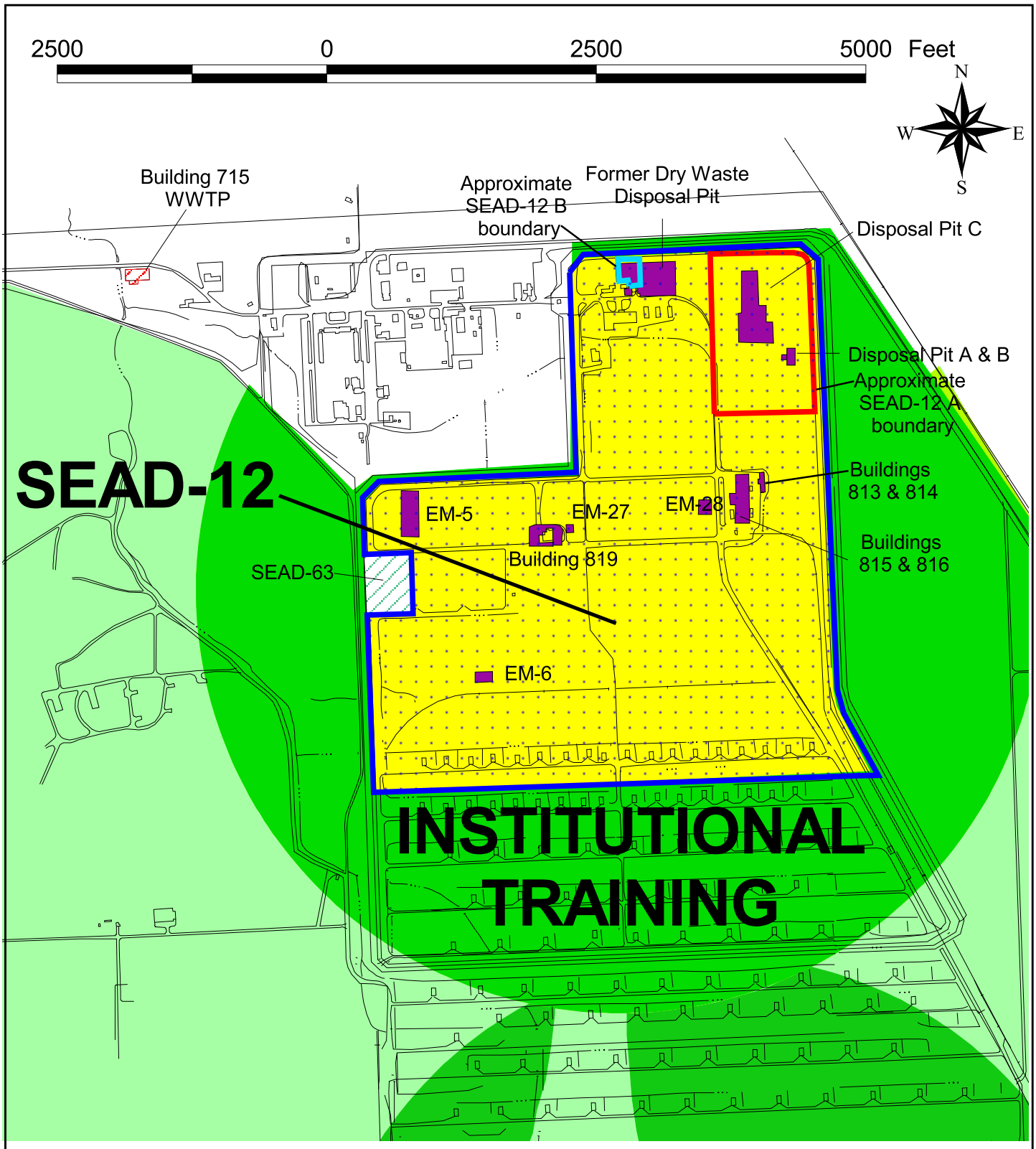
SENECA ARMY DEPOT ACTIVITY
Construction Completion Report
for SEAD-12
Figure 1-2
Land Use and Site Locations
December 2011

Seneca Army Depot Boundary

SEAD-12

Planned Industrial /Office Development
(PID) Area Boundary

Path: O:\Seneca\Depot Survey\LUC_Map_SEAD-12.mxd



Extent of SEAD-12

Extent of SEAD-63

SEAD-12A Boundary

SEAD-12B Boundary

Buildings/Areas of
SEAD-12 Investigation

PARSONS

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CONSTRUCTION COMPLETION REPORT
FOR SEAD-12

Figure 1-3
SEAD-12 Historical Areas of Investigation

March 2010

O:\Seneca\SEAD-12\RA Oct 2009\SEAD-12 CCR.apr\Fig 3 SEAD-12 Area

N

DISPOSAL PIT C1

DISPOSAL PIT C2

DISPOSAL PIT A/B

SEAD 12A 1994

SECURITY POST

DRAINAGE CULVERT

SERVICE ROAD NO. 1

PATROL ROAD

650 652 654 656 658 660 662 664

LEGEND

- 660 — MAJOR 2 FOOT ELEVATION CONTOUR
- 654 — MINOR 2 FOOT ELEVATION CONTOUR
- FENCE LINE
- WATERWAY
- GUARDRAIL
- TREELINE
- RAILROAD TRACKS
- UNPAVED ROAD
- PAVED ROAD
- SURVEY MONUMENT
- CULVERT
- CATCH BASIN
- TREE
- TELEPHONE POLE
- LIGHT POLE
- DOUBLE POLE
- HYDRANT
- SIGN
- COORDINATE CROSSHAIR
- APPROXIMATE DISPOSAL PIT LIMITS

1996 IN-PHASE GEOPHYSICAL LEGEND

4.8 4.6 4.5 4.3 4.1 3.9 3.7 3.6 3.4 3.2 3.0 2.8 2.7 2.5 2.3 2.1 1.9 1.8 1.6 1.4 1.2 1.1 0.9 0.7 0.5 0.3 0.2 -0.0 -0.2 -0.4 -0.6 -0.7 -0.9 -1.1 -1.3 -1.5 -1.6 -1.8

40 20 0 40 80

SCALE (FT)

PARSONS

100 HIGH STREET, 4TH FLOOR - BOSTON, MA 02110-1713

CLIENT/PROJECT TITLE:

SENECA ARMY DEPOT ACTIVITY
CONSTRUCTION COMPLETION REPORT
SEAD-12

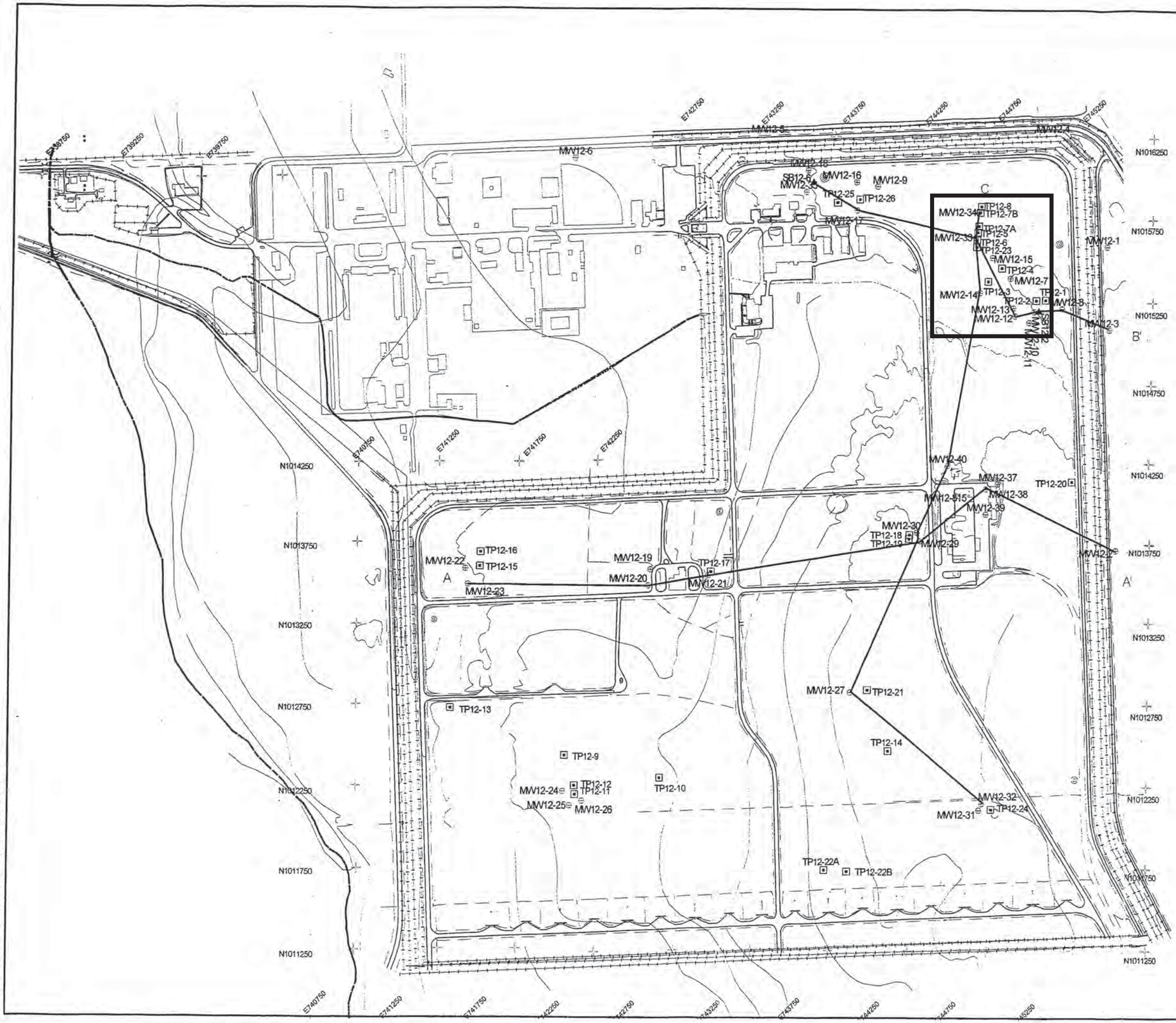
DEPT:	JOB NO:
ENVIRONMENTAL ENGINEERING	746762-02000

FIGURE TITLE:

FIGURE 1-4
RADIOLOGICAL WASTE BURIED PIT LOCATIONS
(1996 IN-PHASE EM DATA)

SCALE:	DRWN:	CHKD:	APPD:	DATE:	REV:
1" = 40'	RR	JA	TH	01/07/10	A

FILE: P:\PIT\PROJECTS\HUNTSVILLE CONT W912DY-08-D-0003\TO#03 - SEAD-12 RA\CCR\DRAFT\FIGURES\FIGURE 1-4.DWG, DATE: 03/11/2010 08:26:43AM, p0018397



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N

LEGEND

⊕ MW 12-15
MONITORING WELL
LOCATION

GEOLOGIC
CROSS-SECTION
TRANSECT

TP 12-11
TEST PIT LOCATION

SB 12-27
SOIL BORING LOCATION

APPROXIMATE AREA OF
THE DISPOSAL PITS

600 0 600
(feet)

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Construction Completion Report for SEAD-12

FIGURE 1-5

GEOLOGIC CROSS SECTION LOCATIONS

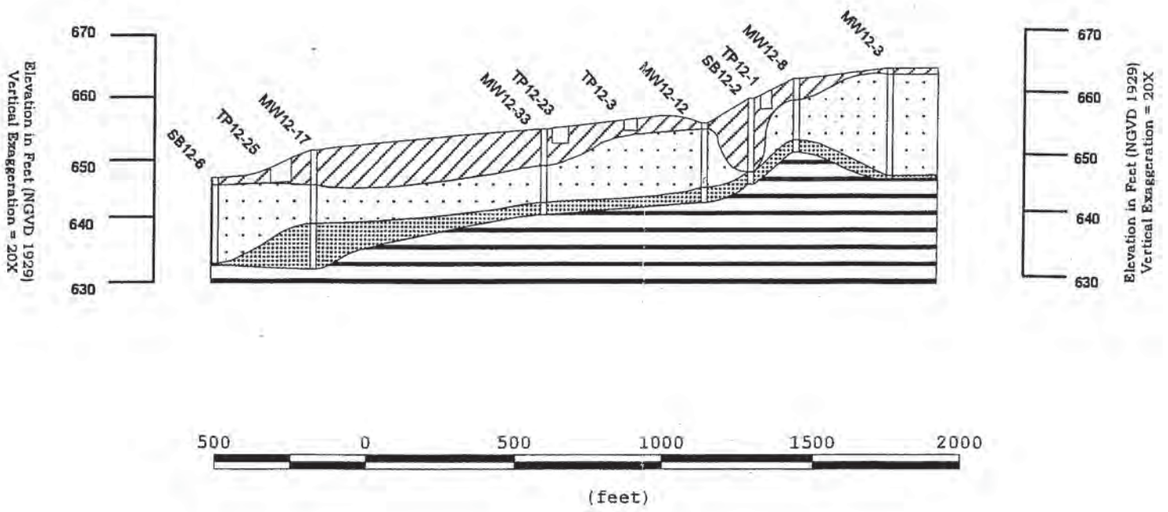
SCALE	DATE	REV	
1:600	MAY 2000		Sheet 1 of 1

West

B

East

B'



GEOLOGIC LEGEND

FILL

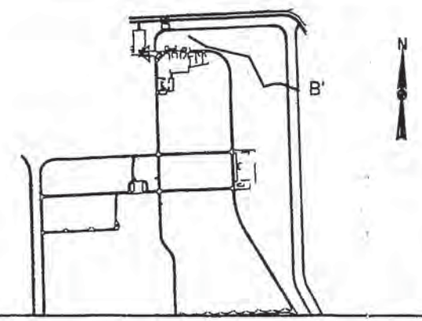
WEATHERED SHALE

TILL

COMPETENT SHALE

TP12-17 Test Pit Locations

MW12-23 Monitoring Well Locations



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SENECA ARMY DEPOT ACTIVITY

Construction Completion Report for SEAD-12

FIGURE 1-6

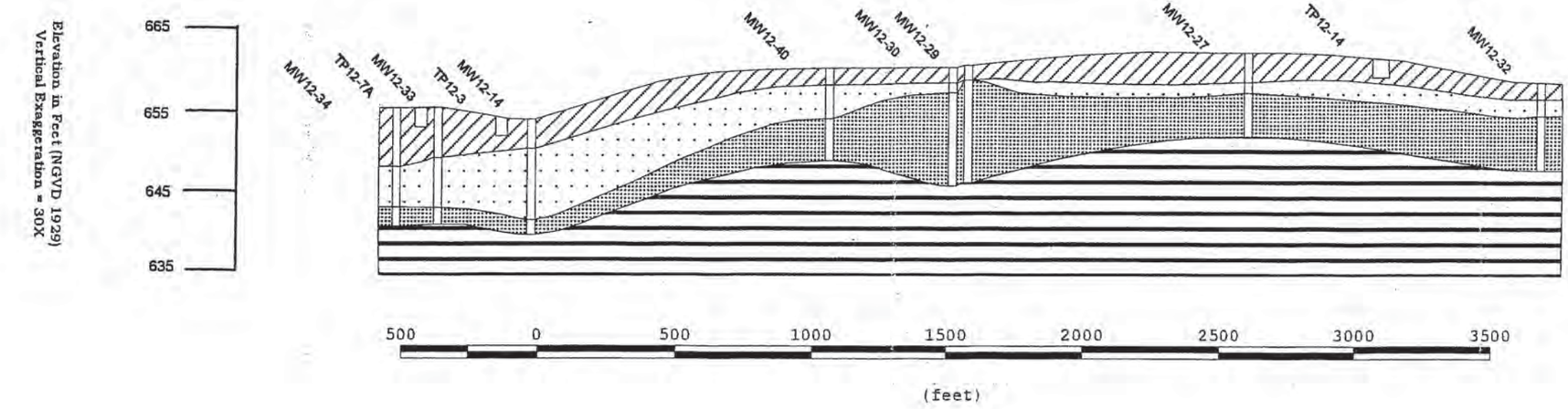
GEOLOGIC CROSS-SECTION
B-B'

SCALE 1:500 | DATE MAY 2000 | REV | Sheet 1 of 1

O:\AV_GIS30\SENECA\SEAD12\SECTIONS

North

C



South

C'

GEOLOGIC LEGEND

FILL

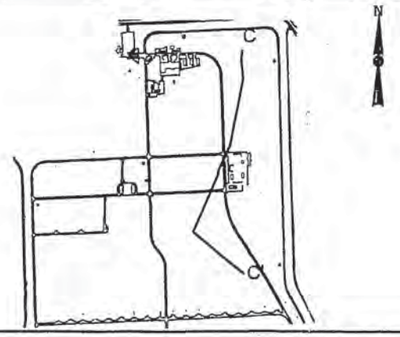
TILL

WEATHERED SHALE

COMPETENT SHALE

TP12-17 Test Pit Locations

MW12-23 Monitoring Well Locations



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SENECA ARMY DEPOT ACTIVITY

Construction Completion Report for SEAD-12

FIGURE 1-7

GEOLOGIC CROSS-SECTION C-C'

SCALE 1:500 | DATE MAY 2000 | REV | Sheet 1 of 1

O:\AV_GIS30\SENECA\SEAD12\SECTIONS

N

SOIL LAYDOWN AREA
MATERIALS FROM INDIVIDUAL EXCAVATION SITES
(A, B, C1 & C2) SEGREGATED FROM EACH OTHER

SCREENING PLANT

PLANT WAS MOVED AS NECESSARY TO PROCESS LAID OUT MATERIAL

DISPOSAL PIT C1

DISPOSAL PIT C2

HISTORIC DISPOSAL AREA

SEAD 12A 1994

SECURITY POST

OVERBURDEN\C1 MATERIAL STOCKPILE

DISPOSAL PIT A

DISPOSAL PIT B

SERVICE ROAD NO. 1

APPROXIMATE LIMIT OF WORK SUPPORT ZONE

APPROXIMATE LIMIT OF WORK SUPPORT ZONE

CONSTRUCTION ENTRANCE AND JUG HANDLE LOAD OUT

WASTE 6 INCH MINUS SOIL/DEBRIS FROM PITS A, B, & C2

DITCH CHECK

DITCH CHECK

LOCATION WHERE NON-MILITARY DEBRIS AND METAL STAGED IN DUMPSTERS PENDING DISPOSAL

LEGEND

- 660 — MAJOR 2 FOOT ELEVATION CONTOUR
- 654 — MINOR 2 FOOT ELEVATION CONTOUR
- FENCE LINE
- WATERWAY
- GUARDRAIL
- TREELINE
- RAILROAD TRACKS
- UNPAVED ROAD
- PAVED ROAD
- SURVEY MONUMENT
- CULVERT
- CATCH BASIN
- TREE
- TELEPHONE POLE
- LIGHT POLE
- DOUBLE POLE
- HYDRANT
- SIGN
- COORDINATE CROSSHAIR
- STOCKPILE LIMITS
- APPROXIMATE LOCATION OF HISTORICAL BURIAL PIT
- SF — APPROXIMATE LOCATION OF SILT FENCE

40 20 0 40 80
SCALE (FT)

PARSONS
100 HIGH STREET, 4TH FLOOR - BOSTON, MA 02110-1713

CLIENT/PROJECT TITLE:
SENECA ARMY DEPOT ACTIVITY
CONSTRUCTION COMPLETION REPORT
SEAD-12

DEPT:	JOB NO:
ENVIRONMENTAL ENGINEERING	746762-02000

FIGURE TITLE:
FIGURE 2-1
SEAD-12
LOCATION OF STAGING PILES

SCALE:	DRWN:	CHKD:	APPD:	DATE:	REV:
1" = 40'	RR	JA	TH	01/07/10	A

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LEGEND

- 660 — MAJOR 2 FOOT ELEVATION CONTOUR
- 654 — MINOR 2 FOOT ELEVATION CONTOUR
- FENCE LINE
- WATERWAY
- GUARDRAIL
- TREELINE
- RAILROAD TRACKS
- UNPAVED ROAD
- PAVED ROAD
- SURVEY MONUMENT
- CULVERT
- CATCH BASIN
- TREE
- TELEPHONE POLE
- LIGHT POLE
- DOUBLE POLE
- HYDRANT
- SIGN
- COORDINATE CROSSHAIR
- LIMITS OF EXCAVATION
- EXCAVATION FROM 10 TO 11+ FT
- EXCAVATION FROM 9 FT TO 10 FT
- EXCAVATION FROM 7 FT TO 9 FT
- EXCAVATION FROM 6 FT TO 7 FT
- EXCAVATION FROM 4 FT TO 6 FT
- EXCAVATION FROM 3 FT TO 4 FT
- EXCAVATION FROM 1 FT TO 3 FT
- EXCAVATION FROM 0 FT TO 1 FT

INITIAL EXCAVATION VOLUMES (AS OF 7/22/09)

AREA	VOLUME (C.Y.)
PIT A	1036.64
PIT B	286.18
PIT C1	1638.77
PIT C2	1436.42

40 20 0 40 80

SCALE (FT)

PARSONS
100 HIGH STREET, 4TH FLOOR - BOSTON, MA 02110-1713

CLIENT/PROJECT TITLE:

SENECA ARMY DEPOT ACTIVITY
CONSTRUCTION COMPLETION REPORT
SEAD-12

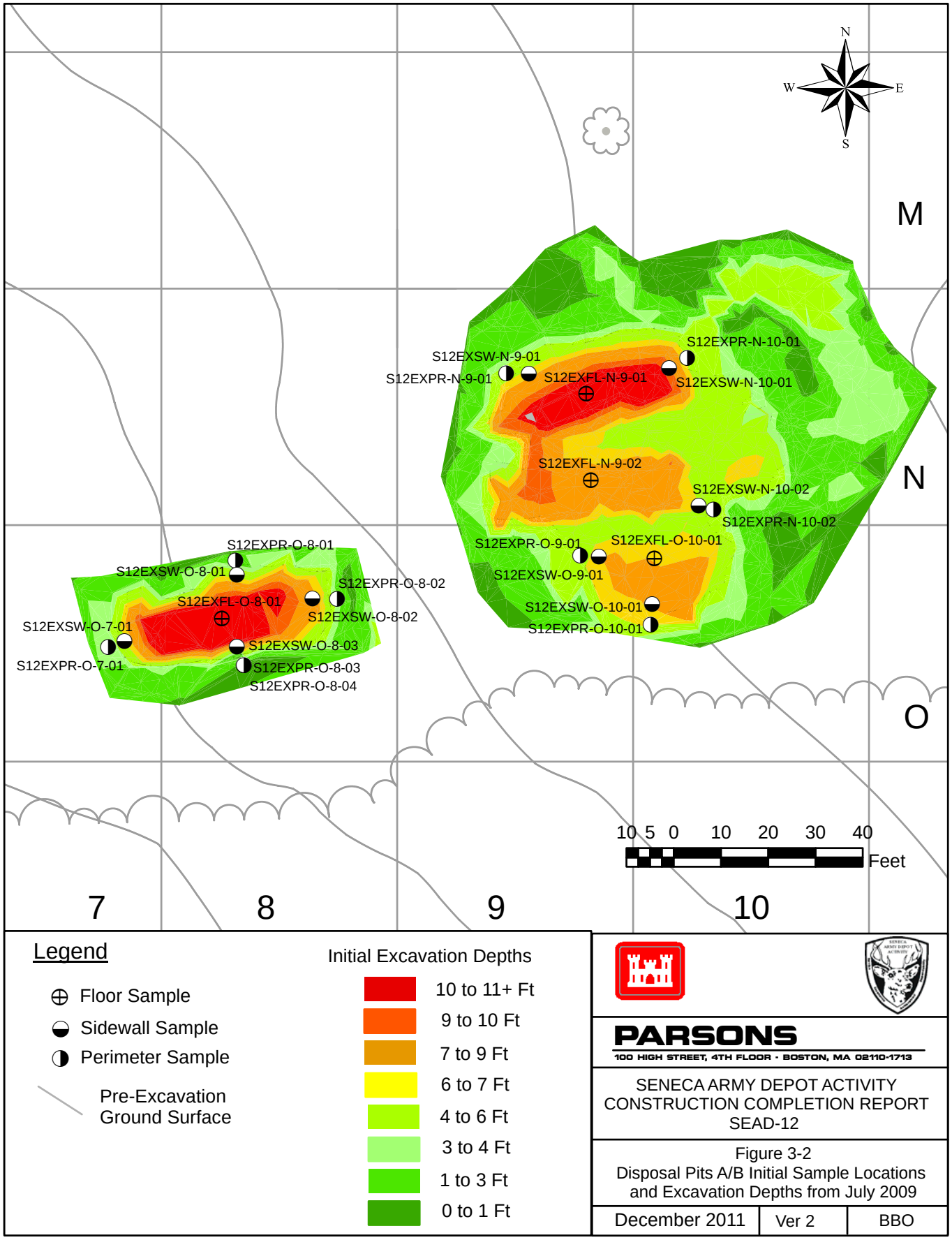
DEPT:	JOB NO:
ENVIRONMENTAL ENGINEERING	746762-02000

FIGURE TITLE:

FIGURE 3-1
LIMITS OF INITIAL EXCAVATION
(JULY 22, 2009)

SCALE:	DRWN:	CHKD:	APPD:	DATE:	REV:
1" = 40'	RR	JA	TH	01/07/10	A

FILE: P:\PIT\PROJECTS\HUNTSVILLE CONT W912DY-08-D-0003\TO#03 - SEAD-12 RA\CCR\DRAFT\FIGURES\FIGURE 3-1.DWG, DATE: 03/11/2010 09:33:35AM, p0018397



Legend

- ⊕ Floor Sample
- ◒ Sidewall Sample
- ◑ Perimeter Sample
- Pre-Excavation Ground Surface

Initial Excavation Depths

- 10 to 11+ Ft
- 9 to 10 Ft
- 7 to 9 Ft
- 6 to 7 Ft
- 4 to 6 Ft
- 3 to 4 Ft
- 1 to 3 Ft
- 0 to 1 Ft

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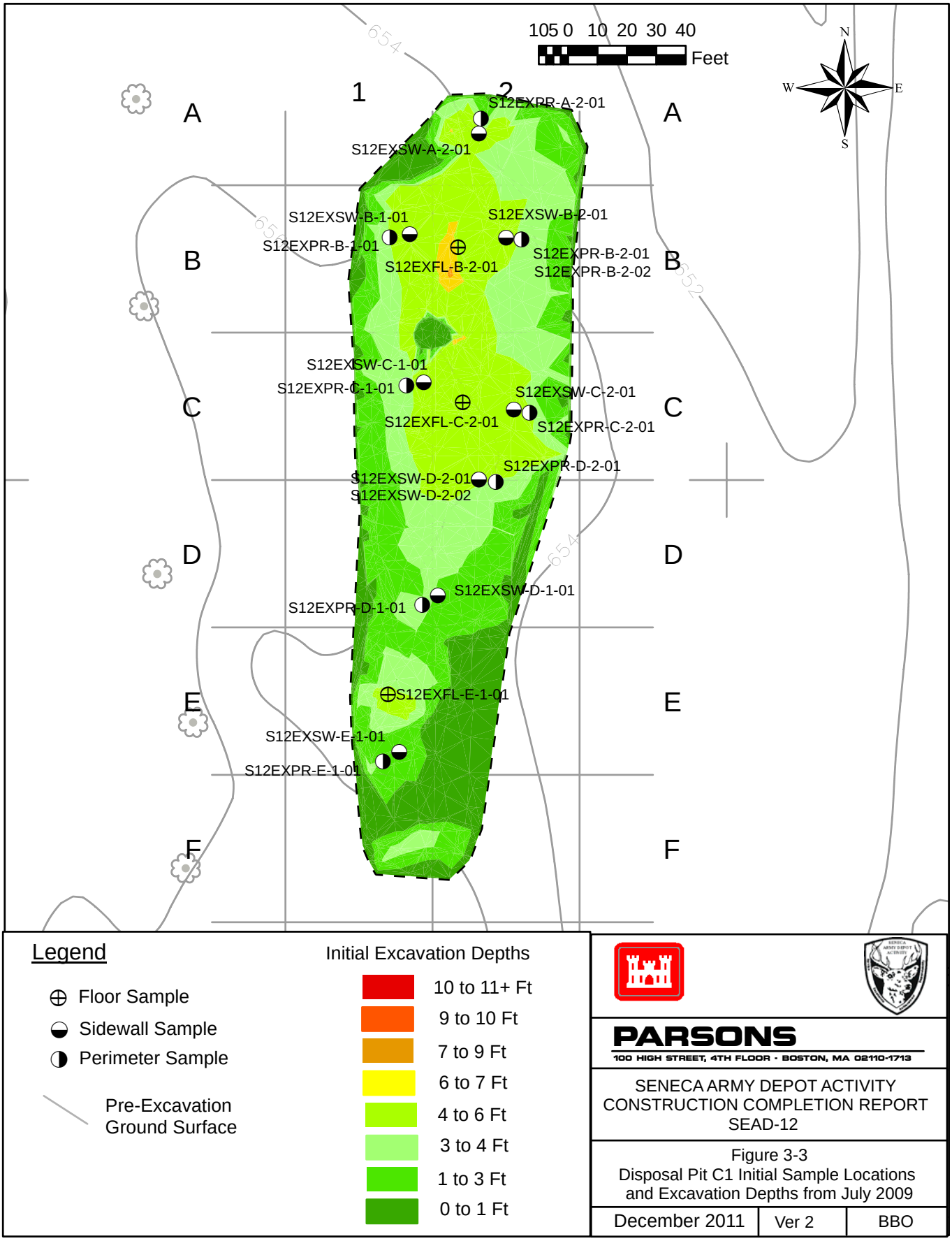
SENECA ARMY DEPOT ACTIVITY
CONSTRUCTION COMPLETION REPORT
SEAD-12

Figure 3-2
Disposal Pits A/B Initial Sample Locations and Excavation Depths from July 2009

December 2011	Ver 2	BBO

P:\PITProjects\Huntsville Cont W912DY-08-D-0003\TO#03 - SEAD-12 RAICCR\Draft\Figures\ArcMap\S-12_Pit_AB_Chem_Sample_Interm_Depths.mxd



Legend

- ⊕ Floor Sample
- ◒ Sidewall Sample
- ◑ Perimeter Sample
- Pre-Excavation Ground Surface

Initial Excavation Depths

- 10 to 11+ Ft
- 9 to 10 Ft
- 7 to 9 Ft
- 6 to 7 Ft
- 4 to 6 Ft
- 3 to 4 Ft
- 1 to 3 Ft
- 0 to 1 Ft

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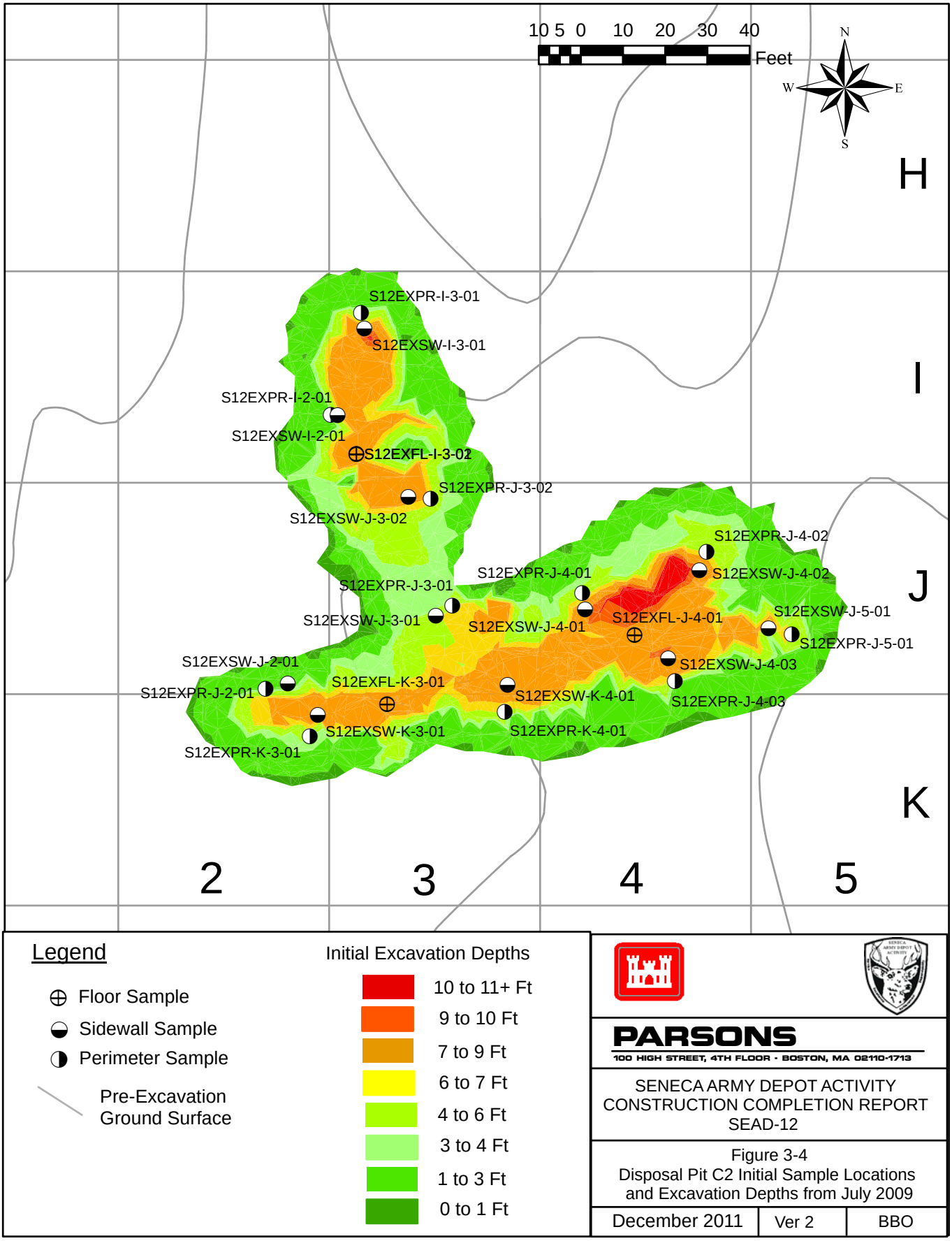
SENECA ARMY DEPOT ACTIVITY
CONSTRUCTION COMPLETION REPORT
SEAD-12

Figure 3-3
Disposal Pit C1 Initial Sample Locations and Excavation Depths from July 2009

December 2011	Ver 2	BBO

P:\P\T\Projects\Huntsville Cont W912DY-08-D-0003\TO#03 - SEAD-12 RAICCR\Draft\Figures\ArcMap\S-12_Pit_C1_Chem_Sample_Interm_Depths.mxd



Legend

- ⊕ Floor Sample
- ◒ Sidewall Sample
- ◑ Perimeter Sample
- Pre-Excavation Ground Surface

Initial Excavation Depths

- 10 to 11+ Ft
- 9 to 10 Ft
- 7 to 9 Ft
- 6 to 7 Ft
- 4 to 6 Ft
- 3 to 4 Ft
- 1 to 3 Ft
- 0 to 1 Ft

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SENECA ARMY DEPOT ACTIVITY
CONSTRUCTION COMPLETION REPORT
SEAD-12

Figure 3-4
Disposal Pit C2 Initial Sample Locations and Excavation Depths from July 2009

December 2011	Ver 2	BBO

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N

SEAD 12A 1994

DISPOSAL PIT C1

DISPOSAL PIT C2

DISPOSAL PIT A

DISPOSAL PIT B

SECURITY POST

SERVICE ROAD NO. 1

PATROL ROAD

LEGEND

- MAJOR 2 FOOT ELEVATION CONTOUR
- MINOR 2 FOOT ELEVATION CONTOUR
- FENCE LINE
- WATERWAY
- GUARDRAIL
- TREELINE
- RAILROAD TRACKS
- UNPAVED ROAD
- PAVED ROAD
- SURVEY MONUMENT
- CULVERT
- CATCH BASIN
- TREE
- TELEPHONE POLE
- LIGHT POLE
- DOUBLE POLE
- HYDRANT
- SIGN
- COORDINATE CROSSHAIR
- LIMITS OF EXCAVATION INCLUDING SLOPE STABILIZATION BENCH

2009 IN-PHASE GEOPHYSICAL LEGEND

4.8 4.6 4.5 4.3 4.1 3.9 3.7 3.6 3.4 3.2 3.0 2.8 2.7 2.5 2.3 2.1 1.9 1.8 1.6 1.4 1.2 1.1 0.9 0.7 0.5 0.3 0.2 -0.0 -0.2 -0.4 -0.6 -0.7 -0.9 -1.1 -1.3 -1.5 -1.6 -1.8

40 20 0 40 80

SCALE (FT)

PARSONS

100 HIGH STREET, 4TH FLOOR - BOSTON, MA 02110-1713

CLIENT/PROJECT TITLE:

SENECA ARMY DEPOT ACTIVITY
CONSTRUCTION COMPLETION REPORT
SEAD-12

DEPT:	JOB NO:
ENVIRONMENTAL ENGINEERING	746762-02000

FIGURE TITLE:

FIGURE 3-5
LIMITS OF INITIAL EXCAVATION
(2009 IN-PHASE EM DATA)

SCALE:	DRWN:	CHKD:	APPD:	DATE:	REV:
1" = 40'	RR	JA	TH	7/7/2010	B

FILE: P:\PIT\PROJECTS\HUNTSVILLE CONT W912DY-08-D-0003\TO#03 - SEAD-12 RA\CCR\DRAFT\FIGURES\FIGURE 3-3.DWG, DATE: 07/12/2010 03:06:23PM, P0066561

N

SEAD 12A 1994

DISPOSAL PIT C1

DISPOSAL PIT C2

DISPOSAL PIT A

DISPOSAL PIT B

SECURITY POST

SERVICE ROAD NO. 1

PATROL ROAD

LEGEND

- MAJOR 2 FOOT ELEVATION CONTOUR
- MINOR 2 FOOT ELEVATION CONTOUR
- FENCE LINE
- WATERWAY
- GUARDRAIL
- TREELINE
- RAILROAD TRACKS
- UNPAVED ROAD
- PAVED ROAD
- SURVEY MONUMENT
- CULVERT
- CATCH BASIN
- TREE
- TELEPHONE POLE
- LIGHT POLE
- DOUBLE POLE
- HYDRANT
- SIGN
- COORDINATE CROSSHAIR
- LIMITS OF EXCAVATION INCLUDING SLOPE STABILIZATION BENCH

2009 IN-PHASE GEOPHYSICAL LEGEND

4.8 4.6 4.5 4.3 4.1 3.9 3.7 3.6 3.4 3.2 3.0 2.8 2.7 2.5 2.3 2.1 1.9 1.8 1.6 1.4 1.2 1.1 0.9 0.7 0.5 0.3 0.2 -0.0 -0.2 -0.4 -0.6 -0.7 -0.9 -1.1 -1.3 -1.5 -1.6 -1.8

40 20 0 40 80

SCALE (FT)

PARSONS

100 HIGH STREET, 4TH FLOOR - BOSTON, MA 02110-1713

CLIENT/PROJECT TITLE:

SENECA ARMY DEPOT ACTIVITY
CONSTRUCTION COMPLETION REPORT
SEAD-12

DEPT:	JOB NO:
ENVIRONMENTAL ENGINEERING	746762-02000

FIGURE TITLE:

FIGURE 3-6
LIMITS OF FINAL EXCAVATION
(OCT. 30 2009 IN-PHASE EM DATA)

SCALE:	DRWN:	CHKD:	APPD:	DATE:	REV:
1" = 40'	RR	JA	TH	7/7/2010	B

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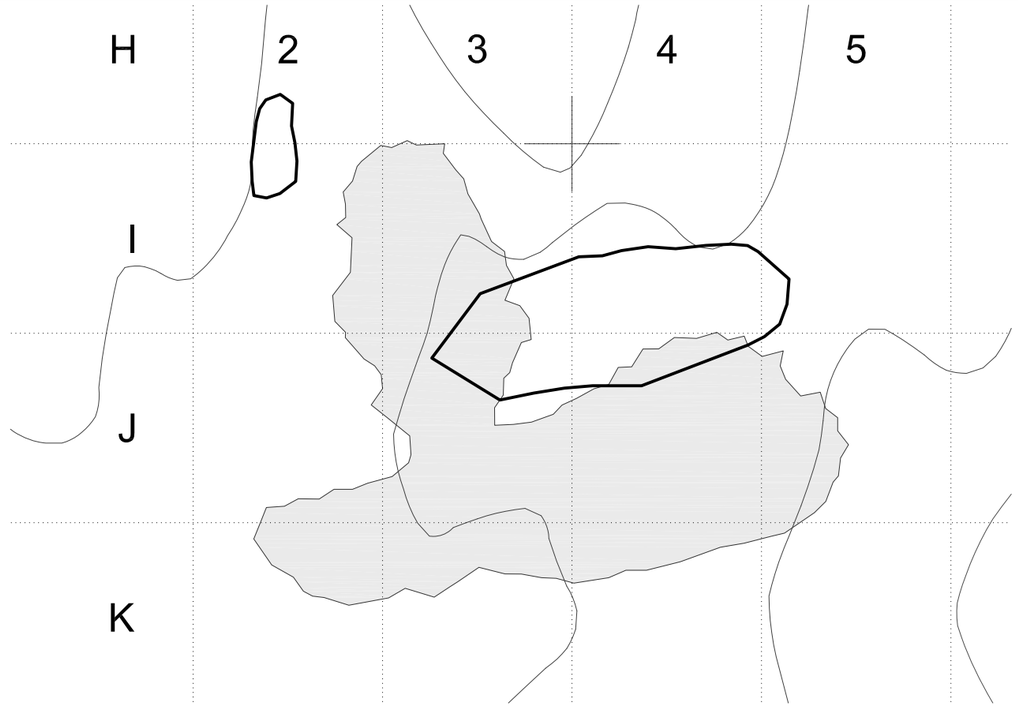
DISPOSAL PIT C2 EXCAVATION ON 7/22/09



DISPOSAL PIT C2 ADDITIONAL EXCAVATION ON 10/13/09

DISPOSAL PIT C2 ADDITIONAL EXCAVATION ON 10/14/09

DISPOSAL PIT C2 FINAL EXCAVATION

LEGEND

- 660 — MAJOR 2 FOOT ELEVATION CONTOUR
- 654 — MINOR 2 FOOT ELEVATION CONTOUR
- FENCE LINE
- WATERWAY
- GUARDRAIL
- TREELINE
- RAILROAD TRACKS
- UNPAVED ROAD
- PAVED ROAD
- SURVEY MONUMENT
- CULVERT
- CATCH BASIN
- TREE
- TELEPHONE POLE
- LIGHT POLE
- DOUBLE POLE
- HYDRANT
- SIGN
- COORDINATE CROSSHAIR
- LIMITS OF EXCAVATION INCLUDING SLOPE STABILIZATION BENCH

20 10 0 20 40

SCALE (FT)

PARSONS

100 HIGH STREET, 4TH FLOOR - BOSTON, MA 02110-1713

CLIENT/PROJECT TITLE:

SENECA ARMY DEPOT ACTIVITY
CONSTRUCTION COMPLETION REPORT
SEAD-12

DEPT:	JOB NO:
ENVIRONMENTAL ENGINEERING	746762-02000

FIGURE TITLE:

FIGURE 3-7
ADDITIONAL EXCAVATIONS IN
DISPOSAL PIT C2

SCALE:	DRWN:	CHKD:	APPD:	DATE:	REV:
1" = 20'	RR	JA	TH	7/7/2010	B

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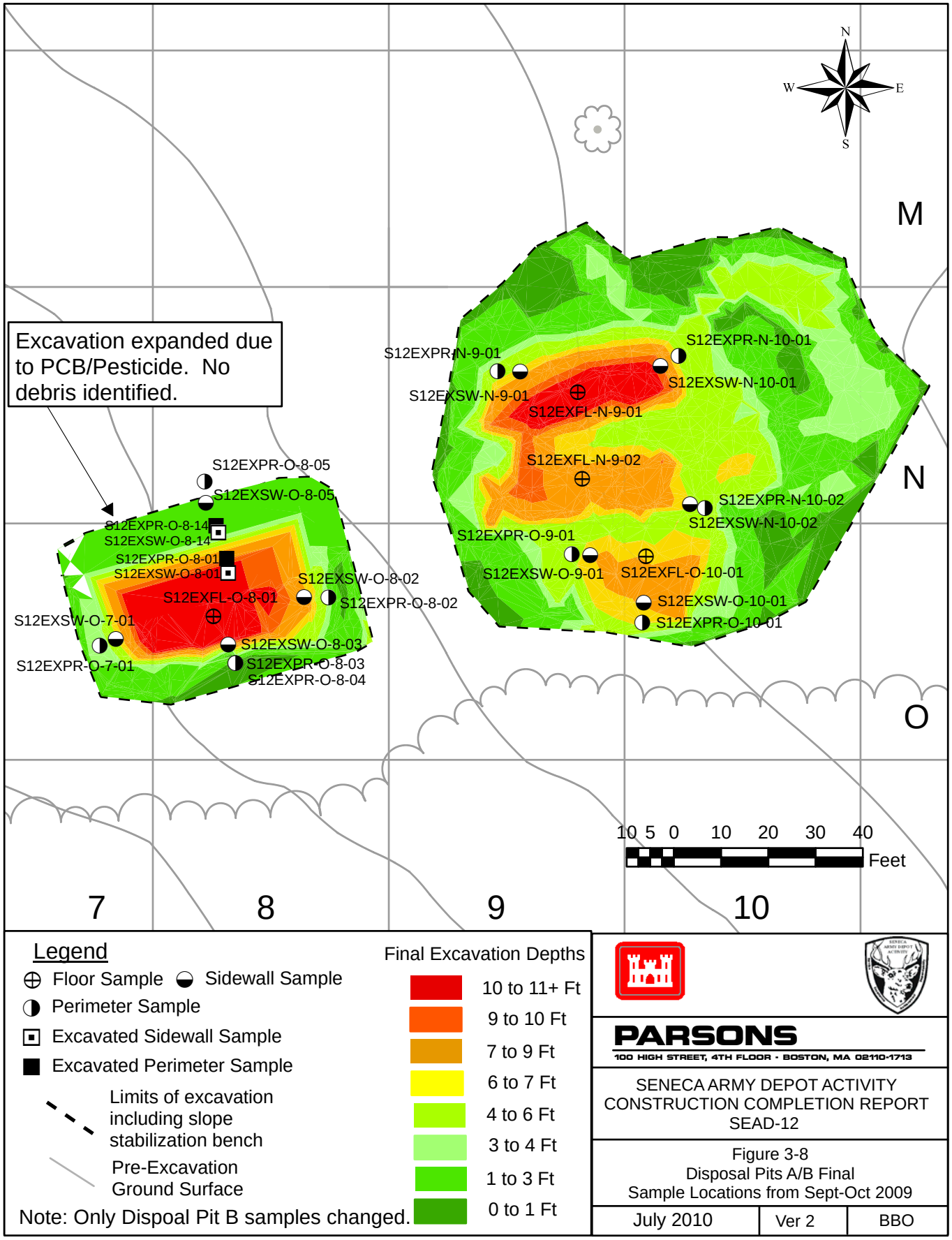

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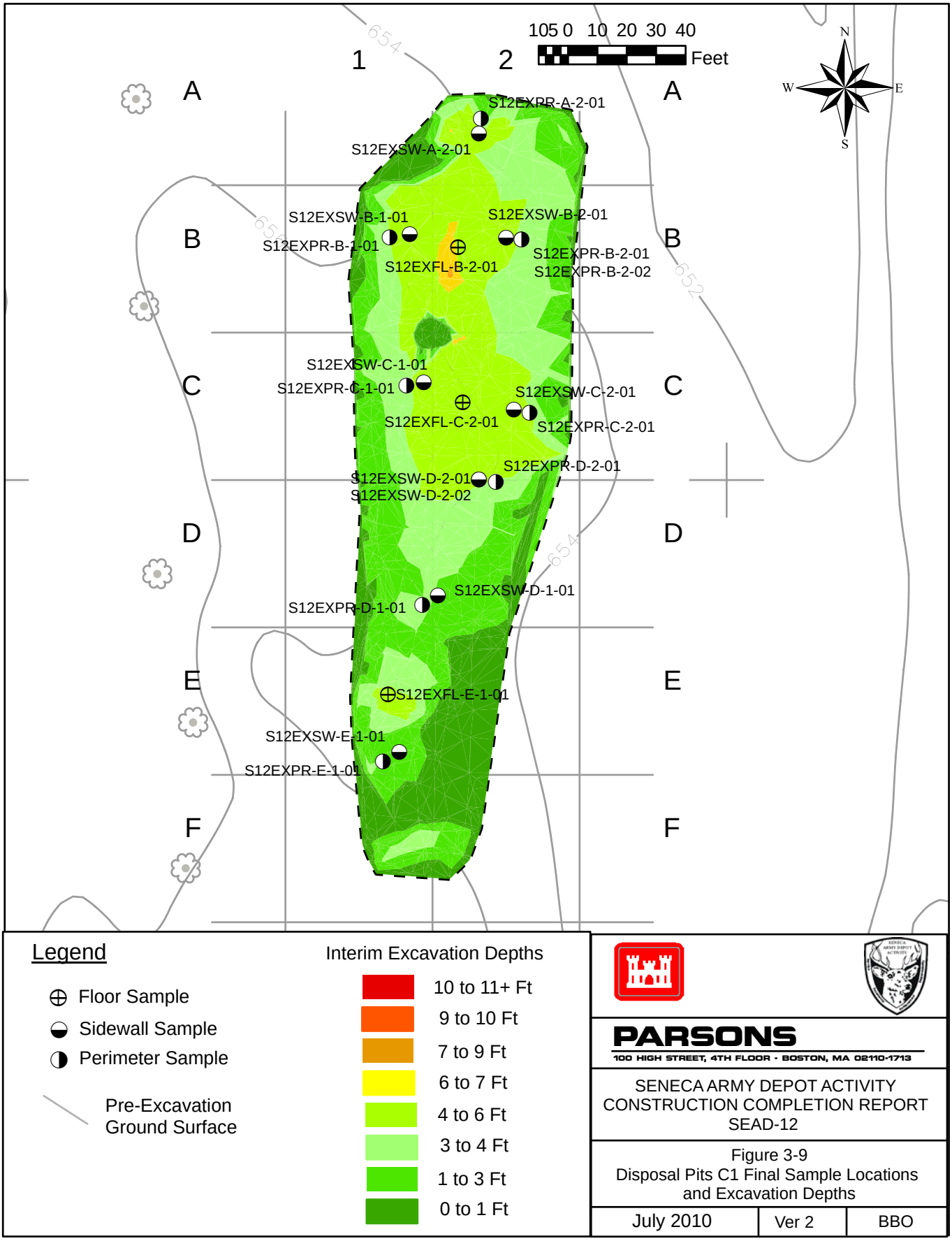
SENECA ARMY DEPOT ACTIVITY
CONSTRUCTION COMPLETION REPORT
SEAD-12

Figure 3-8
Disposal Pits A/B Final
Sample Locations from Sept-Oct 2009

July 2010	Ver 2	BBO



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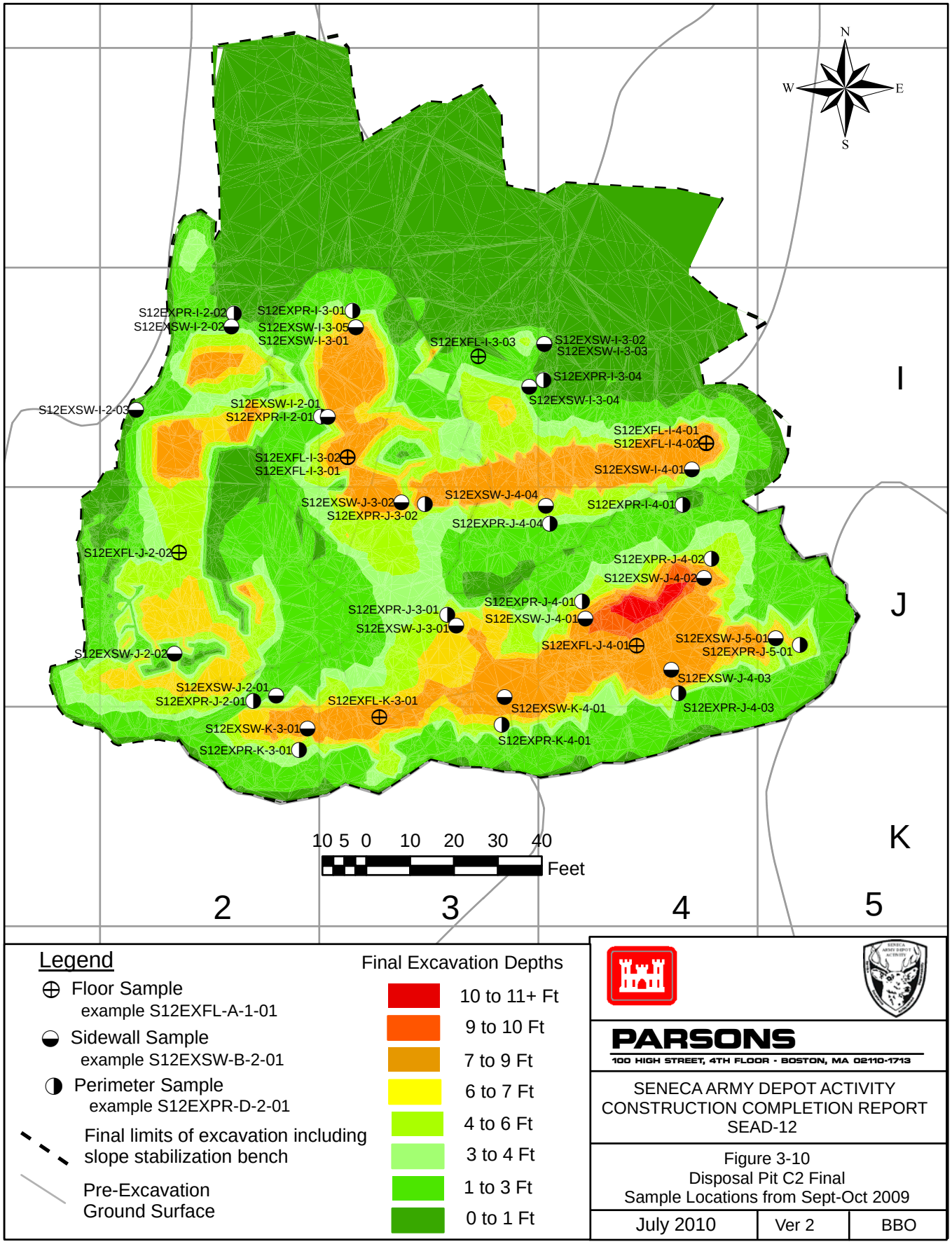
PARSONS
100 HIGH STREET, 4TH FLOOR - BOSTON, MA 02110-1713

SENECA ARMY DEPOT ACTIVITY
CONSTRUCTION COMPLETION REPORT
SEAD-12

Figure 3-9
Disposal Pits C1 Final Sample Locations and Excavation Depths

July 2010	Ver 2	BBO



Legend

- ⊕ Floor Sample
  example S12EXFL-A-1-01
- ◒ Sidewall Sample
  example S12EXSW-B-2-01
- ◑ Perimeter Sample
  example S12EXPR-D-2-01
- Final limits of excavation including slope stabilization bench
- Pre-Excavation Ground Surface

Final Excavation Depths

- 10 to 11+ Ft
- 9 to 10 Ft
- 7 to 9 Ft
- 6 to 7 Ft
- 4 to 6 Ft
- 3 to 4 Ft
- 1 to 3 Ft
- 0 to 1 Ft

PARSONS
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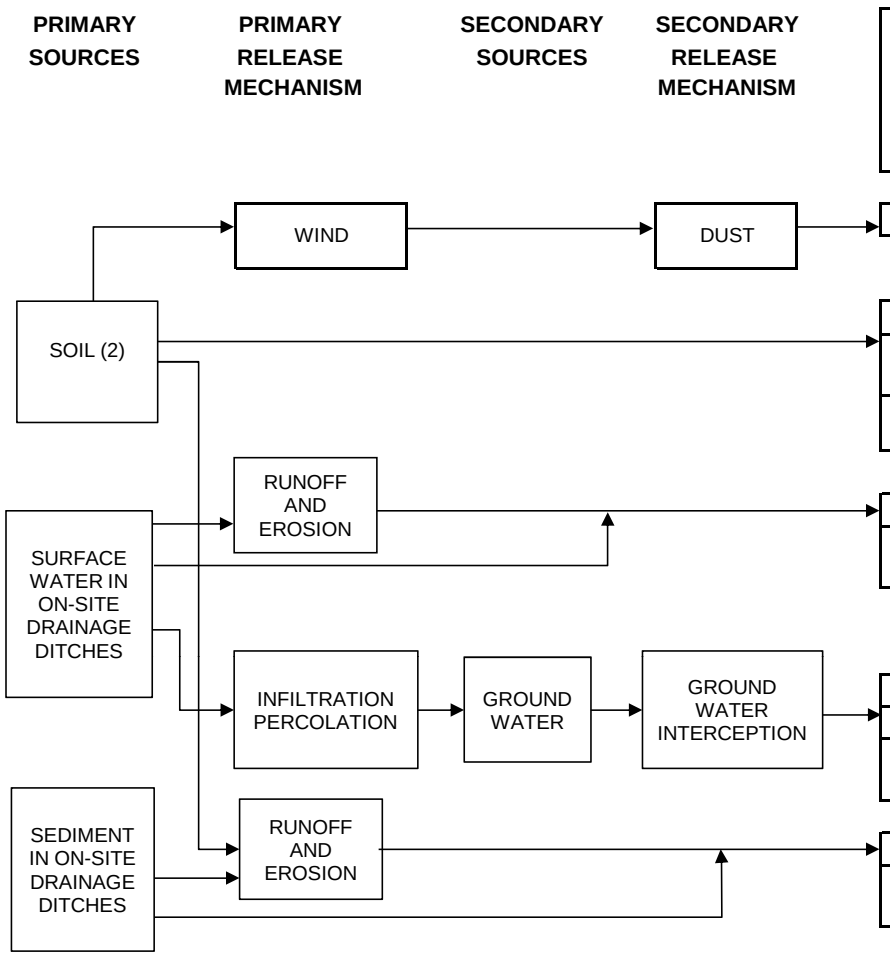
SENECA ARMY DEPOT ACTIVITY
CONSTRUCTION COMPLETION REPORT
SEAD-12

Figure 3-10
Disposal Pit C2 Final
Sample Locations from Sept-Oct 2009

July 2010	Ver 2	BBO

P:\PIT\Projects\Huntsville Cont W912DY-08-D-0003\TO#03 - SEAD-12 RA\CCR\Draft\Figures\ArcMap\S-12_Pit_C2_Chem_Sample_Loc_Final.mxd

FIGURE 4-1 - Exposure Pathway - Updated SEAD-12 Risk Assessment



EXPOSURE ROUTE	RECEPTOR: HUMAN					
	CURRENT SITE WORKER	FUTURE PARK WORKER OUTDOOR	OFF SITE WADER	FUTURE RECREATIONAL VISITOR	FUTURE CONSTRUCTION WORKER	RESIDENTIAL (1)
INHALATION	C/R	C/R	NA	C/R	C/R	C/R
INGESTION	C/R	C/R	NA	C/R	C/R (3)	C/R
DERMAL CONTACT	C	C	NA	C	C	C
DIRECT EXPOSURE	R	R	NA	R	R	R
INGESTION	NA	NA	NA	NA	NA	R
DERMAL CONTACT	NA	C/R	NA	C	NA	C
INGESTION	NA	C/R	NA	C/R	NA	C/R
INHALATION	NA	NA	NA	C	NA	C
DERMAL CONTACT (4)	NA	NA	NA	C/R	NA	C/R
INGESTION	NA	NA	NA	C	NA	C/R
DERMAL CONTACT	NA	C	NA	C	NA	C

C Pathway considered to pose potential chemical risk
R Pathway considered to pose potential radiological risk
NA Not applicable to receptor

Notes:
1. Additional exposure pathways considered for radiological constituents (using RESRAD) are plant, meat, and milk ingestion.
2. Site receptors exposed to total soil for chemical constituents (COPCs).
3. The Future Construction Worker receptor suface and total soil for radiological constituents (ROPCs).
4. For radiological parameters, submersion rather than dermal contact is considered.

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APPENDICES

Appendix	Title
A	Daily Reports
B	Chemical and Radiological Confirmatory Soil Sample Results
C	Waste Disposal Characterization Results
D	Cabrera Service Inc. Radiological Confirmation Survey Report
E	Chain of Custody
F	Sample Delivery Group Case Narratives
G	Data Validation Memo
H	Updated SEAD-12 Human Health Risk Assessment
I	Field Ambient Air Dust Monitoring Results
J	Waste Manifests and Truck Load Out Logs
K	Water Analytical Results
L	Response to Comments

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APPENDIX A

DAILY REPORTS

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Daily Report for SEAD-12 Removal Action
(W912DY-08-D-0003 TO #03; Job 746762)

Date	**Day**	**Weather Conditions**
Monday, June 29, 2009	Monday	Scattered rain/Thunderstorms, temperature in the 60's

Personnel On-Site (use Table, Insert, Rows above or below to add extra spaces**)**
Working Hrs 0600 – 1630 hrs

Affiliation	**Position**	**Name**	**Time or Hours**
Parsons	**Construction Manager**	**B. McAllister**	**12 hours**
	Site Manager	**Tom Andrews**	**10 hours**
	Tech	**Brendan Baranek-Olmstead**	**10 hours**

Equipment On-Site (use Table, Insert, Rows above or below to add extra spaces)

Type	**#**	**Type**	**#**	**Type**	**#**
Excavator	0	Dozer	0	Haul Trucks	0
Loader	0	Flat Bed Truck	0	Skid Steer	0
Cat Folk w/ bucket	0	Screening Plant	0	Water Storage	0
Generator	0	Pump	0		
Trimble Surveying	1	Dust Monitors 2x	0		
Port-a-John	0				

Health and Safety:
PPE Level(s) D

Tool Box Meeting **Time:** 0630 hours

Slips/Trips/Falls, hydration, sun screen, check for ticks, avoid contact with vegetation such as poison ivy.

Work Performed:

Laid out the site limits of SEAD-12 disposal pits A/B, C, and support area so that it can be mowed and sprayed to reduce the presence of poison ivy.
Base station was setup on SEAD-12A 1994 and QC checked on monument SEAD-12A-1 1994.

Sampling

No samples were collected.

Daily Report for SEAD-12 Removal Action

(W912DY-08-D-0003 TO #03; Job 746762)

Disposal (Use right click, update field function to total Cumulative numbers)

Loads (to Date)	Loads Today	Cum Loads	Est Tons (to Date)	Est Tons Today	Cum Est. Tons
0	0	0	0	0	0
		0			0

Delivered Material (use Table, Insert, Rows above or below to add extra spaces)

Material	Loads	Cubic Yards	Tons

Prepared By: _____

Tom Andrews

Reviewed By: _____ Date: _____

Daily Report for SEAD-12 Removal Action
(W912DY-08-D-0003 TO #03; Job 746762)

Date	**Day**	**Weather Conditions**
Tuesday, June 30, 2009	Tuesday	Scattered rain/Thunderstorms, temperature in the 60's

Personnel On-Site (use Table, Insert, Rows above or below to add extra spaces**)**
Working Hrs 0600 – 1630 hrs

Affiliation	**Position**	**Name**	**Time or Hours**
Parsons	**Construction Manager**	**B. McAllister**	**10 hrs**
	Site Manager	**Tom Andrews**	**10 hours**
	Tech	**Brendan Baranek-Olmstead**	**10 hours**
Visitors		**Bruce Molberry**	**10 hours**

Equipment On-Site (use Table, Insert, Rows above or below to add extra spaces)

Type	**#**	**Type**	**#**	**Type**	**#**
Excavator	0	Dozer	0	Haul Trucks	0
Loader	0	Flat Bed Truck	0	Skid Steer	0
Cat Folk w/ bucket	0	Screening Plant	0	Water Storage	0
Generator	0	Pump	0		
Trimble Surveying	1	Dust Monitors 2x	0		
Port-a-John	0				

Health and Safety:
PPE Level(s) D

Tool Box Meeting **Time:** 0630 hours

Slips/Trips/Falls, hydration, sun screen, check for ticks, avoid contact with vegetation such as poison ivy.

Work Performed:
Laid out excavation limits of SEAD-12 disposal pits A/B and C.
Conducted pre-construction topographic survey of ground surface.
Base station was setup on SEAD-12A 1994 and QC checked on monument SEAD-12A-1 1994.
Bruce Molberry came out to SEAD-12 to estimate the extent and area that needs to be sprayed with Roundup.

Sampling

No samples were collected.

Daily Report for SEAD-12 Removal Action

(W912DY-08-D-0003 TO #03; Job 746762)

Disposal (Use right click, update field function to total Cumulative numbers)

Loads (to Date)	Loads Today	Cum Loads	Est Tons (to Date)	Est Tons Today	Cum Est. Tons
0	0	0	0	0	0
		0			0

Delivered Material (use Table, Insert, Rows above or below to add extra spaces)

Material	Loads	Cubic Yards	Tons

Prepared By: _____

Thomas Andrews

Reviewed By: _____ Date: _____

Daily Report for SEAD-12 Removal Action
(W912DY-08-D-0003 TO #03; Job 746762)

Date	**Day**	**Weather Conditions**
Wednesday, July 1, 2009	Wednesday	Temp in 60's, scattered rain/Thunder storms

Personnel On-Site (use Table, Insert, Rows above or below to add extra spaces**)**
Working Hrs 0600 – 1630 hrs

Affiliation	**Position**	**Name**	**Time or Hours**
Parsons	**Construction Manager**	**B. McAllister**	**10 hours**
	Tech	**Brendan Baranek-Olmstead**	**10 hours**

Equipment On-Site (use Table, Insert, Rows above or below to add extra spaces)

Type	**#**	**Type**	**#**	**Type**	**#**
Excavator	0	Dozer	0	Haul Trucks	0
Loader	0	Flat Bed Truck	0	Skid Steer	0
Cat Folk w/ bucket	0	Screening Plant	0	Water Storage	0
Generator	0	Pump	0		
Trimble Surveying GPS	1	Dust Monitors 2x	0	Rover	2
Port-a-John	0				

Health and Safety:
PPE Level(s) D

Tool Box Meeting **Time:** 0630 hours

Slips/Trips/Falls, hydration, sun screen, check for ticks, avoid contact with vegetation such as poison ivy.

Work Performed:
Laid out grids to mark SEAD-12 disposal pits A/B and C excavation limits.
Completed pre-construction topographic survey of the ground surface.
Base station was setup on SEAD-12A 1994 and QC checked on monument SEAD-12A-1 1994.

Sampling

No samples were taken.

Daily Report for SEAD-12 Removal Action

(W912DY-08-D-0003 TO #03; Job 746762)

Disposal (Use right click, update field function to total Cumulative numbers)

Loads (to Date)	Loads Today	Cum Loads	Est Tons (to Date)	Est Tons Today	Cum Est. Tons
0	0	0	0	0	0
		0			0

Delivered Material (use Table, Insert, Rows above or below to add extra spaces)

Material	Loads	Cubic Yards	Tons

Prepared By: _____

Ben McAllister

Reviewed By: _____ Date: _____

Daily Report for SEAD-12 Removal Action
(W912DY-08-D-0003 TO #03; Job 746762)

Date	**Day**	**Weather Conditions**
Thursday, July 9, 2009	**Thursday**	Temperature ranged 53 to 77, wind N 2 to 12 mph

Personnel On-Site (use Table, Insert, Rows above or below to add extra spaces**)**
Working Hrs 0600 – 1630 hrs

Affiliation	**Position**	**Name**	**Time or Hours**
Parsons			
	Site Manager	**Tom Andrews**	**10 hours**
	Tech	**Brendan Baranek-Olmstead**	**10 hours**
Cabrera	**Rad Tech**		**10 hours**

Equipment On-Site (use Table, Insert, Rows above or below to add extra spaces)

Type	**#**	**Type**	**#**	**Type**	**#**
Excavator	0	Dozer	0	Haul Trucks	0
Loader	0	Flat Bed Truck	0	Skid Steer	0
Cat Folk w/ bucket	0	Screening Plant	0	Water Storage	0
Generator	0	Pump	0		
Trimble Surveying	0	Dust Monitors 2x	0		
Port-a-John	0				

Health and Safety:
PPE Level(s) D

Tool Box Meeting **Time:** 0630 hours

Discussed hazards of poison ivy exposure and importance of wearing safety vests

Work Performed:

Cabrera mobilized to site and began radiological equipment calibration.
Began layout of grids for radiological surveys.

Sampling

No samples were taken.

Daily Report for SEAD-12 Removal Action

(W912DY-08-D-0003 TO #03; Job 746762)

Disposal (Use right click, update field function to total Cumulative numbers)

Loads (to Date)	Loads Today	Cum Loads	Est Tons (to Date)	Est Tons Today	Cum Est. Tons
0	0	0	0	0	0
		0			0

Delivered Material (use Table, Insert, Rows above or below to add extra spaces)

Material	Loads	Cubic Yards	Tons

Prepared By: _____

Thomas C. Andrews

Reviewed By: _____ Date: _____

Daily Report for SEAD-12 Removal Action
(W912DY-08-D-0003 TO #03; Job 746762)

Date **Day** **Weather Conditions**
Friday, July 10, 2009

Personnel On-Site (use Table, Insert, Rows above or below to add extra spaces**)**
Working Hrs 0600 – 1630 hrs

Affiliation	**Position**	**Name**	**Time or Hours**
Parsons			
	Site Manager	**Tom Andrews**	
	Tech	**Brendan Baranek-Olmstead**	**10 hours**
Cabrera	**Rad Tech**		**10 hours**

Equipment On-Site (use Table, Insert, Rows above or below to add extra spaces)

Type	**#**	**Type**	**#**	**Type**	**#**
Excavator	0	Dozer	0	Haul Trucks	0
Loader	0	Flat Bed Truck	0	Skid Steer	0
Cat Folk w/ bucket	0	Screening Plant	0	Water Storage	0
Generator	0	Pump	0		
Trimble Surveying	0	Dust Monitors 2x	0		
Port-a-John	0				

Health and Safety:
PPE Level(s) D

Tool Box Meeting **Time:** 0630 hours

Discussed hazards of poison ivy exposure and importance of wearing safety vests

Work Performed:

Continued layout of material and started performing background radiological surveying.

Sampling

No samples were taken.

Daily Report for SEAD-12 Removal Action

(W912DY-08-D-0003 TO #03; Job 746762)

Disposal (Use right click, update field function to total Cumulative numbers)

Loads (to Date)	Loads Today	Cum Loads	Est Tons (to Date)	Est Tons Today	Cum Est. Tons
0	0	0	0	0	0
		0			0

Delivered Material (use Table, Insert, Rows above or below to add extra spaces)

Material	Loads	Cubic Yards	Tons

Prepared By: _____

Thomas C. Andrews

Reviewed By: _____ Date: _____

Daily Report for SEAD-12 Removal Action
(W912DY-08-D-0003 TO #03; Job 746762)

Date	**Day**	**Weather Conditions**
Monday July 13, 2009	Monday	Cool, sunny, 60s – 70s

Personnel On-Site (use Table, Insert, Rows above or below to add extra spaces**)**
Working Hrs 0600 – 1630 hrs

Affiliation	**Position**	**Name**	**Time or Hours**
Parsons			
	Site Manager	**Tom Andrews**	**10 hours**
	Tech	**Brendan Baranek-Olmstead**	**10 hours**
St. George	**Superintendent**		**10 hours**
	Operators		**20 hours**
	Laborers		**20 hours**
	Teamster		**20 hours**
Cabrera	**Rad Tech**		**10 hours**

Equipment On-Site (use Table, Insert, Rows above or below to add extra spaces)

Type	**#**	**Type**	**#**	**Type**	**#**
Excavator	1	Dozer	2	Haul Trucks	2
Loader	1	Flat Bed Truck	0	Skid Steer	0
Cat Folk w/ bucket	0	Screening Plant	0	Water Storage	1
Generator	0	Pump	1		
Trimble Surveying	0	Dust Monitors 2x	0		
Port-a-John	0				

Health and Safety:
PPE Level(s) D

Tool Box Meeting **Time:** 0630 hours

Discussed hazards of poison ivy exposure and importance of wearing safety vests

Work Performed:

Mobilized equipment to job site.
Constructed an entrance to the site using stone and culverts from the SEAD-4 entrance way. I Installed security and a silt fence at the site.

Sampling

No samples were taken.

Daily Report for SEAD-12 Removal Action
(W912DY-08-D-0003 TO #03; Job 746762)

Disposal (Use right click, update field function to total Cumulative numbers)

Loads (to Date)	Loads Today	Cum Loads	Est Tons (to Date)	Est Tons Today	Cum Est. Tons
0	0	0	0	0	0
		0			0

Delivered Material (use Table, Insert, Rows above or below to add extra spaces)

Material	Loads	Cubic Yards	Tons

Prepared By: _____
Thomas C. Andrews

Reviewed By: _____ Date: _____

Daily Report for SEAD-12 Removal Action
(W912DY-08-D-0003 TO #03; Job 746762)

Date	**Day**	**Weather Conditions**
Tuesday, July 14, 2009	Tuesday	Sunny, temperature in the upper 50s - 70's

Personnel On-Site (use Table, Insert, Rows above or below to add extra spaces**)**
Working Hrs 0600 – 1630 hrs

Affiliation	**Position**	**Name**	**Time or Hours**
Parsons			
	Site Manager	**Tom Andrews**	**10 hours**
	Construction Manager	**Ben McAllister**	**10 hours**
St. George	**Superintendent**		**10 hours**
	Operators		**20 hours**
	Laborer		**20 hours**
	Teamster		**20 hours**
Cabrera	**Rad Tech**		**10 hours**
Visitors	**Army**	**John Cleary**	
	Army	**Tom Battaglia**	
	Army	**Randy Battaglia**	
	Cabrera	**John Hackett**	

Equipment On-Site (use Table, Insert, Rows above or below to add extra spaces)

Type	**#**	**Type**	**#**	**Type**	**#**
Excavator	1	Dozer	1	Haul Trucks	2
Loader	1	Flat Bed Truck	0	Skid Steer	0
Cat Fork w/ bucket	0	Screening Plant	0	Water Storage	1
Generator	0	Pump	1		
Trimble Surveying	0	Dust Monitors	2		
Port-a-John	1				

Health and Safety:
PPE Level(s) D

Tool Box Meeting **Time:** 0630 hours

Discussed hazards of poison ivy exposure and importance of wearing safety vests

Work Performed:

Completed construction on 200 feet of road and two entrance ways with culverts for the truck turnaround.
Started excavation in Test pit A & B.
Approximately 600 cys were excavated, laid down, and tested for radiological signatures.
Radioactive material that appeared to be luminous dials was set aside.

Removed several pieces of classified material and set aside for Army inspection.
Overburden was contaminated with debris.

Sampling

No samples were taken.

Disposal (Use right click, update field function to total Cumulative numbers)

Loads (to Date)	Loads Today	Cum Loads	Est Tons (to Date)	Est Tons Today	Cum Est. Tons
0	0	0	0	0	0
		0			0

Delivered Material (use Table, Insert, Rows above or below to add extra spaces)

Material	Loads	Cubic Yards	Tons

Prepared By: _____
Thomas C. Andrews

Reviewed By: _____ Date: _____

Daily Report for SEAD-12 Removal Action
(W912DY-08-D-0003 TO #03; Job 746762)

Date	**Day**	**Weather Conditions**
Wednesday, July 15, 2009	Wednesday	Sunny, temperature in the 70's

Personnel On-Site (use Table, Insert, Rows above or below to add extra spaces**)**
Working Hrs 0600 – 1630 hrs

Affiliation	**Position**	**Name**	**Time or Hours**
Parsons	**Site Manager**	**Tom Andrews**	**10 hours**
	Construction Manager	**Ben McAllister**	**10 hours**
St. George	**Superintendent**		**10 hours**
	Operators		**20 hours**
	Laborer		**20hours**
	Teamster (3)		**30 hours**
Cabrera	**Rad Tech**		**10 hours**
Visitors	**Army**	**John Cleary**	
	Army	**Tom Battaglia**	
	Army	**Randy Battaglia**	
	Cabrera	**John Hackett**	

Equipment On-Site (use Table, Insert, Rows above or below to add extra spaces)

Type	**#**	**Type**	**#**	**Type**	**#**
Excavator	1	Dozer	1	Haul Trucks	2
Loader	1	Flat Bed Truck	1	Skid Steer	0
Cat Fork w/ bucket	0	Screening Plant	0	Water Storage	1
Generator	0	Pump	1		
Trimble Surveying	0	Dust Monitors 2x	2		
Port-a-John	1				

Health and Safety:
PPE Level(s) D

Tool Box Meeting **Time:** 0630 hours

Discussed hazards of poison ivy exposure and importance of wearing safety vests

Work Performed:

Completed excavation of pit A & B.
Today 1200 cys of soil was excavated from Pit A, and in total approximately 1770 cys were excavated.
Pit A was photographed after the excavation was completed.
Approximately 500 cys of soil were excavated from Pit B.
Any radioactive material or classified material encountered was set aside.
Most overburden was contaminated with debris, however clean overburden was set aside.

Classified material was moved to a storage building.
Parsons/St George provided a flat bed since the Army did not have one as promised.
Plan to move screen plant to site next week, additional equipment will be required

Sampling

No samples were taken.

Disposal (Use right click, update field function to total Cumulative numbers)

Loads (to Date)	Loads Today	Cum Loads	Est Tons (to Date)	Est Tons Today	Cum Est. Tons
0	0	0	0	0	0
		0			0

Delivered Material (use Table, Insert, Rows above or below to add extra spaces)

Material	Loads	Cubic Yards	Tons

Prepared By: _____
Thomas C. Andrews

Reviewed By: _____ Date: _____

Daily Report for SEAD-12 Removal Action
(W912DY-08-D-0003 TO #03; Job 746762)

Date	**Day**	**Weather Conditions**
Thursday, July 16, 2009	Thursday	Sunny, temperature in the 60s – 80s

Personnel On-Site (use Table, Insert, Rows above or below to add extra spaces**)**
Working Hrs 0600 – 1630 hrs

Affiliation	**Position**	**Name**	**Time or Hours**
Parsons	**Site Manager**	**Tom Andrews**	**10 hours**
	Construction Manager	**Ben McAllister**	**10 hours**
St. George	**Superintendent**		**10 hours**
	Operator		**10 hours**
	Laborer		**10 hours**
	Teamster		**30 hours**
Cabrera	**Rad Tech**		**10 hours**
Visitors	**Army**	**John Cleary**	
	Army	**Tom Battaglia**	
	Army	**Randy Battaglia**	

Equipment On-Site (use Table, Insert, Rows above or below to add extra spaces)

Type	**#**	**Type**	**#**	**Type**	**#**
Excavator	1	Dozer	1	Haul Trucks	2
Loader	1	Flat Bed Truck	1	Skid Steer	1
Cat Fork w/ bucket	1	Screening Plant	1	Water Storage	1
Generator	0	Pump	1		
Trimble Surveying	0	Dust Monitors 2x	2		
Port-a-John	1				

Health and Safety:
PPE Level(s) D

Tool Box Meeting **Time:** 0630 hours

Discussed hazards of poison ivy exposure and importance of wearing safety vests

Work Performed:

Pit C-2 was excavated.
Any radioactive material encountered was set aside.
All classified material was moved to a storage building.

Sampling

Daily Report for SEAD-12 Removal Action

(W912DY-08-D-0003 TO #03; Job 746762)

No samples were taken.

Disposal (Use right click, update field function to total Cumulative numbers)

Loads (to Date)	Loads Today	Cum Loads	Est Tons (to Date)	Est Tons Today	Cum Est. Tons
0	0	0	0	0	0
		0			0

Delivered Material (use Table, Insert, Rows above or below to add extra spaces)

Material	Loads	Cubic Yards	Tons

Prepared By: _____

Thomas C. Andrews

Reviewed By: _____ Date: _____

Daily Report for SEAD-12 Removal Action
(W912DY-08-D-0003 TO #03; Job 746762)

Date	**Day**	**Weather Conditions**
Monday, July 20, 2009		Hot, temperature in the 60s – 80s, sunny

Personnel On-Site (use Table, Insert, Rows above or below to add extra spaces**)**
Working Hrs 0600 – 1630 hrs

Affiliation	**Position**	**Name**	**Time or Hours**
Parsons	**Site Manager**	**Tom Andrews**	**10 hours**
	Construction Manager	**Ben McAllister**	**10 hours**
St. George	**Superintendent**		**10 hours**
	Operator		**10 hours**
	Laborer		**10 hours**
	Teamster		**30 hours**
Cabrera	**Rad Tech**		**10 hours**

Equipment On-Site (use Table, Insert, Rows above or below to add extra spaces)

Type	**#**	**Type**	**#**	**Type**	**#**
Excavator	1	Dozer	1	Haul Trucks	2
Loader	1	Flat Bed Truck	1	Skid Steer	1
Cat Fork w/ bucket	1	Screening Plant	1	Water Storage	1
Generator	0	Pump	1		
Trimble Surveying	0	Dust Monitors 2x	2		
Port-a-John	1				

Health and Safety:
PPE Level(s) D

Tool Box Meeting **Time:** 0630 hours

Discussed hazards of poison ivy exposure and importance of wearing safety vests

Work Performed:

Excavation of Pit C-2 was completed.
Excavation of Pit C-1 was started, and the pit appeared to be mostly Construction and Demolition Debris.
All classified material was moved to a storage building.
The screening plant was mobilized to the site.

Sampling

No samples were taken.

Daily Report for SEAD-12 Removal Action

(W912DY-08-D-0003 TO #03; Job 746762)

Disposal (Use right click, update field function to total Cumulative numbers)

Loads (to Date)	Loads Today	Cum Loads
0	0	0
		0

Est Tons (to Date)	Est Tons Today	Cum Est. Tons
0	0	0
		0

Delivered Material (use Table, Insert, Rows above or below to add extra spaces)

Material	Loads	Cubic Yards	Tons

Prepared By: _____

Thomas C. Andrews

Reviewed By: _____ Date: _____

Daily Report for SEAD-12 Removal Action
(W912DY-08-D-0003 TO #03; Job 746762)

Date	**Day**	**Weather Conditions**
Tuesday, July 21, 2009	Tuesday	Cloudy, temperature in the 60 – 80s

Personnel On-Site (use Table, Insert, Rows above or below to add extra spaces**)**
Working Hrs 0600 – 1630 hrs

Affiliation	**Position**	**Name**	**Time or Hours**
Parsons	**Site Manager**	**Tom Andrews**	**10 hours**
	Construction Manager	**Ben McAllister**	**10 hours**
St. George	**Superintendent**		**10 hours**
	Operator		**20 hours**
	Laborer		**10 hours**
	Teamsters		**30 hours**
Cabrera	**Rad Tech**		**10 hours**

Equipment On-Site (use Table, Insert, Rows above or below to add extra spaces)

Type	**#**	**Type**	**#**	**Type**	**#**
Excavator	1	Dozer	1	Haul Trucks	2
Loader	1	Flat Bed Truck	1	Skid Steer	1
Cat Fork w/ bucket	1	Screening Plant	1	Water Storage	1
Generator	0	Pump	1		
Trimble Surveying	0	Dust Monitors 2x	2		
Port-a-John	1				

Health and Safety:
PPE Level(s) D

Tool Box Meeting **Time:** 0630 hours

Discussed hazards of poison ivy exposure and importance of wearing safety vests

Work Performed:

Excavation of Pit C-1 was completed.
Excavated C-1 material was screened, and the final C1 cut was moved to the overburden pile as per Tom Battaglia.
Moved the majority of the round objects to area to be disfigured.
The flat bed truck and trailer were eliminated at the end of the day.

Final excavated Pit areas and excavated volumes were estimated, and are as followed:

PIT	AREA	PERIMETER	VOLUME (C.Y.)
A	6210.1539	380.5575	1036.64

B	1328.3987	178.8554	286.18
C1	13536.2382	698.1758	1639.3
C2	9031.6346	566.4143	1436.42
Totals			4398.74

Sampling

No samples were taken.

Disposal (Use right click, update field function to total Cumulative numbers)

Loads (to Date)	Loads Today	Cum Loads	Est Tons (to Date)	Est Tons Today	Cum Est. Tons
0	0	0	0	0	0
		0			0

Delivered Material (use Table, Insert, Rows above or below to add extra spaces)

Material	Loads	Cubic Yards	Tons

Prepared By: _____
Thomas C. Andrews

Reviewed By: _____ Date: _____

Daily Report for SEAD-12 Removal Action
(W912DY-08-D-0003 TO #03; Job 746762)

Date	**Day**	**Weather Conditions**
Wednesday, July 22, 2009	Wednesday	Cloudy, temperature in the mid 60s – mid 80s

Personnel On-Site (use Table, Insert, Rows above or below to add extra spaces**)**
Working Hrs 0600 – 1630 hrs

Affiliation	**Position**	**Name**	**Time or Hours**
Parsons	**Site Manager**	**Tom Andrews**	**10 hours**
	Construction Manager	**Ben McAllister**	**10 hours**
St. George	**Superintendent**		**10 hours**
	Operators		**30 hours**
	Laborer		**10 hours**
	Teamsters		**20 hours**
Cabrera	**Rad Tech**		**10 hours**
Army			

Equipment On-Site (use Table, Insert, Rows above or below to add extra spaces)

Type	**#**	**Type**	**#**	**Type**	**#**
Excavator	1	Dozer	1	Haul Trucks	2
Loader	1	Flat Bed Truck	0	Skid Steer	1
Cat Fork w/ bucket	0	Screening Plant	1	Water Storage	1
Generator	0	Pump	1		
Trimble Surveying	0	Dust Monitors 2x	2		
Port-a-John	1				

Health and Safety:
PPE Level(s) D

Tool Box Meeting **Time:** 0630 hours

Discussed hazards of poison ivy exposure and importance of wearing safety vests

Work Performed:

Continued to screen C1 and move the final C1 cut to the overburden stockpile.
Sampled radiological levels of the dozer, flat bed trailer, and cat fork to prepare for equipment demobilization.
Moved two scrap boxes onto site, and ordered a roll off for trash.

Sampling

No samples were taken.

Daily Report for SEAD-12 Removal Action

(W912DY-08-D-0003 TO #03; Job 746762)

Disposal (Use right click, update field function to total Cumulative numbers)

Loads (to Date)	Loads Today	Cum Loads	Est Tons (to Date)	Est Tons Today	Cum Est. Tons
0	0	0	0	0	0
		0			0

Delivered Material (use Table, Insert, Rows above or below to add extra spaces)

Material	Loads	Cubic Yards	Tons

Prepared By: _____

Thomas C. Andrews

Reviewed By: _____ Date: _____

Daily Report for SEAD-12 Removal Action
(W912DY-08-D-0003 TO #03; Job 746762)

Date	**Day**	**Weather Conditions**
Thursday, July 23, 2009	Thursday	Showers overnight, Intermittent shower during the day

Personnel On-Site (use Table, Insert, Rows above or below to add extra spaces**)**
Working Hrs 0600 – 1630 hrs

Affiliation	**Position**	**Name**	**Time or Hours**
Parsons	**Site Manager**	**Tom Andrews**	**10 hours**
	Construction Manager	**Ben McAllister**	**10 hours**
St. George	**Superintendent**		**10 hours**
	Operators		**30 hours**
	Laborer		**10 hours**
	Teamsters		**20 hours**
Cabrera	**Rad Tech**		**10 hours**
Army			

Equipment On-Site (use Table, Insert, Rows above or below to add extra spaces)

Type	**#**	**Type**	**#**	**Type**	**#**
Excavator	1	Dozer	1	Haul Trucks	2
Loader	1	Flat Bed Truck	0	Skid Steer	1
Cat Fork w/ bucket	0	Screening Plant	1	Water Storage	1
Generator	0	Pump	1		
Trimble Surveying	0	Dust Monitors 2x	2		
Port-a-John	1				

Health and Safety:
PPE Level(s) D

Tool Box Meeting **Time:** 0630 hours

Discussed hazards of poison ivy exposure and importance of wearing safety vests

Work Performed:

Continued to screen C-1 material and move the final C-1 cut was to the overburden pile as per Tom Battaglia's orders.
Tom Battaglia said the Pit A, B, and C-2 should be screened and combined into one stockpile and no testing for disposal is to occur until all material is screened.
The dozer and cat fork lift were demobilized.
Third scrap box and roll off for debris disposal arrived on site.
It was decided that metal will be separated into Steel, Aluminum, and Ferrous.

Sampling
Excavations were sampled for clearance.

Daily Report for SEAD-12 Removal Action

(W912DY-08-D-0003 TO #03; Job 746762)

Disposal (Use right click, update field function to total Cumulative numbers)

Loads (to Date)	Loads Today	Cum Loads	Est Tons (to Date)	Est Tons Today	Cum Est. Tons
0	0	0	0	0	0
		0			0

Delivered Material (use Table, Insert, Rows above or below to add extra spaces)

Material	Loads	Cubic Yards	Tons

Prepared By: _____

Thomas C. Andrews

Reviewed By: _____ Date: _____

Daily Report for SEAD-12 Removal Action
(W912DY-08-D-0003 TO #03; Job 746762)

Date	**Day**	**Weather Conditions**
Monday, July 27, 2009	Monday	Cloudy to rain, temperatures in the upper 60s to upper 70s

Personnel On-Site (use Table, Insert, Rows above or below to add extra spaces**)**
Working Hrs 0600 – 1630 hrs

Affiliation	**Position**	**Name**	**Time or Hours**
Parsons	**Site Manager**	**Tom Andrews**	**10 hours**
	Construction Manager	**Ben McAllister**	**10 hours**
St. George	**Superintendent**		**10 hours**
	Operators		**40 hours**
	Laborer		**20 hours**
	Teamsters		**20 hours**
Cabrera	**Rad Tech**		**10 hours**
	Health Physicist	**Patti Retka**	**10 hours**
	CHP	**Nels Johnson**	**10 hours**
Army		**Tom Battaglia**	

Equipment On-Site (use Table, Insert, Rows above or below to add extra spaces)

Type	**#**	**Type**	**#**	**Type**	**#**
Excavator	1	Dozer	1	Haul Trucks	2
Loader	1	Flat Bed Truck	1	Skid Steer	1
Cat Fork w/ bucket	0	Screening Plant	1	Water Storage	1
Generator	1	Pump	1		
Trimble Surveying	0	Dust Monitors 2x	0		
Port-a-John	1				

Health and Safety:
PPE Level(s) D

Tool Box Meeting **Time:** 0630 hours

Discussed hazards of poison ivy exposure, slips/trips/falls, and the importance of wearing safety vests

Work Performed:

Completed first plant screening (Pit C1) operation.
Separated large scrap from piles prior to screening.
Moved the screening plant from Pit C1 lay down area to Pit A/B and C2 material area.
Mobilized the generator and frame for the radiation detectors.
Set up the radiation detectors on screening plant.
Leave the haul tracks on the job and move the screened material to one pile.

Sampling

No samples were taken.

Disposal (Use right click, update field function to total Cumulative numbers)

Loads (to Date)	Loads Today	Cum Loads	Est Tons (to Date)	Est Tons Today	Cum Est. Tons
0	0	0	0	0	0
		0			0

Delivered Material (use Table, Insert, Rows above or below to add extra spaces)

Material	Loads	Cubic Yards	Tons

Prepared By: _____
Thomas C. Andrews

Reviewed By: _____ Date: _____

Daily Report for SEAD-12 Removal Action
(W912DY-08-D-0003 TO #03; Job 746762)

Date	**Day**	**Weather Conditions**
Tuesday, July 28, 2009		Temperatures in the 70s to upper 80s, winds 5 - 15

Personnel On-Site (use Table, Insert, Rows above or below to add extra spaces**)**
Working Hrs 0600 – 1630 hrs

Affiliation	**Position**	**Name**	**Time or Hours**
Parsons	**Site Manager**	**Tom Andrews**	**10 hours**
	Construction Manager	**Ben McAllister**	**10 hours**
St. George	**Superintendent**		**10 hours**
	Operators		**40 hours**
	Laborer		**20 hours**
	Teamsters		**20 hours**
Cabrera	**Rad Tech**		**10 hours**
	HP	**Patti Retka**	**10 hours**
	CHP	**Nels Johnson**	**10 hours**
Army		**Tom Battaglia**	

Equipment On-Site (use Table, Insert, Rows above or below to add extra spaces)

Type	**#**	**Type**	**#**	**Type**	**#**
Excavator	1	Dozer	1	Haul Trucks	2
Loader	1	Flat Bed Truck	0	Skid Steer	1
Cat Fork w/ bucket	0	Screening Plant	1	Water Storage	1
Generator	1	Pump	1		
Trimble Surveying	0	Dust Monitors 2x	2		
Port-a-John	1				

Health and Safety:
PPE Level(s) D

Tool Box Meeting **Time:** 0630 hours

Discussed hazards of poison ivy exposure, slips/trips/falls, and the importance of wearing safety vests

Work Performed:

Set up radiation scan on stacking conveyor.
Worked out bugs and continued screening material.
Army requested that scrap be packed tighter in boxes prior to shipment.

Sampling

No samples were taken.

Daily Report for SEAD-12 Removal Action
(W912DY-08-D-0003 TO #03; Job 746762)

Disposal (Use right click, update field function to total Cumulative numbers)

Loads (to Date)	Loads Today	Cum Loads	Est Tons (to Date)	Est Tons Today	Cum Est. Tons
0	0	0	0	0	0
		0			0

Delivered Material (use Table, Insert, Rows above or below to add extra spaces)

Material	Loads	Cubic Yards	Tons

Prepared By: _____
Thomas C. Andrews

Reviewed By: _____ Date: _____

Daily Report for SEAD-12 Removal Action
(W912DY-08-D-0003 TO #03; Job 746762)

Date	**Day**	**Weather Conditions**
Wednesday, July 29, 2009	Wednesday	Cloudy, Temperature in the 70s

Personnel On-Site (use Table, Insert, Rows above or below to add extra spaces**)**
Working Hrs 0600 – 1630 hrs

Affiliation	**Position**	**Name**	**Time or Hours**
Parsons	**Site Manager**	**Tom Andrews**	**10 hours**
	Construction Manager	**Ben McAllister**	**10 hours**
St. George	**Superintendent**		**10 hours**
	Operators		**40 hours**
	Laborer		**20 hours**
	Teamsters		**20 hours**
Cabrera	**Rad Tech**	**Landon Collins**	**10 hours**
	HP	**Patti Retka**	**10 hours**
	CHP	**Nels Johnson**	**10 hours**
Army		**Tom Battaglia**	

Equipment On-Site (use Table, Insert, Rows above or below to add extra spaces)

Type	**#**	**Type**	**#**	**Type**	**#**
Excavator	1	Dozer	1	Haul Trucks	2
Loader	1	Flat Bed Truck	0	Skid Steer	1
Cat Fork w/ bucket	0	Screening Plant	1	Water Storage	1
Generator	1	Pump	1		
Trimble Surveying	0	Dust Monitors 2x	2		
Port-a-John	1				

Health and Safety:
PPE Level(s) D

Tool Box Meeting **Time:** 0630 hours

Discussed hazards of poison ivy exposure, slips/trips/falls, and the importance of wearing safety vests

Work Performed:
Scanning of pile C-2 was completed, and remaining material continued to be scanned.
The screen was moved to the middle of the 2 remaining piles.
Large scrap and debris from the piles were separated out prior to screening.
One box of non ferrous scrap was shipped off-site.

Sampling
Samples were taken from the excavations and screened material.

Daily Report for SEAD-12 Removal Action
(W912DY-08-D-0003 TO #03; Job 746762)

Disposal (Use right click, update field function to total Cumulative numbers)

Loads (to Date)	Loads Today	Cum Loads	Est Tons (to Date)	Est Tons Today	Cum Est. Tons
0	0	0	0	0	0
		0			0

Delivered Material (use Table, Insert, Rows above or below to add extra spaces)

Material	Loads	Cubic Yards	Tons

Prepared By: _____
Thomas C. Andrews

Reviewed By: _____ Date: _____

Daily Report for SEAD-12 Removal Action
(W912DY-08-D-0003 TO #03; Job 746762)

Date	**Day**	**Weather Conditions**
Thursday, July 30, 2009	**Thursday**	Clear, mid 60s - 80s

Personnel On-Site (use Table, Insert, Rows above or below to add extra spaces**)**
Working Hrs 0600 – 1630 hrs

Affiliation	**Position**	**Name**	**Time or Hours**
Parsons	**Construction Manager**	**B. McAllister**	**10 hrs**
		T.C. Andrews	**8 hrs**
St. George	**Superintendant**		**10 hrs**
	Operators		**30 hrs**
	Laborers		**20 hrs**
	Teamsters		**20 hrs**
Cabrera	**Rad Tech**	**Landon Collins**	**10 hrs**
	HP	**Patty Retka**	**10 hrs**
Army		**Tom Battaglia**	**1 hrs**

Visitors

Equipment On-Site (use Table, Insert, Rows above or below to add extra spaces)

Type	**#**	**Type**	**#**	**Type**	**#**
Excavator	1	Dozer	1	Haul Trucks	2
Loader	1	Flat Bed Truck	0	Skid Steer	1
Cat Folk w/ bucket	1	Screening Plant	1	Water Storage	1
Generator	1	Pump	1		
Trimble Surveying	0	Dust Monitors 2x	2		
Port-a-John	1				

Health and Safety:
PPE Level(s) D

Tool Box Meeting **Time:** 0630 hours

Discussed poison ivy exposure, wearing safety vests, slips, trips and falls.

Work Performed:

Continued screening the excavated soil/debris.
Separated large scrap ad debris from piles prior to screening.
Arranged to have Seneca Meadows representative at the job site to view process at the direction of Army.
Met with Army and told we were sending samples off-site for radiation screening prior to chemical analysis.

Daily Report for SEAD-12 Removal Action

(W912DY-08-D-0003 TO #03; Job 746762)

Sampling

None.

Disposal (Use right click, update field function to total Cumulative numbers)

Loads (to Date)	Loads Today	Cum Loads	Est Tons (to Date)	Est Tons Today	Cum Est. Tons
0	0	0	0	0	0
		0			0

Delivered Material (use Table, Insert, Rows above or below to add extra spaces)

Material	Loads	Cubic Yards	Tons
Sand for Sand Bags	0		0

Prepared By: _____

Thomas C Andrews

Reviewed By: _____ Date: _____

Daily Report for SEAD-12 Removal Action
(W912DY-08-D-0003 TO #03; Job 746762)

Date	**Day**	**Weather Conditions**
Monday, August 3, 2009	Monday	Warm, Clear, Temperatures in the 70s - 80s

Personnel On-Site (use Table, Insert, Rows above or below to add extra spaces**)**
Working Hrs 0600 – 1630 hrs

Affiliation	**Position**	**Name**	**Time or Hours**
Parsons	**Site Manager**	**Tom Andrews**	**10 hours**
	Construction Manager	**Ben McAllister**	**10 hours**
St. George	**Superintendent**		**10 hours**
	Operators		**40 hours**
	Laborer		**20 hours**
	Teamsters		**20 hours**
Cabrera	**Rad Tech**	**Landon Collins**	**10 hours**
	HP	**Patti Retka**	**10 hours**
Army		**Tom Battaglia**	
		John Cleary	
Visitors	**Riccelli**	**Rich Riccelli**	
	Seneca Meadows	**Don Gentilcore**	

Equipment On-Site (use Table, Insert, Rows above or below to add extra spaces)

Type	**#**	**Type**	**#**	**Type**	**#**
Excavator	1	Dozer	1	Haul Trucks	2
Loader	1	Flat Bed Truck	0	Skid Steer	1
Cat Fork w/ bucket	0	Screening Plant	1	Water Storage	1
Generator	1	Pump	1		
Trimble Surveying	0	Dust Monitors 2x	2		
Port-a-John	1				

Health and Safety:
PPE Level(s) D

Tool Box Meeting **Time:** 0630 hours

Discussed hazards of poison ivy exposure, slips/trips/falls, and the importance of wearing safety vests

Work Performed:

Continued screening the material.
Separated large scrap and debris from piles prior to screening.
Riccelli and Seneca Meadows personnel out to view process and determine if material can be shipped to Seneca Meadows.
Ordered more roll offs for scrap and debris.

Daily Report for SEAD-12 Removal Action

(W912DY-08-D-0003 TO #03; Job 746762)

Sampling

No samples were taken.

Disposal (Use right click, update field function to total Cumulative numbers)

Loads (to Date)	Loads Today	Cum Loads	Est Tons (to Date)	Est Tons Today	Cum Est. Tons
0	0	0	0	0	0
		0			0

Delivered Material (use Table, Insert, Rows above or below to add extra spaces)

Material	Loads	Cubic Yards	Tons

Prepared By: _____

Thomas C.Andrews

Reviewed By: _____ Date: _____

Daily Report for SEAD-12 Removal Action
(W912DY-08-D-0003 TO #03; Job 746762)

Date	**Day**	**Weather Conditions**
Tuesday, August 4, 2009	Tuesday	Warm, Clear, Temperatures in the mid 70s to upper 80s, wind 5 – 15 mph

Personnel On-Site (use Table, Insert, Rows above or below to add extra spaces**)**
Working Hrs 0600 – 1630 hrs

Affiliation	**Position**	**Name**	**Time or Hours**
Parsons	**Site Manager**	**Tom Andrews**	**10 hours**
	Construction Manager	**Ben McAllister**	**10 hours**
St. George	**Superintendent**		**10 hours**
	Operators		**40 hours**
	Laborer		**20 hours**
	Teamsters		**20 hours**
Cabrera	**Rad Tech**	**Landon Collins**	**10 hours**
	HP	**Patti Retka**	**10 hours**
Army		**Tom Battaglia**	
		Steve Absolom	
		John Cleary	

Equipment On-Site (use Table, Insert, Rows above or below to add extra spaces)

Type	**#**	**Type**	**#**	**Type**	**#**
Excavator	1	Dozer	1	Haul Trucks	2
Loader	1	Flat Bed Truck	0	Skid Steer	1
Cat Fork w/ bucket	0	Screening Plant	1	Water Storage	1
Generator	1	Pump	1		
Trimble Surveying	0	Dust Monitors 2x	2		
Port-a-John	1				

Health and Safety:
PPE Level(s) D

Tool Box Meeting **Time:** 0630 hours

Discussed hazards of poison ivy exposure, slips/trips/falls, and the importance of wearing safety vests

Work Performed:

Continued screening the material.
Separated large scrap and debris from piles prior to screening.
Army requests that all boxes be dumped and scanned piece by piece for radioactivity.
Collect any radiological material and set aside in secured B-25 boxes.
Once scanned, repack non-rad pieces of scrap metal for recycle and non-rad C&D for disposal at landfill.

Sampling

No samples were taken.

Disposal (Use right click, update field function to total Cumulative numbers)

Loads (to Date)	Loads Today	Cum Loads	Est Tons (to Date)	Est Tons Today	Cum Est. Tons
0	0	0	0	0	0
		0			0

Delivered Material (use Table, Insert, Rows above or below to add extra spaces)

Material	Loads	Cubic Yards	Tons

Prepared By: _____
Ben McAllister

Reviewed By: _____ Date: _____

Daily Report for SEAD-12 Removal Action
(W912DY-08-D-0003 TO #03; Job 746762)

Date	**Day**	**Weather Conditions**
Wednesday, August 5, 2009		Cloudy cool, temperature in the 60s - 80s

Personnel On-Site (use Table, Insert, Rows above or below to add extra spaces**)**
Working Hrs 0600 – 1630 hrs

Affiliation	**Position**	**Name**	**Time or Hours**
Parsons	**Construction Manager**	**Ben McAllister**	**12 hrs**
	Site Manager	**Tom Andrews**	**10 hours**
St. George	**Superintendent**		**10 hours**
	Operators		**40 hours**
	Laborers		**20 hours**
	Teamster		**20 hours**
Cabrera	**Rad Tech**	**Landon Collins**	**10 hours**
	HP	**Patti Retka**	**10 hours**
Army		**Tom Battaglia**	
		John Cleary	

Equipment On-Site (use Table, Insert, Rows above or below to add extra spaces)

Type	**#**	**Type**	**#**	**Type**	**#**
Excavator	1	Dozer	1	Haul Trucks	2
Loader	1	Flat Bed Truck	0	Skid Steer	1
Cat Folk w/ bucket	0	Screening Plant	1	Water Storage	1
Generator	1	Pump	1		
Trimble Surveying	0	Dust Monitors 2x	2		
Port-a-John	1				

Health and Safety:
PPE Level(s) D

Tool Box Meeting **Time:** 0630 hours

Discussed hazards of poison ivy exposure, importance of wearing safety vests, and slips/trips/falls.

Work Performed:

Continued to screen the material.
Large scrap and debris were removed from piles before screening.

Sampling
Sampling activity was continued by Ben McAllister of Parsons. 22 samples remained to be collected at the end of the day.

Daily Report for SEAD-12 Removal Action
(W912DY-08-D-0003 TO #03; Job 746762)

Disposal (Use right click, update field function to total Cumulative numbers)

Loads (to Date)	Loads Today	Cum Loads	Est Tons (to Date)	Est Tons Today	Cum Est. Tons
0	0	0	0	0	0
		0			0

Delivered Material (use Table, Insert, Rows above or below to add extra spaces)

Material	Loads	Cubic Yards	Tons

Prepared By: _____
Thomas C. Andrews

Reviewed By: _____ Date: _____

Daily Report for SEAD-12 Removal Action
(W912DY-08-D-0003 TO #03; Job 746762)

Date	**Day**	**Weather Conditions**
Thursday, August 6, 2009	Thursday	Cloudy 60 - 70s, light winds

Personnel On-Site (use Table, Insert, Rows above or below to add extra spaces**)**
Working Hrs 0600 – 1630 hrs

Affiliation	**Position**	**Name**	**Time or Hours**
Parsons	**Construction Manager**	**Ben McAllister**	**12 hrs**
	Site Manager	**Tom Andrews**	**10 hours**
St. George	**Superintendent**		**10 hours**
	Operators		**40 hours**
	Laborers		**20 hours**
	Teamster		**20 hours**
Cabrera	**Rad Tech**	**Landon Collins**	**10 hours**
	HP	**Patti Retka**	**10 hours**
Visitors		**Tom Battaglia**	
		John Cleary	
		Steve Absolom	

Equipment On-Site (use Table, Insert, Rows above or below to add extra spaces)

Type	**#**	**Type**	**#**	**Type**	**#**
Excavator	1	Dozer	1	Haul Trucks	2
Loader	1	Flat Bed Truck	0	Skid Steer	1
Cat Folk w/ bucket	0	Screening Plant	1	Water Storage	1
Generator	1	Pump	1		
Trimble Surveying	0	Dust Monitors 2x	2		
Port-a-John	1				

Health and Safety:
PPE Level(s) D

Tool Box Meeting **Time:** 0630 hours

Discussed hazards of poison ivy exposure, importance of wearing safety vests, and slips/trips/falls.

Work Performed:

Oversized material screened.
Screening completed including oversized material.
Load scrap into containers with Army review.
Frisked out stackout conveyor. Demobilized from saite.
Cleaned screening plant prior to friskout.
Ordered more rolloffs for scrap and debris.

Daily Report for SEAD-12 Removal Action

(W912DY-08-D-0003 TO #03; Job 746762)

Sampling

Samples for chemical characterization collected and submitted.

Disposal (Use right click, update field function to total Cumulative numbers)

Loads (to Date)	Loads Today	Cum Loads	Est Tons (to Date)	Est Tons Today	Cum Est. Tons
0	0	0	0	0	0
		0			0

Delivered Material (use Table, Insert, Rows above or below to add extra spaces)

Material	Loads	Cubic Yards	Tons

Prepared By: _____

Thomas C. Andrews

Reviewed By: _____ Date: _____

Daily Report for SEAD-12 Removal Action
(W912DY-08-D-0003 TO #03; Job 746762)

Date Monday, August 11, 2009

Day

Weather Conditions
Partly cloudy to rainy, 60s to 80-90s
wind SSW 5 to 10 mph

Personnel On-Site (use Table, Insert, Rows above or below to add extra spaces**)**
Working Hrs 0600 – 1630 hrs

Affiliation	Position	Name	Time or Hours
Parsons	**Construction Manager**	**B. McAllister**	**12 hrs**
		T.C. Andrews	
St. George	**None**		**0 hrs**
Cabrera	**Rad Tech**	**Landon Collins**	**10 hrs**
	Rad Tech	**Patty Retka**	**10 hrs**
Army		**Tom Battaglia**	**0 hrs**
		John Cleary	**0 hrs**
		Steve Absolom	**0 hrs**

Visitors

Equipment On-Site (use Table, Insert, Rows above or below to add extra spaces)

Type	#	Type	#	Type	#
Excavator	1	Dozer	1	Haul Trucks	1
Loader	1	Flat Bed Truck	0	Skid Steer	1
Cat Folk w/ bucket		Screening Plant	0	Water Storage	1
Generator	0	Pump	1		
Trimble Surveying	0	Dust Monitors 2x	2		
Port-a-John	1				

Health and Safety:
PPE Level(s) D

Tool Box Meeting **Time:** 0630 hours

Working in slippery conditions due to rain last night and working level of skid steer bucket. Ergonomics of hand held instruments using proper handle for the Ludlum 4020

Work Performed:

Parsons instructed St. George to use the excavator and lay out the >6" material so Cabrera could scan the pile. The estimated 50cy of material was scanned by both Patty Retka and Landon Collins in both directions with no items encountered above background.
The Army representative John Cleary then started visual inspection of the scrap metal that is staged on the ground. As the inspection and scanning occurred two laborers from St. George removed any questionable items that were identified by either Cabrera or the Army. Material was segregated by metal type and any identifiable electronic components such as thermal batteries or capacitors were removed.

These items were being placed in a separate location to be transported to Building 814 for storage and identification.
At 0800, two additional 40cy roll off boxes were delivered by Riccelli trucking. These will be used to store the scanned and inspected material as it is scanned by Cabrera and inspected by the Army.
At 1200 the first of the three empty 40cy roll off boxes was filled and the second one was in the process of being filled. Less than five items were removed from the first 40 cy of scrap metal including two dials and three potential magnesium thorium alloy items.
Building 803 was cleaned out and the staged rinsing water and collected debris was moved to the storage area to be sampled for disposal.
At 1230 received approval from the Army and COE that the screening plant could be demobilized. Second 40cy roll off is 3/4 full and no additional items were identified for removal from this roll off. St George has emptied the contents of the first two roll off boxes filled on 8/6 to remove thermal batteries and capacitors. This material was already inspected by the Army and scanned for radiological levels, and the only reason for re-inspecting the material was to remove batteries and capacitors.

Sampling
Samples for disposal characterization, Analytical composition and Gross A/B along with Gamma Spec are complete with the exception of confirmation samples within the excavated area for Gross AB and Gamma Spec. These sample locations and frequencies have yet to be determined since we are waiting for analytical results to determine if further excavation is required.

Disposal (Use right click, update field function to total Cumulative numbers)

Loads (to Date)	Loads Today	Cum Loads	Est Tons (to Date)	Est Tons Today	Cum Est. Tons
0	0	0	0	0	0
		0			0

Delivered Material (use Table, Insert, Rows above or below to add extra spaces)

Material	Loads	Cubic Yards	Tons
Sand for Sand Bags	0		0

Prepared By: _____
Ben McAllister

Reviewed By: _____ Date: _____

Daily Report for SEAD-12 Removal Action
(W912DY-08-D-0003 TO #03; Job 746762)

Date Thursday, August 13, 2009

Day

Weather Conditions Party cloudy, high 80's, low humidity wind SSW 5 to 10 mph

Personnel On-Site (use Table, Insert, Rows above or below to add extra spaces**)**
Working Hrs 0600 – 1630 hrs

Affiliation	Position	Name	Time or Hours
Parsons	**Construction Manager**	**B. McAllister**	**12 hrs**
St. George	**None**		**0 hrs**
Cabrera	**Rad Tech**	**Landon Collins**	**10 hrs**
	Rad Tech	**Patty Retka**	**10 hrs**
Army		**Tom Battaglia**	**0 hrs**
		John Cleary	**0 hrs**
		Steve Absolom	**0 hrs**

Visitors

Equipment On-Site (use Table, Insert, Rows above or below to add extra spaces)

Type	#	Type	#	Type	#
Excavator	0	Dozer	0	Haul Trucks	0
Loader	0	Flat Bed Truck	0	Skid Steer	0
Cat Folk w/ bucket	0	Screening Plant	0	Water Storage	1
Generator	0	Pump	0		
Trimble Surveying	0	Dust Monitors 2x	2		
Port-a-John	0				

Health and Safety:
PPE Level(s) D

Tool Box Meeting **Time:** 0630 hours

Heat stress and hydration; Ergonomics of hand held instruments using proper handle for the Ludlum 4020

Work Performed:
Landon Collins and Patty Retka from Cabrera services are onsite to complete release survey the skidsteer and loader used yesterday.
The site was cleaned and final samples for disposal characterization were collected from the building 803 debris and the blue drum investigated yesterday.
The final confirmation floor sample from Area B collected and submitted for analytical analysis.
All rental equipment including dust monitors and survey equipment was returned and taken off rent until project resumes.

Sampling
Samples collected from Building 803 debris TCLP Metals, the blue drum TCLP Metals and the final floor sample at area B for analytical composition.

Daily Report for SEAD-12 Removal Action

(W912DY-08-D-0003 TO #03; Job 746762)

Disposal (Use right click, update field function to total Cumulative numbers)

Loads (to Date)	Loads Today	Cum Loads	Est Tons (to Date)	Est Tons Today	Cum Est. Tons
0	0	0	0	0	0
		0			0

Delivered Material (use Table, Insert, Rows above or below to add extra spaces)

Material	Loads	Cubic Yards	Tons
Sand for Sand Bags	0		0

Prepared By: _____

Ben McAllister

Reviewed By: _____ Date: _____

Daily Report for SEAD-12 Removal Action
(W912DY-08-D-0003 TO #03; Job 746762)

Date	**Day**	**Weather Conditions**
September 29, 2009	**Tuesday**	Party cloudy, Temperatures ranged from 51 to 72, wind SW 4 to 28 mph, Rain

Personnel On-Site (use Table, Insert, Rows above or below to add extra spaces**)**
Working Hrs 0630 – 1700 hrs

Affiliation	**Position**	**Name**	**Time or Hours**
Parsons	**Construction Manager**	**B. McAllister**	**10 hrs**
Parsons		**M. Pierson**	**10 hrs**
St. George	**None**		**0 hrs**
Cabrera	**Rad Tech**	**Landon Collins**	**10 hrs**
	Rad Tech	**Patty Retka**	**0 hrs**
Army		**Tom Battaglia**	**0 hrs**
		John Cleary	**0 hrs**
		Steve Absolom	**0 hrs**

Equipment On-Site (use Table, Insert, Rows above or below to add extra spaces)

Type	**#**	**Type**	**#**	**Type**	**#**
Excavator	0	Dozer	0	Haul Trucks	0
Loader	0	Flat Bed Truck	0	Skid Steer	0
Cat Folk w/ bucket	0	Screening Plant	0	Water Storage	0
Generator	0	Pump	0		
Trimble Surveying	1	Dust Monitors 2x	0		
EM31MKII	1				
Port-a-John	0				

Health and Safety:
PPE Level(s) D

Tool Box Meeting **Time:** 0630 hours

Weather Rain and lightning procedure
Work Performed:
Ben McAllister, Michael Pierson and Landon Collins onsite to collect soil samples for Radiological testing.
Samples were collected from the excavated areas A and C1.
Area B and C2 samples will be collected tomorrow after the additional material is removed from area A.
Trimble surveying equipment was setup and calibrated along with daily calibration of the 4420 Fiddler.
Samples were labeled and COC generated for offsite shipment tomorrow when the remainder of the samples are collected.

Sampling

Daily Report for SEAD-12 Removal Action

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35 soil samples from the excavation area A and C1 taken to be analyzes for Gross Alpha Beta and Gamma Spec to be submitted to General Engineering laboratories, Charleston SC.

Disposal (Use right click, update field function to total Cumulative numbers)

Loads (to Date)	Loads Today	Cum Loads	Est Tons (to Date)	Est Tons Today	Cum Est. Tons
0	0	0	0	0	0
		0			0

Delivered Material (use Table, Insert, Rows above or below to add extra spaces)

Material	Loads	Cubic Yards	Tons
			0

Prepared By: _____
Ben McAllister

Reviewed By: _____ Date: _____

Daily Report for SEAD-12 Removal Action
(W912DY-08-D-0003 TO #03; Job 746762)

Date	**Day**	**Weather Conditions**
September 30, 2009	**Wednesday**	Party cloudy, Temperatures ranged from 46 to 51, wind W 2 to 10 mph, Rain

Personnel On-Site (use Table, Insert, Rows above or below to add extra spaces**)**
Working Hrs 0630 – 1700 hrs

Affiliation	**Position**	**Name**	**Time or Hours**
Parsons	**Construction Manager**	**B. McAllister**	**10 hrs**
Parsons		**M. Pierson**	**10 hrs**
St. George	**Supervisor**	**Steve St. George**	**10 hrs**
St. George	**Operator**	**Doug Hadley**	**10 hrs**
St. George	**Laborer**	**Andrew Baker**	**10 hrs**
Cabrera	**Rad Tech**	**Landon Collins**	**10 hrs**
Army	**USACOE**	**Tom Battaglia**	**0 hrs**
		John Cleary	**0 hrs**
		Steve Absolom	**0 hrs**

Equipment On-Site (use Table, Insert, Rows above or below to add extra spaces)

Type	**#**	**Type**	**#**	**Type**	**#**
Excavator	1	Dozer	0	Haul Trucks	0
Loader	0	Flat Bed Truck	0	Skid Steer	0
Cat Folk w/ bucket	0	Screening Plant	0	Water Storage	1
Generator	0	Pump	1		
New Holland Tractor	1				
Trimble Surveying	1	Dust Monitors 2x	0		
EM31MKII	1				
Port-a-John	0				

Health and Safety:
PPE Level(s) D

Tool Box Meeting **Time:** 0630 hours

Slip trip Falls, Cold Weather work
Work Performed:
Ben McAllister, Michael Pierson and Landon Collins onsite to collect soil samples for Radiological testing.
Samples were collected from the excavated areas C1 and C2.
Trimble surveying equipment was setup and calibrated along with daily calibration of the 4420 Fiddler.
Samples were labeled and COC generated for offsite shipment tomorrow when the remainder of the samples will be collected.
St George Ent loaded and shipped 39 trucks from Riccelli trucking. This material was brought to Seneca Meadows for disposal and reuse. An estimate of 1296.66 Tons was reported from Riccelli Trucking at the end of the day.

Sampling

36 soil samples from the excavation area C1 and C2 taken to be analyzes for Gross Alpha Beta and Gamma Spec to be submitted to General Engineering laboratories, Charleston SC.

Disposal (Use right click, update field function to total Cumulative numbers)

Loads (to Date)	Loads Today	Cum Loads	Est Tons (to Date)	Est Tons Today	Cum Est. Tons
39	39	39	1295.66	1295.66	1295.66

Delivered Material (use Table, Insert, Rows above or below to add extra spaces)

Material	Loads	Cubic Yards	Tons
None			0

Prepared By: _____
Ben McAllister

Reviewed By: _____ Date: _____

Daily Report for SEAD-12 Removal Action
(W912DY-08-D-0003 TO #03; Job 746762)

Date	**Day**	**Weather Conditions**
October 01, 2009	**Thursday**	Party cloudy, Temperatures ranged from 43 to 53, wind W 1 to 10 mph, Rain

Personnel On-Site (use Table, Insert, Rows above or below to add extra spaces**)**
Working Hrs 0630 – 1700 hrs

Affiliation	**Position**	**Name**	**Time or Hours**
Parsons	**Construction Manager**	**B. McAllister**	**12 hrs**
Parsons		**M. Pierson**	**12 hrs**
St. George	**Supervisor**	**Steve St. George**	**8 hrs**
St. George	**Operator**	**Doug Hadley**	**10 hrs**
St. George	**Laborer**	**Andrew Baker**	**10 hrs**
Cabrera	**Rad Tech**	**Landon Collins**	**12 hrs**
Army	**USACOE**	**Tom Battaglia**	**1 hrs**
		John Cleary	**0 hrs**
		Steve Absolom	**1 hrs**

Equipment On-Site (use Table, Insert, Rows above or below to add extra spaces)

Type	**#**	**Type**	**#**	**Type**	**#**
Excavator	1	Dozer	0	Haul Trucks	0
Loader	0	Flat Bed Truck	0	Skid Steer	0
Cat Folk w/ bucket	0	Screening Plant	0	Water Storage	1
Generator	0	Pump	1		
New Holland Tractor	1				
Trimble Surveying	1	Dust Monitors 2x	0		
EM31MKII	1				
Port-a-John	0				

Health and Safety:
PPE Level(s) D

Tool Box Meeting **Time:** 0630 hours

Heavy equipment hand signals and high visibility PPE
Work Performed:
Ben McAllister, Michael Pierson and Landon Collins (Cabrera) are onsite to collect soil samples for Radiological testing. Seven samples were collected from the remaining excavated areas in pit C1 and pit C2. Trimble surveying equipment was setup and calibrated along with daily calibration of the 4420 Fiddler. Samples were labeled and COC generated for offsite shipment. St George services and Riccelli trucking are removing the offsite disposal material.

St George Enterprises loaded for shipment to the disposal facility 60 trucks provided by Riccelli trucking. This material was brought to Seneca Meadows for disposal. An estimated 1683.85 tons was reported by Riccelli Trucking at the end of the day.

Parsons has requested approval from the Army to bring in a off road haul truck to move the additional excavated backfill material from pit B and move backfill from the overburden/C1 pile to the pit A and pit B area. The approval of this truck will reduce the time to backfill and also reduce the disturbed area that will need to be re-vegetated after the backfill is complete. Both Army and USACOE representatives have approved the addition of the off road haul truck via telephone call and in person to Parsons Rep. Cabrera services conducted the post excavation radiological survey of the pit A area and area surrounding perimeter of pit B. An additional hot spot was identified in pit A that was excavated by hand and found to be a 6" by 3" piece of mag-thor alloy. This was removed and placed in the B-25 box currently at the site to store identified material. The area of the removal was scanned after the item was removed and found to be below background post removal.

Sampling

Seven soil samples from the excavation area C1 and C2 were collected and will be submitted for analyzes for Gross Alpha Beta content and Gamma Spec. The analysis of these samples will be provided by General Engineering Laboratories, Charleston SC.

Disposal
Army Representatives approved the removal of the first of 8 roll off containers containing recyclable scrap metal from the excavation and subsequent screening operation. Today the first of the 8 containers was removed from the site by Luffman Scrap metal. This 25cy container full of ferrous scrap metal and mixed stainless steel was removed. The representative from Luffman gave a preliminary appraisal of the dirty aluminum and mixed metal of between .34 and .22 cents per pound due to the presence of other metals within the aluminum. This preliminary appraisal was conveyed by telephone to Army representatives, who provided the verbal the approval to remove the remainder of the scrap aluminum and C&D debris tomorrow.

Disposal (Use right click, update field function to total Cumulative numbers)

1 container of ferrous recyclable metal 25cy.

Loads (to Date)	Loads Today	Cumulative Loads	Est. Tons (to Date)	Est Tons Today	Cumulative Est. Tons
99	60	99	2979.51	1683.85	2979.51

Delivered Material (use Table, Insert, Rows above or below to add extra spaces)

Material	Loads	Cubic Yards	Tons
None			0

Prepared By: _____
Ben McAllister
Reviewed By: _____ Date: _____

Daily Report for SEAD-12 Removal Action
(W912DY-08-D-0003 TO #03; Job 746762)

Date	**Day**	**Weather Conditions**
October 02, 2009	**Friday**	Party cloudy, Temperatures ranged from 44 to 59, wind S 2 to 25 mph, Rain

Personnel On-Site (use Table, Insert, Rows above or below to add extra spaces**)**
Working Hrs 0600 – 1800 hrs

Affiliation	**Position**	**Name**	**Time or Hours**
Parsons	**Construction Manager**	**B. McAllister**	**12 hrs**
Parsons		**M. Pierson**	**12 hrs**
St. George	**Supervisor**	**Jason Michael**	**10 hrs**
St. George	**Operator**	**Doug Hadley**	**10 hrs**
St. George	**Laborer**	**Andrew Baker**	**10 hrs**
Cabrera	**Rad Tech**	**Landon Collins**	**12 hrs**
Army	**USACOE**	**Tom Battaglia**	**1 hrs**
		John Cleary	**0 hrs**
		Steve Absolom	**1 hrs**

Equipment On-Site (use Table, Insert, Rows above or below to add extra spaces)

Type	**#**	**Type**	**#**	**Type**	**#**
Excavator	1	Dozer	0	Haul Trucks	1
Loader	0	Flat Bed Truck	0	Skid Steer	0
Cat Folk w/ bucket	0	Screening Plant	0	Water Storage	1
Generator	0	Pump	1	Komatsu Dozer	1
New Holland Tractor	1			Komatsu Haul truck	1
Trimble Surveying	1	Dust Monitors 2x	0		
EM31MKII	1				
Port-a-John	1				

Health and Safety:
PPE Level(s) D

Tool Box Meeting **Time:** 0600 hours

Poison Ivy Decon procedures

Work Performed:
St George Enterprises loaded for shipment to the disposal facility 30 trucks provided by Riccelli trucking. An estimated 1000 tons was loaded and hauled offsite. Actual totals will be provided Monday by Riccelli Trucking

Riccelli trucking also hauled off site one roll off container of C&D and three of the five remaining roll off containers of recyclable metal. The recyclable metal was brought to Luffmann scrap metal of Seneca Falls, also hauled offsite by Luffmann srcap metal were two additional roll off containers of aluminum recyclable metal.

Mobilized to the site was one Komatsu off road haul truck to move the overburden backfill material to pit A and B and one Komatsu dozer to place the backfill. The Army is comfortable with overburden backfill results so that backfilling can be completed if regulatory approval is not received by Monday.

Sampling

67 soil samples from the excavation area pit A, B, C1 and C2 were submitted for analysis for Gross Alpha Beta content and Gamma Spec. The analysis of these samples will be provided by General Engineering Laboratories, Charleston SC.

Scanning
Cabrera scanned the remainder of the C1and C2 excavation and the entire lay down area with the Fidler 4420 in conjunction with the Pro XRS GPS to create a figure of the scanned area. One Hot spot was identified in the C2 excavation where a radium dial was found in the bottom of the C2 excavation. This dial was removed by Cabrera and placed in the B-25 box for storage. The area where the dial was removed was than rescanned after the removal and found to be at or below background levels.

Disposal (Use right click, update field function to total Cumulative numbers)

6 containers of aluminum and 1 container of C&D

Loads (to Date)	Loads Today	Cumulative Loads
99	31	130

Est. Tons (to Date)	Est Tons Today	Cumulative Est. Tons
2979.51	1000 Actual weight updated on Monday	3979.51

Delivered Material (use Table, Insert, Rows above or below to add extra spaces)

Material	Loads	Cubic Yards	Tons
None			0

Prepared By: _____
Ben McAllister

Reviewed By: _____ Date: _____

Daily Report for SEAD-12 Removal Action
(W912DY-08-D-0003 TO #03; Job 746762)

Date	**Day**	**Weather Conditions**
October 05, 2009	**Monday**	Party cloudy, Temperatures ranged from 48 to 63, wind SW 2 to 15 mph, Rain

Personnel On-Site (use Table, Insert, Rows above or below to add extra spaces**)**
Working Hrs 0600 – 1800 hrs

Affiliation	**Position**	**Name**	**Time or Hours**
Parsons	**Construction Manager**	**B. McAllister**	**12 hrs**
Parsons		**M. Pierson**	**12 hrs**
Parsons	**Tech III**	**Jinn Gilchrist**	**10 hrs**
Parsons	**Tech II**	**Lindy Swanson**	**10 hrs**
St. George	**Supervisor**	**Jason Michael**	**8 hrs**
St. George	**Operator**	**Doug Hadley**	**8 hrs**
St. George	**Laborer**	**Andrew Baker**	**8 hrs**
Cabrera	**Rad Tech**	**Landon Collins**	**10 hrs**
Army	**USACOE**	**Tom Battaglia**	**1 hrs**
		John Cleary	**0 hrs**
		Steve Absolom	**0 hrs**

Equipment On-Site (use Table, Insert, Rows above or below to add extra spaces)

Type	**#**	**Type**	**#**	**Type**	**#**
Excavator	1	Komatsu Dozer small	1	Haul Trucks	1
Loader	0	Flat Bed Truck	0	Skid Steer	0
Cat Folk w/ bucket	0	Screening Plant	0	Water Storage	1
Generator	0	Pump	1	Komatsu Dozer large	1
New Holland Tractor	1				
Trimble Surveying	1				
EM31MKII	1				
Port-a-John	1				

Health and Safety:
PPE Level(s) D

Tool Box Meeting **Time:** 0600 hours
Avoiding Slip Trip Falls

Work Performed:
St George Enterprises backfilled by grading area A that was approved to backfill by USACOE. The Parsons dig team identified an area in the C2 area northeastern grid J3 with buried metal debris that could not remove by hand. When the excavator was brought in to remove this item upon removal an additional disposal pit was found that was separated from the C2 excavation. This additional area was excavated with the excavator and 6 truck loads of material estimated at 70 cy were brought to the lay down area and placed on plastic. The additional area measured 20X30 and is approximately 7 feet deep. Upon discovery of this additional area USACOE was notified and the removal and stockpiling was approved. As part of the approval USACOE rep requested that additional geophysical surveys of all excavated area be conducted before any more areas are backfilled. St George Enterprises agreed to take Tuesday off to

facilitate the additional survey of the excavated area and will work Wednesday, Thursday Friday 10 hours. In addition to this removal Em-31 Geophysical survey was conducted on the C2 area to identify any other disposal areas that may be located within the C2 area. Geophysical survey was conducted over the unexcavated area of C2 and the 25 feet of perimeter surrounding the excavation. During this survey two additional areas to the west in grids J2 and I2 were identified in the geophysical survey. These areas will be investigated tomorrow with the excavator and one St George operator.

Sampling
3 soil samples from the additional excavation area in the northeastern area of pit C2 were submitted for analysis for TCL-VOC, TCL-SVOC, Pets PCB, TAL-Metals and Gross Alpha Beta content and Gamma Spec. The analysis of these samples will be provided by Columbia Analytical Services for the analytical analysis and General Engineering Laboratories, Charleston SC for the radiological analysis.

Scanning
Cabrera scanned the remainder of the haul roads and additional C2 excavation area with the Ludlum 4420 in conjunction with the Pro XRS GPS to create a figure of the scanned area. One hot spot was identified in the material excavated from the additional C2 excavation. The source of the hot spot was removed by Cabrera and placed in the B-25 box for storage and future disposal. The remainder of the material will be scanned when the additional excavated material is laid out by St. George to be scanned by Cabrera.

Disposal (Use right click, update field function to total Cumulative numbers)

1 container of recyclable metal removed by Riccelli and brought to Luffmann Scrap Metal.

Loads (to Date)	Loads Today	Cumulative Loads
	0	132

Est. Tons (to Date)	Est Tons Today	Cumulative Est. Tons
	0	3957.51
	Corrected from Friday	Corrected from Friday

Delivered Material (use Table, Insert, Rows above or below to add extra spaces)

Material	Loads	Cubic Yards	Tons
None			0

Prepared By: _____
Ben McAllister

Reviewed By: _____ Date: _____

Daily Report for SEAD-12 Removal Action
(W912DY-08-D-0003 TO #03; Job 746762)

Date	**Day**	**Weather Conditions**
October 06, 2009	**Tuesday**	Party cloudy, Temperatures ranged from 43 to 76, wind S 1 to 25 mph, Rain

Personnel On-Site (use Table, Insert, Rows above or below to add extra spaces**)**
Working Hrs 0600 – 1800 hrs

Affiliation	**Position**	**Name**	**Time or Hours**
Parsons	**Construction Manager**	**B. McAllister**	**12 hrs**
Parsons		**M. Pierson**	**12 hrs**
Parsons	**Tech III**	**Jinn Gilchrist**	**10 hrs**
Parsons	**Tech II**	**Lindy Swanson**	**10 hrs**
St. George	**Supervisor**	**Jason Michael**	**8 hrs**
St. George	**Operator**		**0 hrs**
St. George	**Laborer**		**0 hrs**
Cabrera	**Rad Tech**	**Landon Collins**	**10 hrs**
Army	**USACOE**	**Tom Battaglia**	**1 hrs**
		John Cleary	**0 hrs**
		Steve Absolom	**0 hrs**

Equipment On-Site (use Table, Insert, Rows above or below to add extra spaces)

Type	**#**	**Type**	**#**	**Type**	**#**
Excavator	1	Komatsu Dozer small	1	Haul Trucks	1
Loader	0	Flat Bed Truck	0	Skid Steer	0
Cat Folk w/ bucket	0	Screening Plant	0	Water Storage	1
Generator	0	Pump	1	Komatsu Dozer large	1
New Holland Tractor	1				
Trimble Surveying	1				
EM31MKII	1				
Port-a-John	1				

Health and Safety:
PPE Level(s) D

Tool Box Meeting **Time:** 0600 hours
Avoiding repetitive motion injuries

Work Performed:
With approval of USACOE the two additional areas identified in the previous days geophysical survey to the southwest of area C2 in grid J2 and I2 were excavated This additional area was removed with the excavator and the 20 truck loads of material estimated at 300 cy were brought to the lay down area and placed on plastic. Upon discovery of this additional area USACOE was notified and the removal and stockpiling was approved. St George Enterprises agreed to take Wednesday off to facilitate the additional survey of the excavated area and will work Thursday Friday 10 hours. In addition to this removal Em-31 Geophysical survey was conducted on the C1 area to identify any other disposal areas that may be located within the C1 area.

Daily Report for SEAD-12 Removal Action

(W912DY-08-D-0003 TO #03; Job 746762)

Sampling

5 soil samples from the additional excavation area in the Southwestern area of pit C2 were submitted for analysis for TCL-VOC, TCL-SVOC, Pets PCB, TAL-Metals and Gross Alpha Beta content and Gamma Spec. The analysis of these samples will be provided by Columbia Analytical Services for the analytical analysis and General Engineering Laboratories, Charleston SC for the radiological analysis.

Scanning

Cabrera scanned the additional C2 excavation area grid J2 and I2 with the Ludlum 4420 in conjunction with the Pro XRS GPS to create a figure of the scanned area. Material with elevated readings was identified in the excavated material from the southwest J2, I2 area of the C2 excavation. This material was brought to the lay down area to be scanned and hand sorted by Parsons dig team and Cabrera on Thursday.

Mag and Dig

The Parsons dig team removed surface and subsurface metal from 1 acre of the screening plant area and removed any metal that was identified. The team also checked the additional C2 areas for remaining metal before the excavator was moved from the site.

Geophysical Data Collection

Parsons collected EM-31 geophysical data over the entire C1 area consisting of an area 300 by 150 feet. This data was corrected for GPS lag and time corrected and provided to Parsons Geophysicist to process and map.

Disposal (Use right click, update field function to total Cumulative numbers)

1 container of recyclable metal removed by Riccelli and brought to Luffmann Scrap Metal.

Loads (to Date)	Loads Today	Cumulative Loads
	0	132

Est. Tons (to Date)	Est Tons Today	Cumulative Est. Tons
	0	3957.51

Delivered Material (use Table, Insert, Rows above or below to add extra spaces)

Material	Loads	Cubic Yards	Tons
None			0

Prepared By: _____

Ben McAllister

Reviewed By: _____ Date: _____

Daily Report for SEAD-12 Removal Action
(W912DY-08-D-0003 TO #03; Job 746762)

Date	**Day**	**Weather Conditions**
October 07, 2009	**Wednesday**	Party cloudy, Temperatures ranged from 50 to 72, wind SW 4 to 28 mph, Rain

Personnel On-Site (use Table, Insert, Rows above or below to add extra spaces**)**
Working Hrs 0600 – 1800 hrs

Affiliation	**Position**	**Name**	**Time or Hours**
Parsons	**Construction Manager**	**B. McAllister**	**12 hrs**
Parsons		**M. Pierson**	**12 hrs**
Parsons	**Tech III**	**Jinn Gilchrist**	**10 hrs**
Parsons	**Tech II**	**Lindy Swanson**	**10 hrs**
St. George	**Supervisor**	**Jason Michael**	**0 hrs**
St. George	**Operator**		**0 hrs**
St. George	**Laborer**		**0 hrs**
Cabrera	**Rad Tech**	**Landon Collins**	**8 hrs**
Army	**USACOE**	**Tom Battaglia**	**1 hrs**
		John Cleary	**0 hrs**
		Steve Absolom	**0 hrs**

Equipment On-Site (use Table, Insert, Rows above or below to add extra spaces)

Type	**#**	**Type**	**#**	**Type**	**#**
Excavator	1	Komatsu Dozer small	1	Haul Trucks	1
Loader	0	Flat Bed Truck	0	Skid Steer	0
Cat Folk w/ bucket	0	Screening Plant	0	Water Storage	1
Generator	0	Pump	1	Komatsu Dozer large	1
New Holland Tractor	1				
Trimble Surveying	1				
EM31MKII	1				
Port-a-John	1				

Health and Safety:
PPE Level(s) D

Tool Box Meeting **Time:** 0700 hours
Safety Glasses

Work Performed:
Parsons completed collection of EM-31 Geophysical data in the excavated area and pick up data gaps from previous surveys. Samples were collected from Grid I2 and J2 the additional area excavated to the SW of C2. The area outside the excavated area was gridded out for upcoming EM-31 geophysical survey. The dig team completed .5 acres of surface metal removal and moved all removed items to the staging area to be scanned by Cabrera Services.
Cabrera Services scanned with the Ludlum 4420 the remainder of the I2 and J2 grids with no readings above background detected.

Sampling

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Five samples from the I2 and J2 area were collected for chemical analysis, three sidewall samples, one floor sample and one perimeter; these samples were shipped to CAS for expedited turnaround. Samples from the I2, J2 and I3 area were shipped to General Engineering Labs for Gross alpha beta and gamma spec analysis. Along with these samples, five samples that had previously arrived at General engineering broken were recollected and shipped to General Engineering labs for Gross Alpha Beta and Gamma Spec analysis.

Disposal (Use right click, update field function to total Cumulative numbers)

None Today.

Loads (to Date)	Loads Today	Cumulative Loads	Est. Tons (to Date)	Est Tons Today	Cumulative Est. Tons
	0	132		0	3957.51

Delivered Material (use Table, Insert, Rows above or below to add extra spaces)

Material	Loads	Cubic Yards	Tons
None			0

Prepared By: _____
Ben McAllister

Reviewed By: _____ Date: _____

Daily Report for SEAD-12 Removal Action
(W912DY-08-D-0003 TO #03; Job 746762)

Date	**Day**	**Weather Conditions**
October 08, 2009	**Thursday**	Party cloudy, Temperatures ranged from 43 to 70, wind S 3 to 19 mph, Rain

Personnel On-Site (use Table, Insert, Rows above or below to add extra spaces**)**
Working Hrs 0600 – 1800 hrs

Affiliation	**Position**	**Name**	**Time or Hours**
Parsons	**Construction Manager**	**B. McAllister**	**12 hrs**
Parsons		**M. Pierson**	**12 hrs**
Parsons	**Tech III**	**Jinn Gilchrist**	**10 hrs**
Parsons	**Tech II**	**Lindy Swanson**	**10 hrs**
St. George	**Supervisor**	**Jason Michael**	**10 hrs**
St. George	**Operator**	**Paul St.George**	**10 hrs**
St. George	**Operator**	**Bill Cauldwell**	**10 hrs**
St. George	**Laborer**	**Andrew Baker**	**10 hrs**
St. George	**Laborer**	**Matt Lowry**	**10 hrs**
Cabrera	**Rad Tech**	**Landon Collins**	**10 hrs**
Army	**USACOE**	**Tom Battaglia**	**2 hrs**
		John Cleary	**0 hrs**
		Steve Absolom	**0 hrs**

Equipment On-Site (use Table, Insert, Rows above or below to add extra spaces)

Type	**#**	**Type**	**#**	**Type**	**#**
Excavator Cat 325	1	Komatsu Dozer small	1	Haul Trucks Cat 528	1
Loader	0	Flat Bed Truck	0	Skid Steer Komatsu	1
Cat Folk w/ bucket	0	Screening Plant	0	Water Storage	1
Generator	0	Pump	1	Komatsu Dozer large	1
New Holland Tractor	1	Trimble Surveying R7	1	EM31MKII	1

Health and Safety:
PPE Level(s) D

Tool Box Meeting **Time:** 0700 hours
Frisk out procedure with GM

Work Performed:
In addition to the collection of geophysical data, 11 truckloads of material were shipped to the disposal facility. The material was loaded by St. George Enterprises into trucks provided by Riccelli trucking. The estimated 370 cy of material removed from area of Pit C2 in grids I2, J2 and J3 was laid out in the staging area in 8" lifts and scanned by Cabrera Services and Parsons dig team to remove debris.

Disposal
An additional 5 feet of the northern wall of the Pit B excavation was removed and brought to the staging area to be loaded out to the disposal facility. This material was removed based on the sample results of the perimeter sample S12EXPR-O-8-04 analyzed for PCBs. A result of 189 ug/Kg was returned from the lab that is 89.0 ug/Kg above the NYSDEC standard for Unrestricted Use. This material was added to the

staged area B material being loaded out to the disposal facility from the first 5 foot removal on the northern wall of area B

Geophysical Investigation
Parsons performed geophysical data collection on 2.5 acres of the additional area located outside the previously identified excavation area of SEAD 12. The data are being collected on 10 foot lane spacing using the Geonics EM-31 electromagnetic detector being operated in Vertical dipole mode. The additional data are being collected to identify potential anomalies that were not identified in the original 1996 survey.

The geophysical investigation of the excavated area has identified an additional area of investigation to the south east of the original Area A excavation area within the boundaries of the previously identified removal. When this area was investigated it was found be construction debris, fence posts, concrete and a well rusted chain link fence that had been previously buried in this area. At the time the material was removed USACOE Rep was informed and requested that the material along with associated construction debris be brought to the staging area and separated from the remainder of the C2/B material being stored and sorted there. The fence posts and concrete was removed from the overlying soil and the remainder of the material was staged in a pile in the lay down area.

Scanning and Sorting of Area C2 material
Cabrera Services in conjunction with Parsons dig team and St. George personnel scanned and sorted debris from the J2, J3 and I2 material removed from the Pit C2 area on Tuesday. The material was pushed out on plastic in the lay down area and all debris hand sorted to remove items identified by Cabrera Services as having radiological readings above background. Any items identified by Cabrera were moved to the B25 box for disposal and all other debris that was removed during the hand sort was laid out on plastic to be inspected by the Army when the scanning and sorting of this material is complete.

Cabrera Services scanned with the Ludlum to identify above background material while Parsons and St George personnel used hand shovels and the skid steer to remove the remaining debris from the laid out material. All recyclable metal was removed and sorted from the non recyclable trash in the lay out area.

Sampling.
No samples collected today

Disposal (Use right click, update field function to total Cumulative numbers)

Loads (to Date)	**Loads Today**	**Cumulative Loads**
132	11	143

Est. Tons (to Date)	**Est Tons Today**	**Cumulative Est. Tons**
3957.51	300	4257.51
	This will be updated tomorrow	

Delivered Material (use Table, Insert, Rows above or below to add extra spaces)

Material	Loads	Cubic Yards	Tons
None			0

Prepared By: _____
Ben McAllister

Reviewed By: _____ Date: _____

Daily Report for SEAD-12 Removal Action
(W912DY-08-D-0003 TO #03; Job 746762)

Date	**Day**	**Weather Conditions**
October 09, 2009	**Friday**	Party cloudy, Temperatures ranged from 51 to 59, wind S 0 to 15 mph, Rain

Personnel On-Site (use Table, Insert, Rows above or below to add extra spaces**)**
Working Hrs 0600 – 1530 hrs

Affiliation	**Position**	**Name**	**Time or Hours**
Parsons	**Construction Manager**	**B. McAllister**	**12 hrs**
Parsons		**M. Pierson**	**10 hrs**
Parsons	**Tech III**	**Jinn Gilchrist**	**8 hrs**
Parsons	**Tech II**	**Lindy Swanson**	**8 hrs**
St. George	**Supervisor**	**Jason Michael**	**8 hrs**
St. George	**Operator**	**Paul St.George**	**8 hrs**
St. George	**Operator**	**Bill Cauldwell**	**8 hrs**
St. George	**Laborer**	**Andrew Baker**	**8 hrs**
St. George	**Laborer**	**Matt Lowry**	**8 hrs**
Cabrera	**Rad Tech**	**Landon Collins**	**8 hrs**
Army	**USACOE**	**Tom Battaglia**	**0 hrs**
		John Cleary	**0 hrs**
		Steve Absolom	**0 hrs**

Equipment On-Site (use Table, Insert, Rows above or below to add extra spaces)

Type	**#**	**Type**	**#**	**Type**	**#**
Excavator Cat 325	1	Komatsu Dozer small	1	Haul Trucks Cat 528	1
Loader	0	Flat Bed Truck	0	Skid Steer Komatsu	1
Cat Folk w/ bucket	0	Screening Plant	0	Water Storage	1
Generator	0	Pump	0	Komatsu Dozer large	1
New Holland Tractor	0	Trimble Surveying R7	1	EM31MKII	1

Health and Safety:
PPE Level(s) D

Tool Box Meeting **Time:** 0700 hours
Proper handling and storage of TLD badges

Work Performed:
In addition to the collection of geophysical data 4 truckloads of material was shipped to the disposal facility. The material was loaded by St. George Enterprises into trucks provided by Riccelli trucking.

The remaining 170 cy of material removed from area C2 in grids I2, J2 and J3 was laid out in the staging area in 8" lifts and scanned by Cabrera services and Parsons dig team to remove debris.

Disposal
4 trucks from Riccelli were loaded out with the remainder of the Pit B excavated material from yesterday

Geophysical Investigation
Parsons performed geophysical data collection on 4.5 acres of the additional area located outside the previously identified excavated area of SEAD 12. This data is being collected on 10 foot lane spacing using the Geonics EM-31 electromagnetic detector being operated in Vertical dipole mode. This additional data is being collected to identify potential anomalies that were not identified in the original 1996 survey.

The geophysical investigation of the excavated area has identified an additional area of investigation to the south east of the original Area A excavation area within the boundaries of the previously identified removal.

Individual targets from the Geophysical mapping in the excavated area were laid out to be investigated on Monday

Scanning and Sorting of Area C2 material
Cabrera Services in conjunction with Parsons dig team and St. George personnel scanned and sorted debris from the J2, J3 and I2 material removed from C2 on Tuesday. The material was pushed out on plastic in the lay down area and all debris hand sorted to remove items identified by Cabrera services as having readings above background. Any items identified by Cabrera were moved to the B25 box for disposal and all other debris that was removed during the hand sort was laid out on plastic to be inspected by the Army when the scanning and sorting of this material is complete.

Cabrera Services scanned with the Ludlum to identify above background material while Parsons and St George personnel used hand shovels and the skid steer to remove the remaining debris from the laid out material. All recyclable metal was removed and sorted from the non recyclable trash in the lay out area.

Sampling.
Two samples for PCB analysis method 8082 were submitted to CAS from the northern wall of the Pit B excavation. This area had an additional 5 feet of material removed yesterday to capture the material with elevated PCB results returned from the lab..

Disposal (Use right click, update field function to total Cumulative numbers)

Loads (to Date)	Loads Today	Cumulative Loads	Est. Tons (to Date)	Est Tons Today	Cumulative Est. Tons
143	4	147	4257.51	120	4377.51

Delivered Material (use Table, Insert, Rows above or below to add extra spaces)

Material	Loads	Cubic Yards	Tons
None			0

Prepared By:

Ben McAllister

Reviewed By: _____ Date: _____

Daily Report for SEAD-12 Removal Action
(W912DY-08-D-0003 TO #03; Job 746762)

Date	**Day**	**Weather Conditions**
October 12, 2009	**Monday**	Party cloudy, Temperatures ranged from 32 to 51, wind S 0 to 16 mph, Rain

Personnel On-Site (use Table, Insert, Rows above or below to add extra spaces**)**
Working Hrs 0600 – 1800 hrs

Affiliation	**Position**	**Name**	**Time or Hours**
Parsons	**Construction Manager**	**B. McAllister**	**12 hrs**
Parsons	**Tech III**	**Jim Gilchrist**	**10 hrs**
Parsons	**Tech II**	**Lindy Swanson**	**10 hrs**
St. George	**Supervisor**	**Jason Michael**	**10 hrs**
St. George	**Operator**	**Bill Cauldwell**	**10 hrs**
St. George	**Laborer**	**Andrew Baker**	**10 hrs**
St. George	**Laborer**	**Matt Lowry**	**10 hrs**
Cabrera	**Rad Tech**	**Landon Collins**	**10 hrs**
Army	**USACOE**	**Tom Battaglia**	**0 hrs**
		John Cleary	**0 hrs**
		Steve Absolom	**0 hrs**

Equipment On-Site (use Table, Insert, Rows above or below to add extra spaces)

Type	**#**	**Type**	**#**	**Type**	**#**
Excavator Cat 325	1	Komatsu Dozer small	1	Haul Trucks Cat 528	1
Loader	0	Flat Bed Truck	0	Skid Steer Komatsu	1
Cat Folk w/ bucket	0	Screening Plant	0	Water Storage	1
Generator	0	Pump	1	Komatsu Dozer large	1
New Holland Tractor	0	Trimble Surveying R7	1	EM31MKII	1

Health and Safety:
PPE Level(s) D

Tool Box Meeting **Time:** 0700 hours
Safe work procedures using hand tools

Work Performed:
Material from the additional C2 area at anomaly numbers P2, P3, P4, P5 was laid out in the staging area in 8" lifts and scanned by Cabrera services and Parsons dig team to remove debris. Military related debris was sorted from construction debris and laid out for inspection by the Army on Tuesday. The additional area excavated was surveyed for volume and elevation coordinates were provided to the office for sample quantity and volume estimation.

Disposal
None Today

Geophysical Investigation

Individual targets from the Geophysical mapping P2, P3, P4, P5 were investigated. In this additional excavation military related debris was removed from three of the four areas investigated and construction debris was removed from the fourth. The USACOE rep was informed of the additional excavation that was taking place in grids J1, J2, K1and K2. Parsons was instructed to continue the removal and take the debris to the lay down area to be sorted and scanned. This material was excavated with the overburden stockpiled on site and five truckloads of debris taken to the lay down area.

Scanning and Sorting of Area C2 material

Cabrera Services in conjunction with Parsons dig team and St. George personnel scanned and sorted debris from the J1, J2, K11, K2 grids removed from the C2 additional excavation. The material was pushed out on plastic in the lay down area and all debris hand sorted to remove items identified by Cabrera services as having readings above background. Any items identified by Cabrera were moved to the B25 box for disposal and all other debris that was removed during the hand sort was laid out on plastic to be inspected by the Army when the scanning and sorting of this material is complete.

Cabrera Services scanned with the Ludlum 4420 to identify above background material while Parsons and St George personnel used hand shovels and the skid steer to remove the remaining debris from the laid out material. All recyclable metal was removed and sorted from the non recyclable trash in the lay out area.

Sampling.

No Samples collected today

Disposal (Use right click, update field function to total Cumulative numbers)

Loads (to Date)	**Loads Today**	**Cumulative Loads**	**Est. Tons (to Date)**	**Est Tons Today**	**Cumulative Est. Tons**
143	None	147	4257.51	None	

Delivered Material (use Table, Insert, Rows above or below to add extra spaces)

Material	Loads	Cubic Yards	Tons
None			0

Prepared By: _____
Ben McAllister

Reviewed By: _____ Date: _____

Daily Report for SEAD-12 Removal Action
(W912DY-08-D-0003 TO #03; Job 746762)

Date	**Day**	**Weather Conditions**
October 13, 2009	**Tuesday**	Party cloudy, Temperatures ranged from 40 to 50, wind SW 1 to 22 mph, Rain

Personnel On-Site (use Table, Insert, Rows above or below to add extra spaces**)**
Working Hrs 0600 – 1800 hrs

Affiliation	**Position**	**Name**	**Time or Hours**
Parsons	**Construction Manager**	**B. McAllister**	**12 hrs**
Parsons	**Tech III**	**Jim Gilchrist**	**10 hrs**
Parsons	**Tech II**	**Lindy Swanson**	**10 hrs**
St. George	**Supervisor**	**Jason Michael**	**10 hrs**
St. George	**Operator**	**Bill Cauldwell**	**10 hrs**
St. George	**Laborer**	**Andrew Baker**	**10 hrs**
St. George	**Laborer**	**Matt Lowry**	**10 hrs**
Cabrera	**Rad Tech**	**Landon Collins**	**10 hrs**
Army	**USACOE**	**Tom Battaglia**	**0 hrs**
		John Cleary	**6 hrs**
		Steve Absolom	**0 hrs**

Equipment On-Site (use Table, Insert, Rows above or below to add extra spaces)

Type	**#**	**Type**	**#**	**Type**	**#**
Excavator Cat 325	1	Komatsu Dozer small	1	Haul Trucks Cat 528	1
Loader	0	Flat Bed Truck	0	Skid Steer Komatsu	1
Cat Folk w/ bucket	0	Screening Plant	0	Water Storage	1
Generator	0	Pump	1	Komatsu Dozer large	1
New Holland Tractor	0	Trimble Surveying R7	1	EM31MKII	1

Health and Safety:
PPE Level(s) D

Tool Box Meeting **Time:** 0700 hours
Cold Work Procedures

Work Performed:
Material from the additional C2 area at anomaly numbers P2 to S3 was laid out in the staging area in 8" lifts and scanned by Cabrera Services and Parsons dig team to remove debris. Military related debris was sorted from construction debris and laid out for inspection by the Army. The additional area excavated was surveyed for volume and elevation coordinates were provided to the office for sample quantity and volume estimation. Material from the overburden stockpile was staged outside the C2 and B excavations to expedite backfilling and open the area under the stockpile for geophysical data collection.

Disposal
None Today

Geophysical Investigation

Individual targets from the Geophysical mapping P2 to S3 were investigated. In this additional excavation military related debris was removed from the excavated area and moved to the lay down area. The USACOE rep was informed of the additional excavation that was taking place in grids J4, J3, I4 and I3. Parsons was instructed to continue the removal and take the debris to the lay down area to be sorted and scanned. This material was excavated with the overburden stockpiled on site and 6 truckloads of debris taken to the lay down area to be sorted and scanned.

Scanning and Sorting of Area C2 material
Cabrera Services in conjunction with Parsons dig team and St. George personnel scanned and sorted debris from the J4, J3, I4 and I3 grids removed from the C2 additional excavation. The material was pushed out on plastic in the lay down area and all debris hand sorted to remove items identified by Cabrera services as having readings above background. Any items identified by Cabrera were moved to the B25 box for disposal and all other debris that was removed during the hand sort was laid out on plastic to be inspected by the Army when the scanning and sorting of this material is complete. Army Rep John Cleary was onsite to provide over site of the scrap metal sorting. A 40 cy roll off container was filled with the removed scrap metal and is ready to be taken off site.

Cabrera Services scanned with the Ludlum 4420 to identify above background material while Parsons and St George personnel used hand shovels and the skid steer to remove the remaining debris from the laid out material. All recyclable metal was removed and sorted from the non recyclable trash in the lay out area.

Sampling.

No Samples collected today

Disposal (Use right click, update field function to total Cumulative numbers)

Loads (to Date)	Loads Today	Cumulative Loads	Est. Tons (to Date)	Est Tons Today	Cumulative Est. Tons
147	None	147	4257.51	None	4448.79 Updated Total

Delivered Material (use Table, Insert, Rows above or below to add extra spaces)

Material	Loads	Cubic Yards	Tons
None			0

Prepared By: _____
Ben McAllister

Reviewed By: _____ Date: _____

Daily Report for SEAD-12 Removal Action
(W912DY-08-D-0003 TO #03; Job 746762)

Date	**Day**	**Weather Conditions**
October 14, 2009	**Wednesday**	Party cloudy, Temperatures ranged from 31 to 47, wind N 0 to 13 mph, Rain

Personnel On-Site (use Table, Insert, Rows above or below to add extra spaces**)**
Working Hrs 0600 – 1800 hrs

Affiliation	**Position**	**Name**	**Time or Hours**
Parsons	**Construction Manager**	**B. McAllister**	**12 hrs**
Parsons	**Tech III**	**Jim Gilchrist**	**10 hrs**
Parsons	**Tech II**	**Lindy Swanson**	**10 hrs**
St. George	**Supervisor**	**Jason Michael**	**10 hrs**
St. George	**Operator**	**Bill Cauldwell**	**10 hrs**
St. George	**Laborer**	**Andrew Baker**	**10 hrs**
St. George	**Laborer**	**Matt Lowry**	**10 hrs**
Cabrera	**Rad Tech**	**Landon Collins**	**10 hrs**
Army	**USACOE**	**Tom Battaglia**	**1 hrs**
		John Cleary	**6 hrs**
		Steve Absolom	**0 hrs**

Equipment On-Site (use Table, Insert, Rows above or below to add extra spaces)

Type	**#**	**Type**	**#**	**Type**	**#**
Excavator Cat 325	1	Komatsu Dozer small	1	Haul Trucks Cat 528	1
Loader	0	Flat Bed Truck	0	Skid Steer Komatsu	1
Cat Folk w/ bucket	0	Screening Plant	0	Water Storage	1
Generator	0	Pump	1	Komatsu Dozer large	1
New Holland Tractor	0	Trimble Surveying R7	1	EM31MKII	1

Health and Safety:
PPE Level(s) D

Tool Box Meeting **Time:** 0700 hours
Cold Work Procedures

Work Performed:
Material from the additional C2 area at anomaly numbers P2 to S3 was laid out in the staging area in 8" lifts and scanned by Cabrera Services and Parsons dig team to remove debris. Military related debris was sorted from construction debris and laid out for inspection by the Army. The additional area excavated was surveyed for volume and elevation coordinates were provided to the office for sample quantity and volume estimation. Material from the overburden stockpile was staged outside the C2 and B excavations to expedite backfilling and open the area under the stockpile for geophysical data collection.

Disposal
A second water storage tank was brought in to transfer the stored ground water and move the current water storage tank out of the geophysical investigation area. The analytical results of the sampled water have been received and will be provided to Romulus water dept for possible disposal.

Geophysical Investigation
Geophysical targets S5, S6, S7 were investigated and found to be related to surface debris. S6 was a pipe that was located at the surface in the C1 area. Geophysical targets S6 and S7 were associated with asphalt and construction debris that remains on the edge of the C excavation area. Geophysical data was collected in the area under the overburden stockpile, in the area between C1 and C2 where the water storage tank was removed.

Scanning and Sorting of Area C2 material
Cabrera Services in conjunction with Parsons dig team and St. George personnel scanned and sorted debris from the J4, J3, I4 and I3 grids removed from the C2 additional excavation. The material was pushed out on plastic in the lay down area and all debris hand sorted to remove items identified by Cabrera services as having readings above background. Any items identified by Cabrera were moved to the B25 box for disposal and all other debris that was removed during the hand sort was laid out on plastic to be inspected by the Army when the scanning and sorting of this material is complete. Army Rep John Cleary was onsite to provide over site of the scrap metal sorting. A 40 cy roll off container has been filled and was removed from the site.

Cabrera Services scanned the recyclable metal with the Ludlum 4420 to identify above background material. All recyclable metal was removed and sorted from the non recyclable trash in the lay out area. This metal once inspected by the Army was scanned by Cabrera with the Ludlum 4420 than placed in the scrap roll off. Any material identified during the scanning of the recyclable metals to be above background was placed in the B25 box and will be moved to the storage building once full.

Sampling.

No Samples collected today

Disposal (Use right click, update field function to total Cumulative numbers)
One 40 cy roll off of recyclable metal sent to Luffmann metal recyclers.

Loads (to Date)	Loads Today	Cumulative Loads	Est. Tons (to Date)	Est Tons Today	Cumulative Est. Tons
147	None	147	4257.51	None	4448.79
					Updated Total

Delivered Material (use Table, Insert, Rows above or below to add extra spaces)

Material	Loads	Cubic Yards	Tons
None			0

Prepared By: _____
Ben McAllister

Reviewed By: _____ Date: _____

Daily Report for SEAD-12 Removal Action
(W912DY-08-D-0003 TO #03; Job 746762)

Date	**Day**	**Weather Conditions**
October 15, 2009	**Thursday**	Party cloudy, Temperatures ranged from 29 to 42, wind N 1 to 13 mph, Rain

Personnel On-Site (use Table, Insert, Rows above or below to add extra spaces**)**
Working Hrs 0600 – 1800 hrs

Affiliation	**Position**	**Name**	**Time or Hours**
Parsons	**Construction Manager**	**B. McAllister**	**12 hrs**
Parsons	**Tech III**	**Jim Gilchrist**	**10 hrs**
Parsons	**Tech II**	**Lindy Swanson**	**10 hrs**
St. George	**Supervisor**	**Jason Michael**	**10 hrs**
St. George	**Operator**	**Bill Cauldwell**	**10 hrs**
St. George	**Laborer**	**Andrew Baker**	**10 hrs**
St. George	**Laborer**	**Matt Lowry**	**10 hrs**
Cabrera	**Rad Tech**	**Landon Collins**	**10 hrs**
Army	**USACOE**	**Tom Battaglia**	**2 hrs**
		John Cleary	**0 hrs**
		Steve Absolom	**0 hrs**

Equipment On-Site (use Table, Insert, Rows above or below to add extra spaces)

Type	**#**	**Type**	**#**	**Type**	**#**
Excavator Cat 325	1	Komatsu Dozer small	1	Haul Trucks Cat 528	1
Loader	0	Flat Bed Truck	0	Skid Steer Komatsu	1
Cat Folk w/ bucket	0	Screening Plant	0	Water Storage	2
Generator	0	Pump	1	Komatsu Dozer large	1
New Holland Tractor	0	Trimble Surveying R7	1	EM31MKII	1

Health and Safety:
PPE Level(s) D

Tool Box Meeting **Time:** 0700 hours
Excavation safety and trenching safety

Work Performed:
Material from the additional C2 area at anomaly numbers P2 to S3 was loaded out for transportation to the disposal facility. Recyclable metal was loaded into a roll off container and removed from the site. Additional material was removed from grid J3 and samples were collected for 4 day turnaround.

Disposal
40 cy roll off of scrap metal to Luffmann metal recyclers and 35 trucks to the disposal facility from the C2 excavation area

Geophysical Investigation
None

Scanning and Sorting of material

Daily Report for SEAD-12 Removal Action

(W912DY-08-D-0003 TO #03; Job 746762)

The scanning and sorting of C2 material has been completed and all remaining soil loaded out for offsite disposal. One 25cy roll off container was shipped offsite for recycling at Luffmann metal recyclers completing the scanning and sorting of excavated material.

Sampling.

Seven samples were collected from the C2 excavation area from grids J4, I4and I3 and shipped to Life Sciences labs for analysis of VOC, SVOC, Metals +cn, Pesticides, and PCB's for 4 day turn around. Samples were also sent to General Engineering Labs for Gross Alpha Beta and Gamma spec analysis on a 14 day turnaround. Two samples were collected from the northern side of the J3 grid after 12 inches of material was removed from the face of the excavation. This material was removed due to the presence of pesticides detected in samples SW-I-3-01, SW-I-3-02 and SW-I-3-03. The excavated material was removed and directly loaded to trucks to the disposal facility. Once the material was removed one sample was collected and submitted for pesticide analysis with a 4 day turnaround.

Disposal (Use right click, update field function to total Cumulative numbers)
One 25 cy roll off of scrap metal 35 trucks of soil brought to the disposal facility

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Loads (to Date)	**Loads Today**	**Cumulative Loads**	**Est. Tons (to Date)**	**Est Tons Today**	**Cumulative Est. Tons**
147	35	182	4257.51	937.13	5385.92
					Updated Total

Delivered Material (use Table, Insert, Rows above or below to add extra spaces)

Material	**Loads**	**Cubic Yards**	**Tons**
None			0

Prepared By: _____
Ben McAllister

Reviewed By: _____ Date: _____

Daily Report for SEAD-12 Removal Action
(W912DY-08-D-0003 TO #03; Job 746762)

Date	**Day**	**Weather Conditions**
October 21, 2009	**Wednesday**	Temperatures ranged from 51 to 67, wind N 0 to 6 mph

Personnel On-Site (use Table, Insert, Rows above or below to add extra spaces**)**
Working Hrs 0900 – 1900 hrs

Affiliation	**Position**	**Name**	**Time or Hours**
Parsons	**Construction Manager**	**B. McAllister**	**10 hrs**
Parsons	**Tech III**	**Jim Gilchrist**	**0 hrs**
Parsons	**Tech II**	**Lindy Swanson**	**0 hrs**
St. George	**Supervisor**	**Jason Michael**	**0 hrs**
St. George	**Operator**	**Bill Cauldwell**	**0 hrs**
St. George	**Laborer**	**Andrew Baker**	**0 hrs**
St. George	**Laborer**	**Matt Lowry**	**0 hrs**
Cabrera	**Rad Tech**	**Landon Collins**	**0 hrs**
Army	**USACOE**	**Tom Battaglia**	**0 hrs**
		John Cleary	**0 hrs**
		Steve Absolom	**0 hrs**

Equipment On-Site (use Table, Insert, Rows above or below to add extra spaces)

Type	**#**	**Type**	**#**	**Type**	**#**
Excavator Cat 325	1	Komatsu Dozer small	1	Haul Trucks Cat 528	1
Loader	0	Flat Bed Truck	0	Skid Steer Komatsu	1
Cat Folk w/ bucket	0	Screening Plant	0	Water Storage	1
Generator	0	Pump	1	Komatsu Dozer large	1
New Holland Tractor	0	Trimble Surveying R7	1	EM31MKII	1

Health and Safety:
PPE Level(s) D

Tool Box Meeting **Time:** 0900 hours
None

Work Performed:
Em31MKII geophysical data was collected in the open wooded area to the south of the Pit B excavation area. Data was collected on 10 foot lane spacing over a 200 X 200 foot area previously identified in the 1996 survey.

Disposal
None

Geophysical Investigation
Data collected over ½ acre in the wooded area to the south of the Pit B area.

Scanning and Sorting of Area C2 material
None

Daily Report for SEAD-12 Removal Action

(W912DY-08-D-0003 TO #03; Job 746762)

Sampling
No Samples collected today

Disposal (Use right click, update field function to total Cumulative numbers)

Loads (to Date)	Loads Today	Cumulative Loads	Est. Tons (to Date)	Est Tons Today	Cumulative Est. Tons
182	None	182	5385.92	None	5385.92
					Updated Total

Delivered Material (use Table, Insert, Rows above or below to add extra spaces)

Material	Loads	Cubic Yards	Tons
None			0

Prepared By: _____
Ben McAllister

Reviewed By: _____ Date: _____

Daily Report for SEAD-12 Removal Action
(W912DY-08-D-0003 TO #03; Job 746762)

Date	Day	Weather Conditions
October 26, 2009	**Monday**	**Sun Clear skies 36 low 58 wind SE 0 to 10 mph**

Personnel On-Site (use Table, Insert, Rows above or below to add extra spaces**)**
Working Hrs 0700 – 1730 hrs

Affiliation	Position	Name	Time or Hours
Parsons	**Construction Manager**	**B. McAllister**	**10 hrs**
Parsons	**Tech III**	**Jim Gilchrist**	**0 hrs**
Parsons	**Tech II**	**Lindy Swanson**	**0 hrs**
St. George	**Supervisor**	**Steve St. George**	**10 hrs**
St. George	**Operator**	**Jason Michael**	**10 hrs**
St. George	**Laborer**	**Andrew Baker**	**10 hrs**
St. George	**Operator**	**Paul St George**	**10 hrs**
Cabrera	**Rad Tech**	**Landon Collins**	**10 hrs**
Army	**USACOE**	**Tom Battaglia**	**0 hrs**
		John Cleary	**0 hrs**
		Steve Absolom	**0 hrs**

Equipment On-Site (use Table, Insert, Rows above or below to add extra spaces)

Type	#	Type	#	Type	#
Excavator Cat 325	1	Komatsu Dozer small	1	Haul Trucks Cat 528	1
Loader	0	Water truck	1	Skid Steer Komatsu	1
Cat Folk w/ bucket	0	Screening Plant	0	Water Storage	2
Generator	0	Pump	1	Komatsu Dozer large	1
New Holland Tractor	0	Trimble Surveying R7	1	EM31MKII	1

Health and Safety:
PPE Level(s) D

Tool Box Meeting **Time:** 0700 hours
Hand protection and work glove use

Work Performed:
Backfill of the Area B excavation using staged overburden soil. The excavator, large dozer and haul truck were used to fill in this excavation. Water in the excavation was pumped to the water storage tank and the hole was backfilled and compacted using the Komatsu 65 dozer. The area between excavation Area A and Area B was graded to drain to the west. Parsons received approval from Romulus water department to discharge the stored ground water to the Water Treatment Plant #2. A water truck will be brought to the site to transport the 17,000 gallons of stored water to the water treatment plant. Cabrera services have scanned out the small Komatsu dozer and Komatsu skid steer. These two pieces of equipment will be removed from the site tomorrow.

Disposal
A conference call with Parsons, Army and Cabrera Services was conducted to agree on the removal of additional material from the C2 area in the K3 grid where sample results returned above average results. The participants of the call made the decision to remove an additional 24 cubic yards of material to

remove any remaining above background material. As the removal of the 24 cubic yards of material is conducted Cabrera services will continually scan the area to detect any potential above background material.

Geophysical Investigation
None
Scanning and Sorting of Area C2 material
Cabrerra Services scanned the K3 grid where sample results returned a above background results. No above background material detected.

Sampling
No Samples collected today

Disposal (Use right click, update field function to total Cumulative numbers)

Loads (to Date)	Loads Today	Cumulative Loads	Est. Tons (to Date)	Est Tons Today	Cumulative Est. Tons
182	None	182	5385.92	None	5385.92 Updated Total

Delivered Material (use Table, Insert, Rows above or below to add extra spaces)

Material	Loads	Cubic Yards	Tons
None			0

Prepared By: _____
Ben McAllister

Reviewed By: _____ Date: _____

Daily Report for SEAD-12 Removal Action
(W912DY-08-D-0003 TO #03; Job 746762)

Date	**Day**	**Weather Conditions**
October 27, 2009	**Tuesday**	**Sun Clear skies 64 low 47 wind S 3 to 19 mph**

Personnel On-Site (use Table, Insert, Rows above or below to add extra spaces**)**
Working Hrs 0700 – 1730 hrs

Affiliation	**Position**	**Name**	**Time or Hours**
Parsons	**Construction Manager**	**B. McAllister**	**10 hrs**
Parsons	**Tech III**	**Jim Gilchrist**	**0 hrs**
Parsons	**Tech II**	**Lindy Swanson**	**0 hrs**
St. George	**Supervisor**	**Steve St. George**	**10 hrs**
St. George	**Operator**	**Jason Michael**	**10 hrs**
St. George	**Laborer**	**Andrew Baker**	**10 hrs**
St. George	**Operator**	**Paul St George**	**10 hrs**
Cabrera	**Rad Tech**	**Landon Collins**	**10 hrs**
Army	**USACOE**	**Tom Battaglia**	**0 hrs**
		John Cleary	**0 hrs**
		Steve Absolom	**0 hrs**

Equipment On-Site (use Table, Insert, Rows above or below to add extra spaces)

Type	**#**	**Type**	**#**	**Type**	**#**
Excavator Cat 325	1	Komatsu Dozer small	1	Haul Trucks Cat 528	1
Loader	0	Water truck	1	Skid Steer Komatsu	1
Cat Folk w/ bucket	0	Screening Plant	0	Water Storage	2
Generator	0	Pump	1	Komatsu Dozer large	1
New Holland Tractor	0	Trimble Surveying R7	1	EM31MKII	1

Health and Safety:
PPE Level(s) D

Tool Box Meeting **Time:** 0630 hours
Safety glasses use and selection

Work Performed:
Backfill of the Area C2 excavation using staged overburden soil, the excavator and large dozer were used to fill in this excavation. Parsons received approval from Romulus water department to discharge the stored ground water to the Water Treatment Plant #2. A water truck was brought to the site to transport the 17,000 gallons of stored water from the water storage tanks to the water treatment plant. Cabrera Services has scanned out the large Komatsu dozer, Cat 325 excavator and the haul truck. These three pieces of equipment will be removed from the site tomorrow.

Disposal
Two truckload of material was removed from the floor of the K3 grid in excavation area C2. Cabrera Services scanned the material prior to it being removed in 8 inch lifts. The material removed was direct loaded into trucks that brought it to the disposal facility. The entire area was scanned after the material was removed and no above background readings were detected. Once the 24cy of material was removed the area was backfilled and graded to drain to the north.

Geophysical Investigation
None

Scanning and Sorting of Area C2 material
Cabrerra Services scanned the K3 grid as material was removed in 8 inch lifts where sample results had identified an above background result. No above background material detected during any of the scans.

Sampling
Swipe samples for PCBs were conducted on the water storage tanks prior to them being removed from the site. Swipes were collected in the presence of the rental company representative and will be analyzed for PCBs using method 8082. One sample was collected from the floor of grid K3 (S12EXFL-K-3-02) this sample will be submitted for Gross Alpha Beta and Gamma spec analysis. It has been agreed that the area will be backfilled prior to receiving the results from the lab.

Disposal (Use right click, update field function to total Cumulative numbers)

Loads (to Date)	**Loads Today**	**Cumulative Loads**	**Est. Tons (to Date)**	**Est Tons Today**	**Cumulative Est. Tons**
182	2	184	5388.92	43	5431.92
					Updated Total

Delivered Material (use Table, Insert, Rows above or below to add extra spaces)

Material	Loads	Cubic Yards	Tons
None			0

Prepared By: _____
Ben McAllister

Reviewed By: _____ Date: _____

Daily Report for SEAD-12 Removal Action
(W912DY-08-D-0003 TO #03; Job 746762)

Date	**Day**	**Weather Conditions**
October 28, 2009	**Wednesday**	**Temperature high 54 low 50 wind N 0 to 7 mph**

Personnel On-Site (use Table, Insert, Rows above or below to add extra spaces**)**
Working Hrs 0700 – 1730 hrs

Affiliation	**Position**	**Name**	**Time or Hours**
Parsons	**Construction Manager**	**B. McAllister**	**10 hrs**
Parsons	**Tech III**	**Jim Gilchrist**	**0 hrs**
Parsons	**Tech II**	**Lindy Swanson**	**0 hrs**
St. George	**Supervisor**	**Steve St. George**	**0 hrs**
St. George	**Operator**	**Jason Michael**	**0 hrs**
St. George	**Laborer**	**Andrew Baker**	**0 hrs**
St. George	**Operator**	**Paul St George**	**0 hrs**
Cabrera	**Rad Tech**	**Landon Collins**	**10 hrs**
Army	**USACOE**	**Tom Battaglia**	**0 hrs**
		John Cleary	**0 hrs**
		Steve Absolom	**0 hrs**

Equipment On-Site (use Table, Insert, Rows above or below to add extra spaces)

Type	**#**	**Type**	**#**	**Type**	**#**
Excavator Cat 325	0	Komatsu Dozer small	0	Haul Trucks Cat 528	1
Loader	0	Water truck	0	Skid Steer Komatsu	0
Cat Folk w/ bucket	0	Screening Plant	0	Water Storage	2
Generator	0	Pump	0	Komatsu Dozer large	0
New Holland Tractor	0	Trimble Surveying R7	1	EM31MKII	1

Health and Safety:
PPE Level(s) D

Tool Box Meeting **Time:** 0630 hours
Frisk out procedure

Work Performed:
St. George equipment demobilization performed, all heavy equipment offsite today with the exception of the two water storage tanks that are awaiting laboratory analysis before they can be released back to the rental company.

Disposal
None

Geophysical Investigation
None

Scanning and Sorting of Area C2 material
Cabrerra Services scanned the haul roads and area under the water storage tank, no above background readings were detected during any of the scans.

Daily Report for SEAD-12 Removal Action

(W912DY-08-D-0003 TO #03; Job 746762)

Sampling
None

Disposal (Use right click, update field function to total Cumulative numbers)

Loads (to Date)	Loads Today	Cumulative Loads	Est. Tons (to Date)	Est Tons Today	Cumulative Est. Tons
	final	184		final	5431.92

Delivered Material (use Table, Insert, Rows above or below to add extra spaces)

Material	Loads	Cubic Yards	Tons
None			0

Prepared By: _____
Ben McAllister

Reviewed By: _____ Date: _____

Daily Report for SEAD-12 Removal Action
(W912DY-08-D-0003 TO #03; Job 746762)

Date	**Day**	**Weather Conditions**
October 29, 2009	**Thursday**	**overcast skies 52 low 49 wind NW 0 to 7 mph**

Personnel On-Site (use Table, Insert, Rows above or below to add extra spaces**)**
Working Hrs 0700 – 1730 hrs

Affiliation	**Position**	**Name**	**Time or Hours**
Parsons	**Construction Manager**	**B. McAllister**	**12 hrs**
Parsons	**Tech III**	**Jim Gilchrist**	**0 hrs**
Parsons	**Tech II**	**Lindy Swanson**	**0 hrs**
St. George	**Supervisor**	**Steve St. George**	**0 hrs**
St. George	**Operator**	**Jason Michael**	**0 hrs**
St. George	**Laborer**	**Andrew Baker**	**0 hrs**
St. George	**Operator**	**Paul St George**	**0 hrs**
Cabrera	**Rad Tech**	**Landon Collins**	**8 hrs**
Army	**USACOE**	**Tom Battaglia**	**0 hrs**
		John Cleary	**0 hrs**
		Steve Absolom	**0 hrs**

Equipment On-Site (use Table, Insert, Rows above or below to add extra spaces)

Type	**#**	**Type**	**#**	**Type**	**#**
Excavator Cat 325	0	Komatsu Dozer small	0	Haul Trucks Cat 528	0
Loader	0	Water truck	0	Skid Steer Komatsu	0
Cat Folk w/ bucket	0	Screening Plant	0	Water Storage	2
Generator	0	Pump	0	Komatsu Dozer large	0
New Holland Tractor	0	Trimble Surveying R7	0	EM31MKII	0

Health and Safety:
PPE Level(s) D

Tool Box Meeting **Time:** 0630 hours
Frisk out procedure

Work Performed:
Cabrera demobilization and shipped all equipment and sources to office. Parsons performed final electromagnetic surveys over the backfilled A, B and C2 areas to confirm that all metal material had been removed from the area. All EM and surveying equipment demobilized and office closed up. Demaria Landscaping Inc. will be onsite during the next available weather window to broadcast seed the disturbed area to stabilize the soil for the winter. The landscaper will return in the spring to repair any areas that do not vegetate this late in the season. This will be the final daily report for the field effort of this project.

Disposal
None

Geophysical Investigation
EM-31 MKII survey of areas A, B and C2 to confirm the complete removal of items associated with this removal action. The surveys were conducted in Vertical mode with 5 foot lane spacing used.

Daily Report for SEAD-12 Removal Action

(W912DY-08-D-0003 TO #03; Job 746762)

Scanning and Sorting of Area C2 material
Complete

Sampling
None

Disposal (Use right click, update field function to total Cumulative numbers)

Loads (to Date)	Loads Today	Cumulative Loads	Est. Tons (to Date)	Est Tons Today	Cumulative Est. Tons
	Final	184		final	5431.92

Delivered Material (use Table, Insert, Rows above or below to add extra spaces)

Material	Loads	Cubic Yards	Tons
None			0

Prepared By: _____
Ben McAllister

Reviewed By: _____ Date: _____

Daily Report for SEAD-12 Removal Action/SEAD-5 Cover (W912DY-08-D-0003 TO #03/06; Job 746762/756856)

Date	Day	Weather Conditions
November 03, 2009	**Tuesday**	**Sunny, temps 36 low to high 51, wind W 0 – 16 mph**

Personnel On-Site (use Table, Insert, Rows above or below to add extra spaces**)**

Affiliation	Position	Name	Time or Hours
DeMaria Landscaping			

Equipment On-Site (use Table, Insert, Rows above or below to add extra spaces)

Type	#	Type	#	Type	#
York Rake	1				
Truck and Trailer	1				

Health and Safety:
PPE Level(s) D

Tool Box Meeting **Time:**

Work Performed:
Received phone call from DeMaria Landscaping indicating that crew had gone to Seneca Army Depot and raked and seeded area at SEAD-12 and SEAD-5 with winter wheat. DeMaria will return in spring to re-seed if requested by Parsons/Army if vegetative cover does not take in both areas.
Disposal
None

Disposal (Use right click, update field function to total Cumulative numbers)

Loads (to Date)	Loads Today	Cumulative Loads	Est. Tons (to Date)	Est Tons Today	Cumulative Est. Tons

Delivered Material (use Table, Insert, Rows above or below to add extra spaces)

Material	Loads	Cubic Yards	Tons
Seed – Winter Wheat			0

Prepared By: _____
Ben McAllister

Reviewed By: _____ Date: _____

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APPENDIX B

CHEMICAL AND RADIOLOGICAL CONFIRMATORY SOIL SAMPLE RESULTS

Table B-1C: SEAD-12 Complete Confirmatory Soil Sample Results Compared to NYSDEC Unrestricted Use Levels

Table B-1R: SEAD-12 Complete Radiological Soil Sample Results

Table B-2: SEAD-12 Excavated Confirmatory Soil Sample Results Compared to NYSDEC Unrestricted Use Levels

Table B-3C: SEAD-12 Overburden Pit C1 Soil Sample Results Compared to NYSDEC Unrestricted Use Levels

Table B-3R: SEAD-12 Overburden Disposal Pit C1 Radiological Soil Sample Results

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Table B-1C
SEAD-12 Complete Confirmatory Soil Sample Analytical Results
Compared to NYSDEC Unrestricted Use Levels
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION								SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12
LOCATION ID								S12EXFL-N-9-01	S12EXFL-N-9-02	S12EXFL-O-10-01	S12EXPR-N-10-01	S12EXPR-N-10-02	S12EXPR-N-9-01
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								S12EXFL-N-9-01	S12EXFL-N-9-02	S12EXFL-O-10-01	S12EXPR-N-10-01	S12EXPR-N-10-02	S12EXPR-N-9-01
TOP OF SAMPLE								0	0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								7/30/2009	7/30/2009	7/30/2009	7/30/2009	7/30/2009	7/30/2009
QC CODE								SA	SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA
AREA								Pit A	Pit A	Pit A	Pit A	Pit A	Pit A
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**NYSDEC Unrestricted Use Level**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Volatile Organic Compounds													
1,1,1-Trichloroethane	UG/KG	0	0%	680	0	0	85	0.27 U	0.24 U	0.24 U	0.24 U	0.24 U	0.23 U
1,1,2,2-Tetrachloroethane	UG/KG	0	0%		0	0	85	0.41 U	0.37 U	0.36 U	0.36 U	0.37 U	0.35 U
1,1,2-Trichloroethane	UG/KG	0	0%		0	0	85	0.3 U	0.27 U	0.26 U	0.26 U	0.27 U	0.25 U
1,1-Dichloroethane	UG/KG	0	0%	270	0	0	85	0.21 U	0.19 U	0.18 U	0.18 U	0.19 U	0.18 U
1,1-Dichloroethene	UG/KG	0	0%	330	0	0	85	0.41 U	0.37 U	0.36 U	0.36 U	0.37 U	0.35 U
1,2-Dichloroethane	UG/KG	0	0%	20	0	0	85	0.33 U	0.3 U	0.29 U	0.29 U	0.3 U	0.29 U
1,2-Dichloropropane	UG/KG	0	0%		0	0	85	0.33 U	0.3 U	0.29 U	0.29 U	0.3 U	0.29 U
Acetone	UG/KG	9.6	13%	50	0	11	85	25 U	23 U	22 U	22 U	23 U	22 U
Benzene	UG/KG	0	0%	60	0	0	85	0.27 U	0.24 U	0.24 U	0.24 U	0.24 U	0.23 U
Bromodichloromethane	UG/KG	0	0%		0	0	85	0.27 U	0.24 U	0.24 U	0.24 U	0.24 U	0.23 U
Bromoform	UG/KG	0	0%		0	0	85	0.54 U	0.48 U	0.47 U	0.47 U	0.48 U	0.46 U
Carbon disulfide	UG/KG	2.5	2%		0	2	85	2.5 J	0.58 U	0.57 U	0.57 U	0.59 U	0.56 U
Carbon tetrachloride	UG/KG	0	0%	760	0	0	85	0.58 U	0.52 U	0.5 U	0.51 U	0.52 U	0.49 U
Chlorobenzene	UG/KG	0	0%	1100	0	0	85	0.28 U	0.25 U	0.25 U	0.25 U	0.26 U	0.24 U
Chlorodibromomethane	UG/KG	0	0%		0	0	85	0.42 U	0.38 U	0.37 U	0.37 U	0.38 U	0.36 U
Chloroethane	UG/KG	0	0%		0	0	85	0.55 U	0.49 U	0.48 U	0.48 U	0.49 U	0.47 U
Chloroform	UG/KG	0	0%	370	0	0	85	0.41 U	0.37 U	0.36 U	0.36 U	0.37 U	0.35 U
Cis-1,2-Dichloroethene	UG/KG	0.45	1%	250	0	1	85	0.28 U	0.25 U	0.25 U	0.25 U	0.26 U	0.24 U
Cis-1,3-Dichloropropene	UG/KG	0	0%		0	0	85	0.39 U	0.35 U	0.34 U	0.34 U	0.35 U	0.33 U
Ethyl benzene	UG/KG	2.7	1%	1000	0	1	85	2.7 J	1 U	0.97 U	0.99 U	1.1 U	0.95 U
Meta/Para Xylene	UG/KG	1.3	4%	260	0	3	85	1.3 J	0.72 U	0.7 U	0.71 U	0.72 U	0.68 U
Methyl bromide	UG/KG	0	0%		0	0	85	0.58 U	0.52 U	0.5 U	0.51 U	0.52 U	0.49 U
Methyl butyl ketone	UG/KG	0	0%		0	0	85	0.89 U	0.8 U	0.78 U	0.79 U	0.8 U	0.76 U
Methyl chloride	UG/KG	0	0%		0	0	85	0.39 U	0.35 U	0.34 U	0.34 U	0.35 U	0.33 U
Methyl ethyl ketone	UG/KG	1.6	5%	120	0	4	85	1.1 J	0.87 U	0.84 U	0.85 U	0.87 U	0.82 U
Methyl isobutyl ketone	UG/KG	0	0%		0	0	85	0.83 U	0.74 U	0.72 U	0.73 U	0.75 U	0.71 U
Methylene chloride	UG/KG	2.8	24%	50	0	20	85	0.49 U	0.44 U	0.42 U	0.43 U	0.44 U	0.41 U
Ortho Xylene	UG/KG	0	0%	260	0	0	85	0.8 U	0.72 U	0.7 U	0.71 U	0.72 U	0.68 U
Styrene	UG/KG	0.61	4%		0	3	85	0.36 U	0.57 J	0.54 J	0.32 U	0.32 U	0.31 U
Tetrachloroethene	UG/KG	0	0%	1300	0	0	85	0.63 U	0.56 U	0.54 U	0.55 U	0.56 U	0.53 U
Toluene	UG/KG	3.3	48%	700	0	41	85	0.68 J	0.37 U	0.58 J	0.66 J	0.37 U	0.73 J
Total Xylenes	UG/KG	0	0%	260	0	0	8						
Trans-1,2-Dichloroethene	UG/KG	0	0%	190	0	0	85	0.4 U	0.36 U	0.35 U	0.35 U	0.36 U	0.34 U
Trans-1,3-Dichloropropene	UG/KG	0	0%		0	0	85	0.46 U	0.41 U	0.4 U	0.41 U	0.42 U	0.39 U
Trichloroethene	UG/KG	1.2	16%	470	0	14	85	0.51 U	0.46 U	0.83 J	0.49 J	0.46 U	0.44 J
Vinyl chloride	UG/KG	0	0%	20	0	0	85	0.3 U	0.27 U	0.26 U	0.26 U	0.27 U	0.25 U
Semivolatile Organic Compounds													
1,2,4-Trichlorobenzene	UG/KG	0	0%		0	0	85	41 U	37 U	36 U	36 U	37 U	35 U
1,2-Dichlorobenzene	UG/KG	0	0%	1100	0	0	85	37 U	33 U	32 U	33 U	34 U	32 U
1,3-Dichlorobenzene	UG/KG	0	0%	2400	0	0	85	41 U	37 U	36 U	36 U	37 U	35 U
1,4-Dichlorobenzene	UG/KG	0	0%	1800	0	0	85	37 U	33 U	32 U	33 U	34 U	32 U
2,4,5-Trichlorophenol	UG/KG	0	0%		0	0	85	58 U	52 U	50 U	51 U	52 U	49 U
2,4,6-Trichlorophenol	UG/KG	0	0%		0	0	85	63 U	56 U	54 U	55 U	56 U	53 U
2,4-Dichlorophenol	UG/KG	0	0%		0	0	85	50 U	45 U	43 U	44 U	45 U	43 U
2,4-Dimethylphenol	UG/KG	0	0%		0	0	85	46 U	41 U	40 U	41 U	42 U	39 U
2,4-Dinitrophenol	UG/KG	0	0%		0	0	85	1300 U	1100 U	1100 U	1100 U	1200 U	1100 U
2,4-Dinitrotoluene	UG/KG	0	0%		0	0	85	68 U	61 U	59 U	60 U	61 U	58 U
2,6-Dinitrotoluene	UG/KG	0	0%		0	0	85	51 U	46 U	45 U	45 U	46 U	44 U

Table B-1C
SEAD-12 Complete Confirmatory Soil Sample Analytical Results
Compared to NYSDEC Unrestricted Use Levels
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION							SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12
LOCATION ID							S12EXFL-N-9-01	S12EXFL-N-9-02	S12EXFL-O-10-01	S12EXPR-N-10-01	S12EXPR-N-10-02	S12EXPR-N-9-01
MATRIX							SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID							S12EXFL-N-9-01	S12EXFL-N-9-02	S12EXFL-O-10-01	S12EXPR-N-10-01	S12EXPR-N-10-02	S12EXPR-N-9-01
TOP OF SAMPLE							0	0	0	0	0	0
BOTTOM OF SAMPLE							0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE							7/30/2009	7/30/2009	7/30/2009	7/30/2009	7/30/2009	7/30/2009
QC CODE							SA	SA	SA	SA	SA	SA
STUDY ID							RA	RA	RA	RA	RA	RA
AREA							Pit A	Pit A	Pit A	Pit A	Pit A	Pit A
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**NYSDEC Unrestricted Use Level**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
2-Chloronaphthalene	UG/KG	0	0%		0	0	85	46 U	41 U	40 U	41 U	42 U	39 U
2-Chlorophenol	UG/KG	0	0%		0	0	85	49 U	44 U	42 U	43 U	44 U	41 U
2-Methylnaphthalene	UG/KG	0	0%		0	0	85	41 U	37 U	36 U	36 U	37 U	35 U
2-Methylphenol	UG/KG	0	0%	330	0	0	85	36 U	32 U	31 U	32 U	32 U	31 U
2-Nitroaniline	UG/KG	0	0%		0	0	85	1500 U	1400 U	1300 U	1300 U	1400 U	1300 U
2-Nitrophenol	UG/KG	0	0%		0	0	85	35 U	31 U	30 U	31 U	31 U	30 U
3,3'-Dichlorobenzidine	UG/KG	0	0%		0	0	85	49 U	44 U	42 U	43 U	44 U	41 U
3-Nitroaniline	UG/KG	0	0%		0	0	85	1100 U	910 U	880 U	900 U	920 U	870 U
4,6-Dinitro-2-methylphenol	UG/KG	0	0%		0	0	85	1900 U	1700 U	1600 U	1700 U	1700 U	1600 U
4-Bromophenyl phenyl ether	UG/KG	0	0%		0	0	85	51 U	46 U	45 U	45 U	46 U	44 U
4-Chloro-3-methylphenol	UG/KG	0	0%		0	0	85	49 U	44 U	42 U	43 U	44 U	41 U
4-Chloroaniline	UG/KG	0	0%		0	0	85	47 U	42 U	41 U	42 U	43 U	40 U
4-Chlorophenyl phenyl ether	UG/KG	0	0%		0	0	85	50 U	45 U	43 U	44 U	45 U	43 U
4-Methylphenol	UG/KG	0	0%	330	0	0	8						
4-Nitroaniline	UG/KG	0	0%		0	0	85	1500 U	1400 U	1300 U	1400 U	1400 U	1300 U
4-Nitrophenol	UG/KG	0	0%		0	0	85	1400 U	1200 U	1200 U	1200 U	1200 U	1200 U
Acenaphthene	UG/KG	0	0%	20000	0	0	85	50 U	45 U	43 U	44 U	45 U	43 U
Acenaphthylene	UG/KG	0	0%	100000	0	0	85	46 U	41 U	40 U	41 U	42 U	39 U
Anthracene	UG/KG	0	0%	100000	0	0	85	47 U	42 U	41 U	42 U	43 U	40 U
Benzo(a)anthracene	UG/KG	0	0%	1000	0	0	85	50 U	45 U	43 U	44 U	45 U	43 U
Benzo(a)pyrene	UG/KG	0	0%	1000	0	0	85	42 U	38 U	37 U	37 U	38 U	36 U
Benzo(b)fluoranthene	UG/KG	0	0%	1000	0	0	85	60 U	54 U	52 U	53 U	54 U	51 U
Benzo(ghi)perylene	UG/KG	0	0%	100000	0	0	85	120 U	110 U	98 U	100 U	110 U	97 U
Benzo(k)fluoranthene	UG/KG	0	0%	800	0	0	85	61 U	55 U	53 U	54 U	55 U	52 U
Benzyl alcohol	UG/KG	140	38%		0	32	85	30 U	27 U	26 U	26 U	27 U	25 U
Bis(2-Chloroethoxy)methane	UG/KG	0	0%		0	0	85	63 U	56 U	54 U	55 U	56 U	53 U
Bis(2-Chloroethyl)ether	UG/KG	0	0%		0	0	85	49 U	44 U	42 U	43 U	44 U	41 U
Bis(2-Chloroisopropyl)ether	UG/KG	0	0%		0	0	85	59 U	53 U	51 U	52 U	53 U	50 U
Bis(2-Ethylhexyl)phthalate	UG/KG	120	11%		0	9	85	70 U	63 U	120 J	62 U	63 U	60 U
Butylbenzylphthalate	UG/KG	0	0%		0	0	85	51 U	46 U	45 U	45 U	46 U	44 U
Carbazole	UG/KG	0	0%		0	0	85	69 U	62 U	60 U	61 U	62 U	59 U
Chrysene	UG/KG	0	0%	1000	0	0	85	51 U	46 U	45 U	45 U	46 U	44 U
Di-n-butylphthalate	UG/KG	0	0%		0	0	85	180 U	160 U	150 U	160 U	160 U	150 U
Di-n-octylphthalate	UG/KG	0	0%		0	0	85	42 U	38 U	37 U	37 U	38 U	36 U
Dibenz(a,h)anthracene	UG/KG	0	0%	330	0	0	85	49 U	44 U	42 U	43 U	44 U	41 U
Dibenzofuran	UG/KG	0	0%	7000	0	0	85	46 U	41 U	40 U	41 U	42 U	39 U
Diethyl phthalate	UG/KG	0	0%		0	0	85	50 U	45 U	43 U	44 U	45 U	43 U
Dimethylphthalate	UG/KG	86	7%		0	6	85	50 U	45 U	43 U	44 U	45 U	43 U
Fluoranthene	UG/KG	74	2%	100000	0	2	85	50 U	45 U	43 U	44 U	45 U	43 U
Fluorene	UG/KG	0	0%	30000	0	0	85	41 U	37 U	36 U	36 U	37 U	35 U
Hexachlorobenzene	UG/KG	0	0%	330	0	0	85	47 U	42 U	41 U	42 U	43 U	40 U
Hexachlorobutadiene	UG/KG	0	0%		0	0	85	49 U	44 U	42 U	43 U	44 U	41 U
Hexachlorocyclopentadiene	UG/KG	0	0%		0	0	85	45 U	40 U	39 U	40 U	40 U	38 U
Hexachloroethane	UG/KG	0	0%		0	0	85	40 U	36 U	35 U	35 U	36 U	34 U
Indeno(1,2,3-cd)pyrene	UG/KG	0	0%	500	0	0	85	46 U	41 U	40 U	41 U	42 U	39 U
Isophorone	UG/KG	0	0%		0	0	85	50 U	45 U	43 U	44 U	45 U	43 U
N-Nitrosodimethylamine	UG/KG	0	0%		0	0	85	71 U	64 U	62 U	63 U	64 U	61 U
N-Nitrosodiphenylamine	UG/KG	0	0%		0	0	85	55 U	49 U	48 U	48 U	49 U	47 U
N-Nitrosodipropylamine	UG/KG	0	0%		0	0	85	55 U	49 U	48 U	48 U	49 U	47 U

Table B-1C
SEAD-12 Complete Confirmatory Soil Sample Analytical Results
Compared to NYSDEC Unrestricted Use Levels
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION								SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12
LOCATION ID								S12EXFL-N-9-01	S12EXFL-N-9-02	S12EXFL-O-10-01	S12EXPR-N-10-01	S12EXPR-N-10-02	S12EXPR-N-9-01
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								S12EXFL-N-9-01	S12EXFL-N-9-02	S12EXFL-O-10-01	S12EXPR-N-10-01	S12EXPR-N-10-02	S12EXPR-N-9-01
TOP OF SAMPLE								0	0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								7/30/2009	7/30/2009	7/30/2009	7/30/2009	7/30/2009	7/30/2009
QC CODE								SA	SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA
AREA								Pit A	Pit A	Pit A	Pit A	Pit A	Pit A
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**NYSDEC Unrestricted Use Level**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Naphthalene	UG/KG	0	0%	12000	0	0	85	37 U	33 U	32 U	33 U	34 U	32 U
Nitrobenzene	UG/KG	0	0%		0	0	85	54 U	48 U	47 U	47 U	48 U	46 U
Pentachlorophenol	UG/KG	0	0%	800	0	0	85	1400 U	1300 U	1300 U	1300 U	1300 U	1200 U
Phenanthrene	UG/KG	52	2%	100000	0	2	85	51 U	46 U	45 U	45 U	46 U	44 U
Phenol	UG/KG	0	0%	330	0	0	85	49 U	44 U	42 U	43 U	44 U	41 U
Pyrene	UG/KG	64	2%	100000	0	2	85	45 U	40 U	39 U	40 U	40 U	38 U
PCBs													
Aroclor-1016	UG/KG	0	0%	100	0	0	87	22 U	20 U	19 U	19 U	20 U	19 U
Aroclor-1221	UG/KG	0	0%	100	0	0	87	49 U	44 U	42 U	43 U	44 U	41 U
Aroclor-1232	UG/KG	0	0%	100	0	0	87	22 U	20 U	19 U	19 U	20 U	19 U
Aroclor-1242	UG/KG	0	0%	100	0	0	87	33 U	30 U	29 U	29 U	30 U	29 U
Aroclor-1248	UG/KG	0	0%	100	0	0	87	22 U	20 U	19 U	19 U	20 U	19 U
Aroclor-1254	UG/KG	78	5%	100	0	4	87	22 U	20 U	63	19 U	20 U	19 U
Aroclor-1260	UG/KG	0	0%	100	0	0	87	39 U	35 U	34 U	34 U	35 U	33 U
Aroclor-1268	UG/KG	0	0%	100	0	0	87	22 U	20 U	19 U	19 U	20 U	19 U
Pesticides													
4,4'-DDD	UG/KG	6.9	1%	3.3	1	1	85	2.2 U	1.9 U	1.9 U	1.9 U	2 U	1.9 U
4,4'-DDE	UG/KG	5.9	4%	3.3	2	3	85	2.2 U	1.9 U	1.9 U	1.9 U	2 U	1.9 U
4,4'-DDT	UG/KG	9.8	4%	3.3	2	3	85	2.2 U	1.9 U	1.9 U	1.9 U	2 U	1.9 U
Aldrin	UG/KG	0	0%	5	0	0	85	1.1 U	0.96 U	0.93 U	0.94 U	0.96 U	0.91 U
Alpha-BHC	UG/KG	210	6%	20	2	5	85	8.5	0.96 U	0.93 U	0.94 U	0.96 U	0.91 U
Alpha-Chlordane	UG/KG	0	0%	94	0	0	85	1.1 U	0.96 U	0.93 U	0.94 U	0.96 U	0.91 U
Beta-BHC	UG/KG	63	1%	36	1	1	85	1.1 U	0.96 U	0.93 U	0.94 U	0.96 U	0.91 U
Chlordane (Alpha And Gamma Isomers)	UG/KG	0	0%	94	0	0	8						
Delta-BHC	UG/KG	61	4%	40	1	3	85	1.1 U	0.96 U	0.93 U	0.94 U	0.96 U	0.91 U
Dieldrin	UG/KG	0	0%	5	0	0	85	2.2 U	1.9 U	1.9 U	1.9 U	2 U	1.9 U
Endosulfan I	UG/KG	0	0%	2400	0	0	85	1.1 U	0.96 U	0.93 U	0.94 U	0.96 U	0.91 U
Endosulfan II	UG/KG	0	0%	2400	0	0	85	2.2 U	1.9 U	1.9 U	1.9 U	2 U	1.9 U
Endosulfan sulfate	UG/KG	0	0%	2400	0	0	85	2.2 U	1.9 U	1.9 U	1.9 U	2 U	1.9 U
Endrin	UG/KG	0	0%	14	0	0	85	2.2 U	1.9 U	1.9 U	1.9 U	2 U	1.9 U
Endrin aldehyde	UG/KG	0	0%		0	0	85	2.2 U	1.9 U	1.9 U	1.9 U	2 U	1.9 U
Endrin ketone	UG/KG	0	0%		0	0	85	2.2 U	1.9 U	1.9 U	1.9 U	2 U	1.9 U
Gamma-BHC/Lindane	UG/KG	0	0%	100	0	0	85	1.1 U	0.96 U	0.93 U	0.94 U	0.96 U	0.91 U
Gamma-Chlordane	UG/KG	0	0%		0	0	77	1.1 U	0.96 U	0.93 U	0.94 U	0.96 U	0.91 U
Heptachlor	UG/KG	0	0%	42	0	0	85	1.1 U	0.96 U	0.93 U	0.94 U	0.96 U	0.91 U
Heptachlor epoxide	UG/KG	0	0%		0	0	85	1.1 U	0.96 U	0.93 U	0.94 U	0.96 U	0.91 U
Methoxychlor	UG/KG	0	0%		0	0	85	11 U	9.5 U	9.2 U	9.3 U	9.5 U	9 U
Toxaphene	UG/KG	0	0%		0	0	85	22 U	19 U	19 U	19 U	19 U	18 U
Metals													
Aluminum	MG/KG	35100	100%		0	85	85	11500	13700	7340	13100	13300	9600
Antimony	MG/KG	0	0%		0	0	85	0.492 U	0.445 U	0.427 U	0.446 U	0.456 U	0.431 U
Arsenic	MG/KG	12.2	100%	13	0	85	85	4.9	6.4	4.5	5.9	5.9	4
Barium	MG/KG	304	100%	350	0	85	85	79.3	92.8	223	111	89.4	84.6
Beryllium	MG/KG	1.7	96%	7.2	0	82	85	0.609 J	0.778	0.403 J	0.773	0.706	0.518 J
Cadmium	MG/KG	2.5	34%	2.5	0	29	85	2.4	2.5	1.8	0.282 J	0.569 U	0.539 U
Calcium	MG/KG	186000	100%		0	85	85	50400	35700	108000	3550	24600	92200
Chromium	MG/KG	51.2	100%	30	2	85	85	19.8	**46.7**	17.9	19.8	19.7	15.2
Cobalt	MG/KG	29	100%		0	85	85	11	13.3	6.2	11.4	10.8	8.4
Copper	MG/KG	61.4	100%	50	1	85	85	20.7	29.1	18.7	30.5	23.7	19.4

Table B-1C
SEAD-12 Complete Confirmatory Soil Sample Analytical Results
Compared to NYSDEC Unrestricted Use Levels
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION								SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12
LOCATION ID								S12EXFL-N-9-01	S12EXFL-N-9-02	S12EXFL-O-10-01	S12EXPR-N-10-01	S12EXPR-N-10-02	S12EXPR-N-9-01
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								S12EXFL-N-9-01	S12EXFL-N-9-02	S12EXFL-O-10-01	S12EXPR-N-10-01	S12EXPR-N-10-02	S12EXPR-N-9-01
TOP OF SAMPLE								0	0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								7/30/2009	7/30/2009	7/30/2009	7/30/2009	7/30/2009	7/30/2009
QC CODE								SA	SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA
AREA								Pit A	Pit A	Pit A	Pit A	Pit A	Pit A
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**NYSDEC Unrestricted Use Level**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Cyanide	MG/KG	0	0%	27	0	0	85	0.6 U	0.42 U	0.42 U	0.42 U	0.5 U	0.5 U
Iron	MG/KG	56400	100%		0	85	85	21100	26800	15100	23400	23300	17800
Lead	MG/KG	33.3	100%	63	0	85	85	13.1	15.4	12.6	11.8	11.8	9
Magnesium	MG/KG	74400	100%		0	85	85	10300	9560	37400	4350	7280	11700
Manganese	MG/KG	1650	100%	1600	2	85	85	551	551	409	634	580	424
Mercury	MG/KG	0.05	95%	0.18	0	81	85	0.024 J	0.029 J	0.018 J	0.034 J	0.035 J	0.017 J
Nickel	MG/KG	75	100%	30	32	85	85	**33.4**	**39.6**	**34.7**	**37.8**	**31.8**	26.1
Potassium	MG/KG	5330	100%		0	85	85	1600	1630	1540	1360	1420	1550
Selenium	MG/KG	2	18%	3.9	0	15	85	1.2 U	1.1 U	0.185 U	1.1 U	1.6	1.1 U
Silver	MG/KG	0	0%	2	0	0	85	0.032 U	0.029 U	0.027 U	0.029 U	0.029 U	0.028 U
Sodium	MG/KG	390	100%		0	85	85	110 J	88.9 J	154	38.7 J	65 J	129
Thallium	MG/KG	0	0%		0	0	85	0.866 U	0.783 U	0.94 U	0.589 U	0.601 U	0.57 U
Vanadium	MG/KG	68	100%		0	85	85	20.3	22.9	13.6	24.3	22.8	17
Zinc	MG/KG	154	100%	109	2	85	85	65.1 J	73.6 J	62.7 J	55.7 J	54.2 J	46 J
TCLP													
TCLP 1,1-Dichloroethene	UG/L	0	0%		0	0	3						
TCLP 1,2-Dichloroethane	UG/L	0	0%		0	0	3						
TCLP Benzene	UG/L	0	0%		0	0	3						
TCLP Carbon tetrachloride	UG/L	0	0%		0	0	3						
TCLP Chlorobenzene	UG/L	0	0%		0	0	3						
TCLP Chloroform	UG/L	0	0%		0	0	3						
TCLP Methyl ethyl ketone	UG/L	0	0%		0	0	3						
TCLP Tetrachloroethene	UG/L	0	0%		0	0	3						
TCLP Trichloroethene	UG/L	0	0%		0	0	3						
TCLP Vinyl chloride	UG/L	0	0%		0	0	3						

Notes:
(1) The dataset of samples consists of the Inplace samples representing current site conditions
The overburden C1 samples were not included in this dataset.
(2) NYSDEC's Unrestricted Use Soil Cleanup Objective, 6 NYCRR Part 375-6.8(a).
(3) Sample/Duplicate pairs are evaluated as separate and discrete samples in this table
(4) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected; the associated reporting limit is approximate
R = the analytical result was rejected during data validation

Table B-1C
SEAD-12 Complete Confirmatory Soil Sample Analytical Results
Compared to NYSDEC Unrestricted Use Levels
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION								SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12
LOCATION ID								S12EXPR-O-10-01	S12EXPR-O-9-01	S12EXSW-N-10-01	S12EXSW-N-10-02	S12EXSW-N-9-01	S12EXSW-O-10-01
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								S12EXPR-O-10-01	S12EXPR-O-9-01	S12EXSW-N-10-01	S12EXSW-N-10-02	S12EXSW-N-9-01	S12EXSW-O-10-01
TOP OF SAMPLE								0	0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0	0	0	0
SAMPLE DATE								7/30/2009	7/30/2009	8/5/2009	8/5/2009	8/5/2009	8/5/2009
QC CODE								SA	SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA
AREA								Pit A	Pit A	Pit A	Pit A	Pit A	Pit A
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**NYSDEC Unrestricted Use Level**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Volatile Organic Compounds													
1,1,1-Trichloroethane	UG/KG	0	0%	680	0	0	85	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U
1,1,2,2-Tetrachloroethane	UG/KG	0	0%		0	0	85	0.36 U	0.36 U	0.46 U	0.45 U	0.46 U	0.45 U
1,1,2-Trichloroethane	UG/KG	0	0%		0	0	85	0.26 U	0.26 U	0.66 U	0.64 U	0.66 U	0.65 U
1,1-Dichloroethane	UG/KG	0	0%	270	0	0	85	0.18 U	0.18 U	0.53 U	0.51 U	0.53 U	0.51 U
1,1-Dichloroethene	UG/KG	0	0%	330	0	0	85	0.36 U	0.36 U	0.43 U	0.41 U	0.42 U	0.41 U
1,2-Dichloroethane	UG/KG	0	0%	20	0	0	85	0.29 U	0.29 U	0.4 U	0.39 U	0.4 U	0.39 U
1,2-Dichloropropane	UG/KG	0	0%		0	0	85	0.29 U	0.29 U	0.45 U	0.43 U	0.45 U	0.44 U
Acetone	UG/KG	9.6	13%	50	0	11	85	22 U	22 U	1.8 UJ	22 UJ	23 UJ	22 UJ
Benzene	UG/KG	0	0%	60	0	0	85	0.24 U	0.24 U	0.53 U	0.51 U	0.53 U	0.51 U
Bromodichloromethane	UG/KG	0	0%		0	0	85	0.24 U	0.24 U	0.59 U	0.57 U	0.58 U	0.57 U
Bromoform	UG/KG	0	0%		0	0	85	0.47 U	0.47 U	0.48 U	0.47 U	0.48 U	0.47 U
Carbon disulfide	UG/KG	2.5	2%		0	2	85	0.57 U	0.56 U	0.59 U	0.57 U	0.58 U	0.57 U
Carbon tetrachloride	UG/KG	0	0%	760	0	0	85	0.5 U	0.5 U	0.52 U	0.5 U	0.51 U	0.5 U
Chlorobenzene	UG/KG	0	0%	1100	0	0	85	0.25 U	0.25 U	0.55 U	0.53 U	0.55 U	0.54 U
Chlorodibromomethane	UG/KG	0	0%		0	0	85	0.37 U	0.37 U	0.38 U	0.37 U	0.38 U	0.37 U
Chloroethane	UG/KG	0	0%		0	0	85	0.48 U	0.48 U	0.55 U	0.53 U	0.55 U	0.54 U
Chloroform	UG/KG	0	0%	370	0	0	85	0.36 U	0.36 U	0.49 U	0.48 U	0.49 U	0.48 U
Cis-1,2-Dichloroethene	UG/KG	0.45	1%	250	0	1	85	0.25 U	0.25 U	0.36 U	0.35 U	0.36 U	0.35 U
Cis-1,3-Dichloropropene	UG/KG	0	0%		0	0	85	0.34 U	0.33 U	0.39 U	0.38 U	0.39 U	0.38 U
Ethyl benzene	UG/KG	2.7	1%	1000	0	1	85	0.97 U	0.97 U	1.1 U	0.98 U	1 U	0.98 U
Meta/Para Xylene	UG/KG	1.3	4%	260	0	3	85	0.7 U	0.7 U	1.1 U	1.1 U	1.1 U	1.1 U
Methyl bromide	UG/KG	0	0%		0	0	85	0.5 U	0.5 U	0.89 UJ	0.86 UJ	0.89 UJ	0.87 UJ
Methyl butyl ketone	UG/KG	0	0%		0	0	85	0.78 U	0.77 U	0.81 U	0.79 U	0.81 U	0.79 U
Methyl chloride	UG/KG	0	0%		0	0	85	0.34 U	0.33 U	0.65 U	0.63 U	0.65 U	0.64 U
Methyl ethyl ketone	UG/KG	1.6	5%	120	0	4	85	0.84 U	0.84 U	0.87 U	0.84 U	0.87 U	0.85 U
Methyl isobutyl ketone	UG/KG	0	0%		0	0	85	0.72 U	0.72 U	0.74 U	0.72 U	0.74 U	0.72 U
Methylene chloride	UG/KG	2.8	24%	50	0	20	85	0.42 U	0.42 U	0.44 U	5.5 U	5.7 U	5.5 U
Ortho Xylene	UG/KG	0	0%	260	0	0	85	0.7 U	0.7 U	0.72 U	0.7 U	0.72 U	0.7 U
Styrene	UG/KG	0.61	4%		0	3	85	0.31 U	0.31 U	0.52 U	0.5 U	0.51 U	0.5 U
Tetrachloroethene	UG/KG	0	0%	1300	0	0	85	0.54 U	0.54 U	0.56 U	0.55 U	0.56 U	0.55 U
Toluene	UG/KG	3.3	48%	700	0	41	85	0.36 U	0.55 J	0.49 J	1.1 J	0.37 U	0.94 J
Total Xylenes	UG/KG	0	0%	260	0	0	8						
Trans-1,2-Dichloroethene	UG/KG	0	0%	190	0	0	85	0.35 U	0.35 U	0.6 U	0.58 U	0.59 U	0.58 U
Trans-1,3-Dichloropropene	UG/KG	0	0%		0	0	85	0.4 U	0.4 U	0.43 U	0.41 U	0.42 U	0.41 U
Trichloroethene	UG/KG	1.2	16%	470	0	14	85	0.45 U	0.44 U	0.94 J	1.2 J	0.46 U	0.71 J
Vinyl chloride	UG/KG	0	0%	20	0	0	85	0.26 U	0.26 U	0.54 U	0.52 U	0.54 U	0.53 U
Semivolatile Organic Compounds													
1,2,4-Trichlorobenzene	UG/KG	0	0%		0	0	85	36 U	36 U	37 U	36 U	37 U	36 U
1,2-Dichlorobenzene	UG/KG	0	0%	1100	0	0	85	32 U	32 U	33 U	32 U	33 U	33 U
1,3-Dichlorobenzene	UG/KG	0	0%	2400	0	0	85	36 U	36 U	37 U	36 U	37 U	36 U
1,4-Dichlorobenzene	UG/KG	0	0%	1800	0	0	85	32 U	32 U	33 U	32 U	33 U	33 U
2,4,5-Trichlorophenol	UG/KG	0	0%		0	0	85	50 U	50 U	52 U	50 U	51 U	50 U
2,4,6-Trichlorophenol	UG/KG	0	0%		0	0	85	54 U	54 U	56 U	55 U	56 U	55 U
2,4-Dichlorophenol	UG/KG	0	0%		0	0	85	43 U	43 U	45 U	43 U	45 U	44 U
2,4-Dimethylphenol	UG/KG	0	0%		0	0	85	40 U	40 U	41 U	40 U	41 U	40 U
2,4-Dinitrophenol	UG/KG	0	0%		0	0	85	1100 U	1100 U	1100 UJ	1100 UJ	1100 UJ	1100 UJ
2,4-Dinitrotoluene	UG/KG	0	0%		0	0	85	59 U	59 U	61 U	59 U	61 U	59 U
2,6-Dinitrotoluene	UG/KG	0	0%		0	0	85	45 U	44 U	46 U	45 U	46 U	45 U

Table B-1C
SEAD-12 Complete Confirmatory Soil Sample Analytical Results
Compared to NYSDEC Unrestricted Use Levels
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION								SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12
LOCATION ID								S12EXPR-O-10-01	S12EXPR-O-9-01	S12EXSW-N-10-01	S12EXSW-N-10-02	S12EXSW-N-9-01	S12EXSW-O-10-01
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								S12EXPR-O-10-01	S12EXPR-O-9-01	S12EXSW-N-10-01	S12EXSW-N-10-02	S12EXSW-N-9-01	S12EXSW-O-10-01
TOP OF SAMPLE								0	0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0	0	0	0
SAMPLE DATE								7/30/2009	7/30/2009	8/5/2009	8/5/2009	8/5/2009	8/5/2009
QC CODE								SA	SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA
AREA								Pit A	Pit A	Pit A	Pit A	Pit A	Pit A
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**NYSDEC Unrestricted Use Level**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
2-Chloronaphthalene	UG/KG	0	0%		0	0	85	40 U	40 U	41 U	40 U	41 U	40 U
2-Chlorophenol	UG/KG	0	0%		0	0	85	42 U	42 U	44 U	42 U	44 U	43 U
2-Methylnaphthalene	UG/KG	0	0%		0	0	85	36 U	36 U	37 U	36 U	37 U	36 U
2-Methylphenol	UG/KG	0	0%	330	0	0	85	31 U	31 U	32 U	31 U	32 U	32 U
2-Nitroaniline	UG/KG	0	0%		0	0	85	1300 U	1300 U	1400 U	1300 U	1400 U	1300 U
2-Nitrophenol	UG/KG	0	0%		0	0	85	30 U	30 U	31 U	30 U	31 U	30 U
3,3'-Dichlorobenzidine	UG/KG	0	0%		0	0	85	42 U	42 U	44 U	42 U	44 U	43 U
3-Nitroaniline	UG/KG	0	0%		0	0	85	880 U	880 U	910 U	890 U	910 U	890 U
4,6-Dinitro-2-methylphenol	UG/KG	0	0%		0	0	85	1700 U	1600 U	1700 U	1700 U	1700 U	1700 U
4-Bromophenyl phenyl ether	UG/KG	0	0%		0	0	85	45 U	44 U	46 U	45 U	46 U	45 U
4-Chloro-3-methylphenol	UG/KG	0	0%		0	0	85	42 U	42 U	44 U	42 U	44 U	43 U
4-Chloroaniline	UG/KG	0	0%		0	0	85	41 U	41 U	43 U	41 U	42 U	41 U
4-Chlorophenyl phenyl ether	UG/KG	0	0%		0	0	85	43 U	43 U	45 U	43 U	45 U	44 U
4-Methylphenol	UG/KG	0	0%	330	0	0	8						
4-Nitroaniline	UG/KG	0	0%		0	0	85	1300 U	1300 U	1400 U	1300 U	1400 U	1400 U
4-Nitrophenol	UG/KG	0	0%		0	0	85	1200 U	1200 U	1200 U	1200 U	1200 U	1200 U
Acenaphthene	UG/KG	0	0%	20000	0	0	85	43 U	43 U	45 U	43 U	45 U	44 U
Acenaphthylene	UG/KG	0	0%	100000	0	0	85	40 U	40 U	41 U	40 U	41 U	40 U
Anthracene	UG/KG	0	0%	100000	0	0	85	41 U	41 U	43 U	41 U	42 U	41 U
Benzo(a)anthracene	UG/KG	0	0%	1000	0	0	85	43 U	43 U	45 U	43 U	45 U	44 U
Benzo(a)pyrene	UG/KG	0	0%	1000	0	0	85	37 U	37 U	38 U	37 U	38 U	37 U
Benzo(b)fluoranthene	UG/KG	0	0%	1000	0	0	85	52 U	52 U	54 U	52 U	54 U	53 U
Benzo(ghi)perylene	UG/KG	0	0%	100000	0	0	85	99 U	98 U	110 U	99 U	110 U	99 U
Benzo(k)fluoranthene	UG/KG	0	0%	800	0	0	85	53 U	53 U	55 U	53 U	55 U	54 U
Benzyl alcohol	UG/KG	140	38%		0	32	85	26 U	360 U	380 U	360 U	370 U	370 U
Bis(2-Chloroethoxy)methane	UG/KG	0	0%		0	0	85	54 U	54 U	56 U	55 U	56 U	55 U
Bis(2-Chloroethyl)ether	UG/KG	0	0%		0	0	85	42 U	42 U	44 U	42 U	44 U	43 U
Bis(2-Chloroisopropyl)ether	UG/KG	0	0%		0	0	85	51 U	51 U	53 U	51 U	53 U	51 U
Bis(2-Ethylhexyl)phthalate	UG/KG	120	11%		0	9	85	61 U	61 U	63 U	61 U	63 U	370 U
Butylbenzylphthalate	UG/KG	0	0%		0	0	85	45 U	44 U	46 U	45 U	46 U	45 U
Carbazole	UG/KG	0	0%		0	0	85	60 U	60 U	62 U	60 U	62 U	60 U
Chrysene	UG/KG	0	0%	1000	0	0	85	45 U	44 U	46 U	45 U	46 U	45 U
Di-n-butylphthalate	UG/KG	0	0%		0	0	85	150 U	150 U	160 U	150 U	160 U	150 U
Di-n-octylphthalate	UG/KG	0	0%		0	0	85	37 U	37 U	38 U	37 U	38 U	37 U
Dibenz(a,h)anthracene	UG/KG	0	0%	330	0	0	85	42 U	42 U	44 U	42 U	44 U	43 U
Dibenzofuran	UG/KG	0	0%	7000	0	0	85	40 U	40 U	41 U	40 U	41 U	40 U
Diethyl phthalate	UG/KG	0	0%		0	0	85	43 U	43 U	45 U	43 U	45 U	44 U
Dimethylphthalate	UG/KG	86	7%		0	6	85	43 U	43 U	45 U	43 U	45 U	44 U
Fluoranthene	UG/KG	74	2%	100000	0	2	85	43 U	43 U	45 U	43 U	45 U	44 U
Fluorene	UG/KG	0	0%	30000	0	0	85	36 U	36 U	37 U	36 U	37 U	36 U
Hexachlorobenzene	UG/KG	0	0%	330	0	0	85	41 U	41 U	43 U	41 U	42 U	41 U
Hexachlorobutadiene	UG/KG	0	0%		0	0	85	42 U	42 U	44 U	42 U	44 U	43 U
Hexachlorocyclopentadiene	UG/KG	0	0%		0	0	85	39 U	39 U	40 U	39 U	40 U	39 U
Hexachloroethane	UG/KG	0	0%		0	0	85	35 U	35 U	36 U	35 U	36 U	35 U
Indeno(1,2,3-cd)pyrene	UG/KG	0	0%	500	0	0	85	40 U	40 U	41 U	40 U	41 U	40 U
Isophorone	UG/KG	0	0%		0	0	85	43 U	43 U	45 U	43 U	45 U	44 U
N-Nitrosodimethylamine	UG/KG	0	0%		0	0	85	62 U	62 U	64 U	62 U	64 U	63 U
N-Nitrosodiphenylamine	UG/KG	0	0%		0	0	85	48 U	48 U	49 U	48 U	49 U	48 U
N-Nitrosodipropylamine	UG/KG	0	0%		0	0	85	48 U	48 U	49 U	48 U	49 U	48 U

Table B-1C
SEAD-12 Complete Confirmatory Soil Sample Analytical Results
Compared to NYSDEC Unrestricted Use Levels
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION								SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12
LOCATION ID								S12EXPR-O-10-01	S12EXPR-O-9-01	S12EXSW-N-10-01	S12EXSW-N-10-02	S12EXSW-N-9-01	S12EXSW-O-10-01
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								S12EXPR-O-10-01	S12EXPR-O-9-01	S12EXSW-N-10-01	S12EXSW-N-10-02	S12EXSW-N-9-01	S12EXSW-O-10-01
TOP OF SAMPLE								0	0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0	0	0	0
SAMPLE DATE								7/30/2009	7/30/2009	8/5/2009	8/5/2009	8/5/2009	8/5/2009
QC CODE								SA	SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA
AREA								Pit A	Pit A	Pit A	Pit A	Pit A	Pit A
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**NYSDEC Unrestricted Use Level**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Naphthalene	UG/KG	0	0%	12000	0	0	85	32 U	32 U	33 U	32 U	33 U	33 U
Nitrobenzene	UG/KG	0	0%		0	0	85	47 U	47 U	48 U	47 U	48 U	47 U
Pentachlorophenol	UG/KG	0	0%	800	0	0	85	1300 U	1300 U	1300 U	1300 U	1300 U	1300 U
Phenanthrene	UG/KG	52	2%	100000	0	2	85	45 U	44 U	46 U	45 U	46 U	45 U
Phenol	UG/KG	0	0%	330	0	0	85	42 U	42 U	44 U	42 U	44 U	43 U
Pyrene	UG/KG	64	2%	100000	0	2	85	39 U	39 U	40 U	39 U	40 U	39 U
PCBs													
Aroclor-1016	UG/KG	0	0%	100	0	0	87	19 U	19 U	20 U	19 U	20 U	19 U
Aroclor-1221	UG/KG	0	0%	100	0	0	87	42 U	42 U	44 U	42 U	44 U	43 U
Aroclor-1232	UG/KG	0	0%	100	0	0	87	19 U	19 U	20 U	19 U	20 U	19 U
Aroclor-1242	UG/KG	0	0%	100	0	0	87	29 U	29 U	30 U	29 U	30 U	29 U
Aroclor-1248	UG/KG	0	0%	100	0	0	87	19 U	19 U	20 U	19 U	20 U	19 U
Aroclor-1254	UG/KG	78	5%	100	0	4	87	19 U	19 U	20 U	19 U	20 U	19 U
Aroclor-1260	UG/KG	0	0%	100	0	0	87	34 U	33 U	35 U	34 U	34 U	34 U
Aroclor-1268	UG/KG	0	0%	100	0	0	87	19 U	19 U	20 U	19 U	20 U	19 U
Pesticides													
4,4'-DDD	UG/KG	6.9	1%	3.3	1	1	85	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
4,4'-DDE	UG/KG	5.9	4%	3.3	2	3	85	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
4,4'-DDT	UG/KG	9.8	4%	3.3	2	3	85	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
Aldrin	UG/KG	0	0%	5	0	0	85	0.93 U	0.93 U	0.96 U	0.93 U	0.96 U	0.94 U
Alpha-BHC	UG/KG	210	6%	20	2	5	85	0.93 U	0.93 U	0.96 U	0.93 U	0.96 U	0.94 U
Alpha-Chlordane	UG/KG	0	0%	94	0	0	85	0.93 U	0.93 U	0.96 U	0.93 U	0.96 U	0.94 U
Beta-BHC	UG/KG	63	1%	36	1	1	85	0.93 U	0.93 U	0.96 U	0.93 U	0.96 U	0.94 U
Chlordane (Alpha And Gamma Isomers)	UG/KG	0	0%	94	0	0	8						
Delta-BHC	UG/KG	61	4%	40	1	3	85	0.93 U	0.93 U	0.96 U	0.93 U	0.96 U	0.94 U
Dieldrin	UG/KG	0	0%	5	0	0	85	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
Endosulfan I	UG/KG	0	0%	2400	0	0	85	0.93 U	0.93 U	0.96 U	0.93 U	0.96 U	0.94 U
Endosulfan II	UG/KG	0	0%	2400	0	0	85	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
Endosulfan sulfate	UG/KG	0	0%	2400	0	0	85	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
Endrin	UG/KG	0	0%	14	0	0	85	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
Endrin aldehyde	UG/KG	0	0%		0	0	85	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
Endrin ketone	UG/KG	0	0%		0	0	85	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
Gamma-BHC/Lindane	UG/KG	0	0%	100	0	0	85	0.93 U	0.93 U	0.96 U	0.93 U	0.96 U	0.94 U
Gamma-Chlordane	UG/KG	0	0%		0	0	77	0.93 U	0.93 U	0.96 U	0.93 U	0.96 U	0.94 U
Heptachlor	UG/KG	0	0%	42	0	0	85	0.93 U	0.93 U	0.96 U	0.93 U	0.96 U	0.94 U
Heptachlor epoxide	UG/KG	0	0%		0	0	85	0.93 U	0.93 U	0.96 U	0.93 U	0.96 U	0.94 U
Methoxychlor	UG/KG	0	0%		0	0	85	9.2 U	9.2 U	9.5 U	9.2 U	9.5 U	9.3 U
Toxaphene	UG/KG	0	0%		0	0	85	19 U	19 U	19 U	19 U	19 U	19 U
Metals													
Aluminum	MG/KG	35100	100%		0	85	85	11500	9090	12100	9690	10400	9840
Antimony	MG/KG	0	0%		0	0	85	0.432 U	0.439 U	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ
Arsenic	MG/KG	12.2	100%	13	0	85	85	5.2	4.2	3.7	5.8	3.6	3
Barium	MG/KG	304	100%	350	0	85	85	63.2	66.5	81.4	81	90.7	68.3
Beryllium	MG/KG	1.7	96%	7.2	0	82	85	0.625	0.485 J	0.64	0.56	0.57 J	0.51 J
Cadmium	MG/KG	2.5	34%	2.5	0	29	85	0.54 U	0.549 U	0.57 U	1.13	0.57 U	0.55 U
Calcium	MG/KG	186000	100%		0	85	85	50800	98800	49500	89700	78800	89600
Chromium	MG/KG	51.2	100%	30	2	85	85	17.8	15.1	18.9	20.7	17.1	15.7
Cobalt	MG/KG	29	100%		0	85	85	10.3	8.1	9.1	11.1	8.8	8.8
Copper	MG/KG	61.4	100%	50	1	85	85	24.9	21.3	23.2	41	24.5	22.8

Table B-1C
SEAD-12 Complete Confirmatory Soil Sample Analytical Results
Compared to NYSDEC Unrestricted Use Levels
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION								SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12
LOCATION ID								S12EXPR-O-10-01	S12EXPR-O-9-01	S12EXSW-N-10-01	S12EXSW-N-10-02	S12EXSW-N-9-01	S12EXSW-O-10-01
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								S12EXPR-O-10-01	S12EXPR-O-9-01	S12EXSW-N-10-01	S12EXSW-N-10-02	S12EXSW-N-9-01	S12EXSW-O-10-01
TOP OF SAMPLE								0	0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0	0	0	0
SAMPLE DATE								7/30/2009	7/30/2009	8/5/2009	8/5/2009	8/5/2009	8/5/2009
QC CODE								SA	SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA
AREA								Pit A	Pit A	Pit A	Pit A	Pit A	Pit A
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**NYSDEC Unrestricted Use Level**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Cyanide	MG/KG	0	0%	27	0	0	85	0.42 U	0.42 U	0.42 U	0.5 U	0.5 U	0.42 U
Iron	MG/KG	56400	100%		0	85	85	21400	18500	20100	19700	19300	17300
Lead	MG/KG	33.3	100%	63	0	85	85	10.1	9.1	16.4 J	33.3 J	9.2 J	8.3 J
Magnesium	MG/KG	74400	100%		0	85	85	10900	16300	11600 J	14600 J	12000 J	14400 J
Manganese	MG/KG	1650	100%	1600	2	85	85	548	376	536	415	472	435
Mercury	MG/KG	0.05	95%	0.18	0	81	85	0.021 J	0.018 J	0.039 J	0.021 J	0.018 J	0.017 J
Nickel	MG/KG	75	100%	30	32	85	85	**30.2**	25.6	26.8	**36.9**	29.7	25.4
Potassium	MG/KG	5330	100%		0	85	85	1470	1730	1680 J	1660 J	1650 J	1770 J
Selenium	MG/KG	2	18%	3.9	0	15	85	1.1 U	1.1 U	1.1 U	0.2 U	0.2 U	0.2 U
Silver	MG/KG	0	0%	2	0	0	85	0.028 U	0.028 U	0.3 U	0.3 U	0.3 U	0.3 U
Sodium	MG/KG	390	100%		0	85	85	94.5 J	134	90 J	140	130	140
Thallium	MG/KG	0	0%		0	0	85	0.76 U	0.58 U	0.7 U	0.2 U	0.7 U	0.2 U
Vanadium	MG/KG	68	100%		0	85	85	20.8	16.4	21.6	19.7	18.8	18.2
Zinc	MG/KG	154	100%	109	2	85	85	45.1 J	45.7 J	57.8 J	49.5 J	51.1 J	49.4 J
TCLP													
TCLP 1,1-Dichloroethene	UG/L	0	0%		0	0	3						
TCLP 1,2-Dichloroethane	UG/L	0	0%		0	0	3						
TCLP Benzene	UG/L	0	0%		0	0	3						
TCLP Carbon tetrachloride	UG/L	0	0%		0	0	3						
TCLP Chlorobenzene	UG/L	0	0%		0	0	3						
TCLP Chloroform	UG/L	0	0%		0	0	3						
TCLP Methyl ethyl ketone	UG/L	0	0%		0	0	3						
TCLP Tetrachloroethene	UG/L	0	0%		0	0	3						
TCLP Trichloroethene	UG/L	0	0%		0	0	3						
TCLP Vinyl chloride	UG/L	0	0%		0	0	3						

Notes:
(1) The dataset of samples consists of the Inplace samples representing current site conditions
The overburden C1 samples were not included in this dataset.
(2) NYSDEC's Unrestricted Use Soil Cleanup Objective, 6 NYCRR Part 375-6.8(a).
(3) Sample/Duplicate pairs are evaluated as separate and discrete samples in this table
(4) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected; the associated reporting limit is approximate
R = the analytical result was rejected during data validation

Table B-1C
SEAD-12 Complete Confirmatory Soil Sample Analytical Results
Compared to NYSDEC Unrestricted Use Levels
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION								SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12
LOCATION ID								S12EXSW-O-9-01	S12EXFL-O-8-01	S12EXPR-O-7-01	S12EXPR-O-8-02	S12EXPR-O-8-03	S12EXPR-O-8-03
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								S12EXSW-O-9-01	S12EXFL-O-8-01	S12EXPR-O-7-01	S12EXPR-O-8-02	S12EXPR-O-8-04	S12EXPR-O-8-03
TOP OF SAMPLE								0	0	0	0	0	0
BOTTOM OF SAMPLE								0	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								8/5/2009	8/13/2009	7/30/2009	7/30/2009	7/30/2009	7/30/2009
QC CODE								SA	SA	SA	SA	DU	SA
STUDY ID								RA	RA	RA	RA	RA	RA
AREA								Pit A	Pit B	Pit B	Pit B	Pit B	Pit B
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**NYSDEC Unrestricted Use Level**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Volatile Organic Compounds													
1,1,1-Trichloroethane	UG/KG	0	0%	680	0	0	85	0.24 U	0.3 UJ	0.26 U	0.24 U	0.26 U	0.25 U
1,1,2,2-Tetrachloroethane	UG/KG	0	0%		0	0	85	0.45 U	0.56 UJ	0.39 U	0.36 U	0.39 U	0.38 U
1,1,2-Trichloroethane	UG/KG	0	0%		0	0	85	0.65 U	0.81 UJ	0.29 U	0.26 U	0.28 U	0.28 U
1,1-Dichloroethane	UG/KG	0	0%	270	0	0	85	0.52 U	0.64 UJ	0.2 U	0.18 U	0.2 U	0.19 U
1,1-Dichloroethene	UG/KG	0	0%	330	0	0	85	0.42 U	0.52 UJ	0.39 U	0.36 U	0.39 U	0.38 U
1,2-Dichloroethane	UG/KG	0	0%	20	0	0	85	0.4 U	0.49 UJ	0.32 U	0.3 U	0.32 U	0.31 U
1,2-Dichloropropane	UG/KG	0	0%		0	0	85	0.44 U	0.54 UJ	0.32 U	0.3 U	0.32 U	0.31 U
Acetone	UG/KG	9.6	13%	50	0	11	85	22 UJ	2.1 UJ	24 U	22 U	1.8 U	1.8 U
Benzene	UG/KG	0	0%	60	0	0	85	0.52 U	0.64 UJ	0.26 U	0.24 U	0.26 U	0.25 U
Bromodichloromethane	UG/KG	0	0%		0	0	85	0.57 U	0.71 UJ	0.26 U	0.24 U	0.26 U	0.25 U
Bromoform	UG/KG	0	0%		0	0	85	0.47 U	0.59 UJ	0.52 U	0.47 U	0.51 U	0.5 U
Carbon disulfide	UG/KG	2.5	2%		0	2	85	0.57 U	0.71 UJ	0.63 U	0.57 U	0.61 U	0.61 U
Carbon tetrachloride	UG/KG	0	0%	760	0	0	85	0.51 U	0.63 UJ	0.55 U	0.51 U	0.54 U	0.54 U
Chlorobenzene	UG/KG	0	0%	1100	0	0	85	0.54 U	0.67 UJ	0.27 U	0.25 U	0.27 U	0.26 U
Chlorodibromomethane	UG/KG	0	0%		0	0	85	0.37 U	0.46 UJ	0.41 U	0.37 U	0.4 U	0.39 U
Chloroethane	UG/KG	0	0%		0	0	85	0.54 U	0.67 UJ	0.53 U	0.48 U	0.52 U	0.51 U
Chloroform	UG/KG	0	0%	370	0	0	85	0.49 U	0.6 UJ	0.39 U	0.36 U	0.39 U	0.38 U
Cis-1,2-Dichloroethene	UG/KG	0.45	1%	250	0	1	85	0.35 U	0.43 UJ	0.27 U	0.25 U	0.27 U	0.26 U
Cis-1,3-Dichloropropene	UG/KG	0	0%		0	0	85	0.38 U	0.48 UJ	0.37 U	0.34 U	0.36 U	0.36 UJ
Ethyl benzene	UG/KG	2.7	1%	1000	0	1	85	0.99 U	1.3 UJ	1.1 U	0.99 U	1.1 U	1.1 U
Meta/Para Xylene	UG/KG	1.3	4%	260	0	3	85	1.1 U	1.3 UJ	0.77 U	0.71 U	0.76 U	0.75 U
Methyl bromide	UG/KG	0	0%		0	0	85	0.88 UJ	1.1 UJ	0.55 U	0.51 U	0.54 U	0.54 UJ
Methyl butyl ketone	UG/KG	0	0%		0	0	85	0.8 U	0.99 UJ	0.86 U	0.79 U	0.84 U	0.83 UJ
Methyl chloride	UG/KG	0	0%		0	0	85	0.64 U	0.79 UJ	0.37 U	0.34 U	0.36 U	0.36 U
Methyl ethyl ketone	UG/KG	1.6	5%	120	0	4	85	0.85 U	1.1 UJ	0.93 U	0.85 U	0.91 U	0.9 UJ
Methyl isobutyl ketone	UG/KG	0	0%		0	0	85	0.73 U	0.9 UJ	0.8 U	0.73 U	0.78 U	0.77 UJ
Methylene chloride	UG/KG	2.8	24%	50	0	20	85	5.6 U	0.53 UJ	0.47 U	0.43 U	0.46 U	0.45 U
Ortho Xylene	UG/KG	0	0%	260	0	0	85	0.71 U	0.88 UJ	0.77 U	0.71 U	0.76 U	0.75 U
Styrene	UG/KG	0.61	4%		0	3	85	0.51 U	0.63 UJ	0.35 U	0.32 U	0.34 U	0.33 UJ
Tetrachloroethene	UG/KG	0	0%	1300	0	0	85	0.55 U	0.68 UJ	0.6 U	0.55 U	0.59 U	0.58 U
Toluene	UG/KG	3.3	48%	700	0	41	85	0.36 U	0.45 UJ	0.39 U	0.36 U	0.39 U	0.38 U
Total Xylenes	UG/KG	0	0%	260	0	0	8						
Trans-1,2-Dichloroethene	UG/KG	0	0%	190	0	0	85	0.59 U	0.72 UJ	0.38 U	0.35 U	0.37 U	0.37 U
Trans-1,3-Dichloropropene	UG/KG	0	0%		0	0	85	0.42 U	0.52 UJ	0.44 U	0.41 U	0.43 U	0.43 UJ
Trichloroethene	UG/KG	1.2	16%	470	0	14	85	0.53 J	0.56 UJ	0.49 U	0.45 U	0.54 J	0.55 J
Vinyl chloride	UG/KG	0	0%	20	0	0	85	0.53 U	0.66 UJ	0.29 U	0.26 U	0.28 U	0.28 U
Semivolatile Organic Compounds													
1,2,4-Trichlorobenzene	UG/KG	0	0%		0	0	85	36 U	45 UJ	39 U	36 U	39 U	38 U
1,2-Dichlorobenzene	UG/KG	0	0%	1100	0	0	85	33 U	41 UJ	36 U	33 U	35 U	35 U
1,3-Dichlorobenzene	UG/KG	0	0%	2400	0	0	85	36 U	45 UJ	39 U	36 U	39 U	38 U
1,4-Dichlorobenzene	UG/KG	0	0%	1800	0	0	85	33 U	41 UJ	36 U	33 U	35 U	35 U
2,4,5-Trichlorophenol	UG/KG	0	0%		0	0	85	51 U	63 UJ	55 U	51 U	54 U	54 U
2,4,6-Trichlorophenol	UG/KG	0	0%		0	0	85	55 U	68 UJ	60 U	55 U	59 U	58 U
2,4-Dichlorophenol	UG/KG	0	0%		0	0	85	44 U	54 UJ	48 U	44 U	47 U	46 U
2,4-Dimethylphenol	UG/KG	0	0%		0	0	85	41 U	50 UJ	44 U	41 U	43 U	43 U
2,4-Dinitrophenol	UG/KG	0	0%		0	0	85	1100 UJ	1400 UJ	1200 U	1100 U	1200 U	1200 U
2,4-Dinitrotoluene	UG/KG	0	0%		0	0	85	60 U	74 UJ	65 U	60 U	64 U	63 U
2,6-Dinitrotoluene	UG/KG	0	0%		0	0	85	45 U	56 UJ	49 U	45 U	48 U	48 U

Table B-1C
SEAD-12 Complete Confirmatory Soil Sample Analytical Results
Compared to NYSDEC Unrestricted Use Levels
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION								SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12
LOCATION ID								S12EXSW-O-9-01	S12EXFL-O-8-01	S12EXPR-O-7-01	S12EXPR-O-8-02	S12EXPR-O-8-03	S12EXPR-O-8-03
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								S12EXSW-O-9-01	S12EXFL-O-8-01	S12EXPR-O-7-01	S12EXPR-O-8-02	S12EXPR-O-8-04	S12EXPR-O-8-03
TOP OF SAMPLE								0	0	0	0	0	0
BOTTOM OF SAMPLE								0	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								8/5/2009	8/13/2009	7/30/2009	7/30/2009	7/30/2009	7/30/2009
QC CODE								SA	SA	SA	SA	DU	SA
STUDY ID								RA	RA	RA	RA	RA	RA
AREA								Pit A	Pit B	Pit B	Pit B	Pit B	Pit B
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**NYSDEC Unrestricted Use Level**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
2-Chloronaphthalene	UG/KG	0	0%		0	0	85	41 U	50 UJ	44 U	41 U	43 U	43 U
2-Chlorophenol	UG/KG	0	0%		0	0	85	43 U	53 UJ	47 U	43 U	46 U	45 U
2-Methylnaphthalene	UG/KG	0	0%		0	0	85	36 U	45 UJ	39 U	36 U	39 U	38 U
2-Methylphenol	UG/KG	0	0%	330	0	0	85	32 U	39 UJ	35 U	32 U	34 U	33 U
2-Nitroaniline	UG/KG	0	0%		0	0	85	1300 U	1600 UJ	1500 U	1300 U	1400 U	1400 U
2-Nitrophenol	UG/KG	0	0%		0	0	85	31 U	38 UJ	33 U	31 U	33 U	32 U
3,3'-Dichlorobenzidine	UG/KG	0	0%		0	0	85	43 U	53 UJ	47 U	43 U	46 U	45 U
3-Nitroaniline	UG/KG	0	0%		0	0	85	900 U	1200 UJ	980 U	900 U	960 U	950 U
4,6-Dinitro-2-methylphenol	UG/KG	0	0%		0	0	85	1700 U	2100 UJ	1800 U	1700 U	1800 U	1800 U
4-Bromophenyl phenyl ether	UG/KG	0	0%		0	0	85	45 U	56 UJ	49 U	45 U	48 U	48 U
4-Chloro-3-methylphenol	UG/KG	0	0%		0	0	85	43 U	53 UJ	47 U	43 U	46 U	45 U
4-Chloroaniline	UG/KG	0	0%		0	0	85	42 U	52 UJ	46 U	42 U	45 U	44 U
4-Chlorophenyl phenyl ether	UG/KG	0	0%		0	0	85	44 U	54 UJ	48 U	44 U	47 U	46 U
4-Methylphenol	UG/KG	0	0%	330	0	0	8						
4-Nitroaniline	UG/KG	0	0%		0	0	85	1400 U	1700 UJ	1500 U	1400 U	1500 U	1400 U
4-Nitrophenol	UG/KG	0	0%		0	0	85	1200 U	1500 UJ	1300 U	1200 U	1300 U	1300 U
Acenaphthene	UG/KG	0	0%	20000	0	0	85	44 U	54 UJ	48 U	44 U	47 U	46 U
Acenaphthylene	UG/KG	0	0%	100000	0	0	85	41 U	50 UJ	44 U	41 U	43 U	43 U
Anthracene	UG/KG	0	0%	100000	0	0	85	42 U	52 UJ	46 U	42 U	45 U	44 U
Benzo(a)anthracene	UG/KG	0	0%	1000	0	0	85	44 U	54 UJ	48 U	44 U	47 U	46 U
Benzo(a)pyrene	UG/KG	0	0%	1000	0	0	85	37 U	46 UJ	41 U	37 U	40 U	39 U
Benzo(b)fluoranthene	UG/KG	0	0%	1000	0	0	85	53 U	66 UJ	58 U	53 U	57 U	56 U
Benzo(ghi)perylene	UG/KG	0	0%	100000	0	0	85	100 U	130 UJ	110 U	100 U	110 U	110 U
Benzo(k)fluoranthene	UG/KG	0	0%	800	0	0	85	54 U	67 UJ	59 U	54 U	58 U	57 U
Benzyl alcohol	UG/KG	140	38%		0	32	85	370 U	32 UJ	29 U	26 U	28 UJ	390 UJ
Bis(2-Chloroethoxy)methane	UG/KG	0	0%		0	0	85	55 U	68 UJ	60 U	55 U	59 U	58 U
Bis(2-Chloroethyl)ether	UG/KG	0	0%		0	0	85	43 U	53 UJ	47 U	43 U	46 U	45 U
Bis(2-Chloroisopropyl)ether	UG/KG	0	0%		0	0	85	52 U	64 UJ	57 U	52 U	55 U	55 U
Bis(2-Ethylhexyl)phthalate	UG/KG	120	11%		0	9	85	370 U	77 UJ	67 U	62 U	66 U	65 U
Butylbenzylphthalate	UG/KG	0	0%		0	0	85	45 U	56 UJ	49 U	45 U	48 U	48 U
Carbazole	UG/KG	0	0%		0	0	85	61 U	75 UJ	66 U	61 U	65 U	64 U
Chrysene	UG/KG	0	0%	1000	0	0	85	45 U	56 UJ	49 U	45 U	48 U	48 U
Di-n-butylphthalate	UG/KG	0	0%		0	0	85	160 U	190 UJ	170 U	160 U	170 U	160 U
Di-n-octylphthalate	UG/KG	0	0%		0	0	85	37 U	46 UJ	41 U	37 U	40 U	39 U
Dibenz(a,h)anthracene	UG/KG	0	0%	330	0	0	85	43 U	53 UJ	47 U	43 U	46 U	45 U
Dibenzofuran	UG/KG	0	0%	7000	0	0	85	41 U	50 UJ	44 U	41 U	43 U	43 U
Diethyl phthalate	UG/KG	0	0%		0	0	85	44 U	54 UJ	48 U	44 U	47 U	46 U
Dimethylphthalate	UG/KG	86	7%		0	6	85	44 U	54 UJ	48 U	44 U	47 U	46 U
Fluoranthene	UG/KG	74	2%	100000	0	2	85	44 U	54 UJ	48 U	44 U	47 U	46 U
Fluorene	UG/KG	0	0%	30000	0	0	85	36 U	45 UJ	39 U	36 U	39 U	38 U
Hexachlorobenzene	UG/KG	0	0%	330	0	0	85	42 U	52 UJ	46 U	42 U	45 U	44 U
Hexachlorobutadiene	UG/KG	0	0%		0	0	85	43 U	53 UJ	47 U	43 U	46 U	45 U
Hexachlorocyclopentadiene	UG/KG	0	0%		0	0	85	40 U	49 UJ	43 U	40 U	42 U	42 U
Hexachloroethane	UG/KG	0	0%		0	0	85	35 U	43 UJ	38 U	35 U	37 U	37 U
Indeno(1,2,3-cd)pyrene	UG/KG	0	0%	500	0	0	85	41 U	50 UJ	44 U	41 U	43 U	43 U
Isophorone	UG/KG	0	0%		0	0	85	44 U	54 UJ	48 U	44 U	47 U	46 U
N-Nitrosodimethylamine	UG/KG	0	0%		0	0	85	63 U	78 UJ	69 U	63 U	67 U	66 U
N-Nitrosodiphenylamine	UG/KG	0	0%		0	0	85	49 U	60 UJ	53 U	48 U	52 U	51 U
N-Nitrosodipropylamine	UG/KG	0	0%		0	0	85	49 U	60 UJ	53 U	48 U	52 U	51 U

Table B-1C
SEAD-12 Complete Confirmatory Soil Sample Analytical Results
Compared to NYSDEC Unrestricted Use Levels
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION								SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12
LOCATION ID								S12EXSW-O-9-01	S12EXFL-O-8-01	S12EXPR-O-7-01	S12EXPR-O-8-02	S12EXPR-O-8-03	S12EXPR-O-8-03
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								S12EXSW-O-9-01	S12EXFL-O-8-01	S12EXPR-O-7-01	S12EXPR-O-8-02	S12EXPR-O-8-04	S12EXPR-O-8-03
TOP OF SAMPLE								0	0	0	0	0	0
BOTTOM OF SAMPLE								0	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								8/5/2009	8/13/2009	7/30/2009	7/30/2009	7/30/2009	7/30/2009
QC CODE								SA	SA	SA	SA	DU	SA
STUDY ID								RA	RA	RA	RA	RA	RA
AREA								Pit A	Pit B	Pit B	Pit B	Pit B	Pit B
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**NYSDEC Unrestricted Use Level**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Naphthalene	UG/KG	0	0%	12000	0	0	85	33 U	41 UJ	36 U	33 U	35 U	35 U
Nitrobenzene	UG/KG	0	0%		0	0	85	47 U	59 UJ	52 U	47 U	51 U	50 U
Pentachlorophenol	UG/KG	0	0%	800	0	0	85	1300 U	1600 UJ	1400 U	1300 U	1400 U	1300 U
Phenanthrene	UG/KG	52	2%	100000	0	2	85	45 U	56 UJ	49 U	45 U	48 U	48 U
Phenol	UG/KG	0	0%	330	0	0	85	43 U	53 UJ	47 U	43 U	46 U	45 U
Pyrene	UG/KG	64	2%	100000	0	2	85	40 U	49 UJ	43 U	40 U	42 U	42 U
PCBs													
Aroclor-1016	UG/KG	0	0%	100	0	0	87	19 U	24 UJ	21 U	19 U	21 U	21 U
Aroclor-1221	UG/KG	0	0%	100	0	0	87	43 U	53 UJ	47 U	43 U	46 U	45 U
Aroclor-1232	UG/KG	0	0%	100	0	0	87	19 U	24 UJ	21 U	19 U	21 U	21 U
Aroclor-1242	UG/KG	0	0%	100	0	0	87	30 U	36 UJ	32 U	30 U	32 U	31 U
Aroclor-1248	UG/KG	0	0%	100	0	0	87	19 U	24 UJ	21 U	19 U	21 U	21 U
Aroclor-1254	UG/KG	78	5%	100	0	4	87	19 U	24 UJ	21 U	19 U	49 J	21 U
Aroclor-1260	UG/KG	0	0%	100	0	0	87	34 U	42 UJ	37 U	34 U	36 U	36 U
Aroclor-1268	UG/KG	0	0%	100	0	0	87	19 U	24 UJ	21 U	19 U	21 U	21 U
Pesticides													
4,4'-DDD	UG/KG	6.9	1%	3.3	1	1	85	1.9 U	2.4 UJ	2.1 U	1.9 U	2 U	2 U
4,4'-DDE	UG/KG	5.9	4%	3.3	2	3	85	1.9 U	2.4 UJ	2.1 U	1.9 U	2 U	2 U
4,4'-DDT	UG/KG	9.8	4%	3.3	2	3	85	1.9 U	2.4 UJ	2.1 U	1.9 U	2 U	2 U
Aldrin	UG/KG	0	0%	5	0	0	85	0.94 U	1.2 UJ	1.1 U	0.94 U	1.1 U	0.99 U
Alpha-BHC	UG/KG	210	6%	20	2	5	85	0.94 U	1.2 UJ	1.1 U	0.94 U	1.1 U	0.99 U
Alpha-Chlordane	UG/KG	0	0%	94	0	0	85	0.94 U	1.2 UJ	1.1 U	0.94 U	1.1 U	0.99 U
Beta-BHC	UG/KG	63	1%	36	1	1	85	0.94 U	1.2 UJ	1.1 U	0.94 U	1.1 U	0.99 U
Chlordane (Alpha And Gamma Isomers)	UG/KG	0	0%	94	0	0	8						
Delta-BHC	UG/KG	61	4%	40	1	3	85	0.94 U	1.2 UJ	1.1 U	0.94 U	1.1 U	0.99 U
Dieldrin	UG/KG	0	0%	5	0	0	85	1.9 U	2.4 UJ	2.1 U	1.9 U	2 U	2 U
Endosulfan I	UG/KG	0	0%	2400	0	0	85	0.94 U	1.2 UJ	1.1 U	0.94 U	1.1 U	0.99 U
Endosulfan II	UG/KG	0	0%	2400	0	0	85	1.9 U	2.4 UJ	2.1 U	1.9 U	2 U	2 U
Endosulfan sulfate	UG/KG	0	0%	2400	0	0	85	1.9 U	2.4 UJ	2.1 U	1.9 U	2 U	2 U
Endrin	UG/KG	0	0%	14	0	0	85	1.9 U	2.4 UJ	2.1 U	1.9 U	2 U	2 U
Endrin aldehyde	UG/KG	0	0%		0	0	85	1.9 U	2.4 UJ	2.1 U	1.9 U	2 U	2 U
Endrin ketone	UG/KG	0	0%		0	0	85	1.9 U	2.4 UJ	2.1 U	1.9 U	2 U	2 U
Gamma-BHC/Lindane	UG/KG	0	0%	100	0	0	85	0.94 U	1.2 UJ	1.1 U	0.94 U	1.1 U	0.99 U
Gamma-Chlordane	UG/KG	0	0%		0	0	77	0.94 U	1.2 UJ	1.1 U	0.94 U	1.1 U	0.99 U
Heptachlor	UG/KG	0	0%	42	0	0	85	0.94 U	1.2 UJ	1.1 U	0.94 U	1.1 U	0.99 U
Heptachlor epoxide	UG/KG	0	0%		0	0	85	0.94 U	1.2 UJ	1.1 U	0.94 U	1.1 U	0.99 U
Methoxychlor	UG/KG	0	0%		0	0	85	9.4 U	12 UJ	11 U	9.4 U	10 U	9.9 U
Toxaphene	UG/KG	0	0%		0	0	85	19 U	24 UJ	21 U	19 U	20 U	20 U
Metals													
Aluminum	MG/KG	35100	100%		0	85	85	9540	12700 J	13800	12400	13700	12800
Antimony	MG/KG	0	0%		0	0	85	0.5 UJ	0.55 UJ	0.482 U	0.438 U	0.468 U	0.466 U
Arsenic	MG/KG	12.2	100%	13	0	85	85	3.2	1.9 J	5.5	5	4.7	4.3
Barium	MG/KG	304	100%	350	0	85	85	75.4	71.4 J	100	80.3	86.9	82.3
Beryllium	MG/KG	1.7	96%	7.2	0	82	85	0.52 J	0.6 J	0.741	0.71	0.685	0.622
Cadmium	MG/KG	2.5	34%	2.5	0	29	85	0.68	0.68 UJ	0.603 U	0.547 U	0.585 U	0.583 U
Calcium	MG/KG	186000	100%		0	85	85	119000	20600 J	7530	13400	6070 J	3580 J
Chromium	MG/KG	51.2	100%	30	2	85	85	16.6	18.7 J	19.3	19	18.4	16.9
Cobalt	MG/KG	29	100%		0	85	85	9.9	10.6 J	14	10.5	10.5	12.1
Copper	MG/KG	61.4	100%	50	1	85	85	21.3	19 J	19	24.8	15.6	14.8

Table B-1C
SEAD-12 Complete Confirmatory Soil Sample Analytical Results
Compared to NYSDEC Unrestricted Use Levels
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION								SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12
LOCATION ID								S12EXSW-O-9-01	S12EXFL-O-8-01	S12EXPR-O-7-01	S12EXPR-O-8-02	S12EXPR-O-8-03	S12EXPR-O-8-03
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								S12EXSW-O-9-01	S12EXFL-O-8-01	S12EXPR-O-7-01	S12EXPR-O-8-02	S12EXPR-O-8-04	S12EXPR-O-8-03
TOP OF SAMPLE								0	0	0	0	0	0
BOTTOM OF SAMPLE								0	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								8/5/2009	8/13/2009	7/30/2009	7/30/2009	7/30/2009	7/30/2009
QC CODE								SA	SA	SA	SA	DU	SA
STUDY ID								RA	RA	RA	RA	RA	RA
AREA								Pit A	Pit B	Pit B	Pit B	Pit B	Pit B
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**NYSDEC Unrestricted Use Level**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Cyanide	MG/KG	0	0%	27	0	0	85	0.42 U	0.5 UJ	0.5 U	0.42 U	0.5 U	0.42 U
Iron	MG/KG	56400	100%		0	85	85	17700	19100 J	21900	22500	22500	19500
Lead	MG/KG	33.3	100%	63	0	85	85	8.7 J	13.3 J	20.8	11.8	15.5	14.8
Magnesium	MG/KG	74400	100%		0	85	85	15900 J	6740 J	4540	6750	4040	3340
Manganese	MG/KG	1650	100%	1600	2	85	85	493	550 J	1030	518	736	660
Mercury	MG/KG	0.05	95%	0.18	0	81	85	0.016 J	0.04 J	0.047	0.03 J	0.035 J	0.034 J
Nickel	MG/KG	75	100%	30	32	85	85	27.9	27.3 J	25.4	**31.5**	22.9	20.9
Potassium	MG/KG	5330	100%		0	85	85	1770 J	1320 J	1330	1520	1230	1070
Selenium	MG/KG	2	18%	3.9	0	15	85	0.2 U	1.37 UJ	1.9	1.1 U	1.2 U	1.2 U
Silver	MG/KG	0	0%	2	0	0	85	0.3 U	1.37 UJ	0.031 U	0.028 U	0.03 U	0.03 U
Sodium	MG/KG	390	100%		0	85	85	180	63.8 J	42.1 J	50.8 J	38.4 J	33.2 J
Thallium	MG/KG	0	0%		0	0	85	0.6 U	0.72 UJ	1.1 U	0.578 U	0.824 U	0.616 U
Vanadium	MG/KG	68	100%		0	85	85	17	20.8 J	24.1	21.6	23.6	21.4
Zinc	MG/KG	154	100%	109	2	85	85	47.5 J	61.1 J	62.4 J	57.4 J	58.7 J	51.9 J
TCLP													
TCLP 1,1-Dichloroethene	UG/L	0	0%		0	0	3						
TCLP 1,2-Dichloroethane	UG/L	0	0%		0	0	3						
TCLP Benzene	UG/L	0	0%		0	0	3						
TCLP Carbon tetrachloride	UG/L	0	0%		0	0	3						
TCLP Chlorobenzene	UG/L	0	0%		0	0	3						
TCLP Chloroform	UG/L	0	0%		0	0	3						
TCLP Methyl ethyl ketone	UG/L	0	0%		0	0	3						
TCLP Tetrachloroethene	UG/L	0	0%		0	0	3						
TCLP Trichloroethene	UG/L	0	0%		0	0	3						
TCLP Vinyl chloride	UG/L	0	0%		0	0	3						

Notes:
(1) The dataset of samples consists of the Inplace samples representing current site conditions
The overburden C1 samples were not included in this dataset.
(2) NYSDEC's Unrestricted Use Soil Cleanup Objective, 6 NYCRR Part 375-6.8(a).
(3) Sample/Duplicate pairs are evaluated as separate and discrete samples in this table
(4) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected; the associated reporting limit is approximate
R = the analytical result was rejected during data validation

Table B-1C
SEAD-12 Complete Confirmatory Soil Sample Analytical Results
Compared to NYSDEC Unrestricted Use Levels
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION								SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12
LOCATION ID								S12EXPR-O-8-06	S12EXSW-O-7-01	S12EXSW-O-8-02	S12EXSW-O-8-03	S12EXSW-O-8-06	S12EXFL-B-2-01
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								S12EXPR-O-8-05	S12EXSW-O-7-01	S12EXSW-O-8-02	S12EXSW-O-8-03	S12EXSW-O-8-05	S12EXFL-B-2-01
TOP OF SAMPLE								0	0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0	0	0	0.2	0.2
SAMPLE DATE								10/9/2009	8/5/2009	8/5/2009	8/5/2009	10/9/2009	7/29/2009
QC CODE								SA	SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA
AREA								Pit B	Pit B	Pit B	Pit B	Pit B	Pit C1
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**NYSDEC Unrestricted Use Level**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Volatile Organic Compounds													
1,1,1-Trichloroethane	UG/KG	0	0%	680	0	0	85		0.27 U	0.24 U	0.25 U		0.23 UJ
1,1,2,2-Tetrachloroethane	UG/KG	0	0%		0	0	85		0.51 U	0.46 U	0.48 U		0.44 UJ
1,1,2-Trichloroethane	UG/KG	0	0%		0	0	85		0.73 U	0.66 U	0.69 U		0.63 UJ
1,1-Dichloroethane	UG/KG	0	0%	270	0	0	85		0.58 U	0.53 U	0.55 U		0.5 UJ
1,1-Dichloroethene	UG/KG	0	0%	330	0	0	85		0.47 U	0.42 U	0.44 U		0.4 UJ
1,2-Dichloroethane	UG/KG	0	0%	20	0	0	85		0.44 U	0.4 U	0.42 U		0.38 UJ
1,2-Dichloropropane	UG/KG	0	0%		0	0	85		0.49 U	0.45 U	0.46 U		0.43 UJ
Acetone	UG/KG	9.6	13%	50	0	11	85		1.9 UJ	23 UJ	24 UJ		22 UJ
Benzene	UG/KG	0	0%	60	0	0	85		0.58 U	0.53 U	0.55 U		0.5 UJ
Bromodichloromethane	UG/KG	0	0%		0	0	85		0.64 U	0.58 U	0.61 U		0.56 UJ
Bromoform	UG/KG	0	0%		0	0	85		0.53 U	0.48 U	0.5 U		0.46 UJ
Carbon disulfide	UG/KG	2.5	2%		0	2	85		0.64 U	0.58 U	0.61 U		0.56 UJ
Carbon tetrachloride	UG/KG	0	0%	760	0	0	85		0.57 U	0.51 U	0.54 U		0.49 UJ
Chlorobenzene	UG/KG	0	0%	1100	0	0	85		0.61 U	0.55 U	0.57 U		0.52 UJ
Chlorodibromomethane	UG/KG	0	0%		0	0	85		0.42 U	0.38 U	0.39 U		0.36 UJ
Chloroethane	UG/KG	0	0%		0	0	85		0.61 U	0.55 U	0.57 U		0.52 UJ
Chloroform	UG/KG	0	0%	370	0	0	85		0.54 U	0.49 U	0.51 U		0.47 UJ
Cis-1,2-Dichloroethene	UG/KG	0.45	1%	250	0	1	85		0.39 U	0.36 U	0.37 U		0.34 UJ
Cis-1,3-Dichloropropene	UG/KG	0	0%		0	0	85		0.43 U	0.39 U	0.41 U		0.37 UJ
Ethyl benzene	UG/KG	2.7	1%	1000	0	1	85		1.2 U	1 U	1.1 U		0.96 UJ
Meta/Para Xylene	UG/KG	1.3	4%	260	0	3	85		1.2 U	1.1 U	1.1 U		1.1 UJ
Methyl bromide	UG/KG	0	0%		0	0	85		0.98 UJ	0.89 UJ	0.92 UJ		0.85 UJ
Methyl butyl ketone	UG/KG	0	0%		0	0	85		0.9 U	0.81 U	0.84 U		0.77 UJ
Methyl chloride	UG/KG	0	0%		0	0	85		0.72 U	0.65 U	0.68 U		0.62 UJ
Methyl ethyl ketone	UG/KG	1.6	5%	120	0	4	85		0.96 U	0.86 U	0.9 U		0.83 UJ
Methyl isobutyl ketone	UG/KG	0	0%		0	0	85		0.82 U	0.74 U	0.77 U		0.71 UJ
Methylene chloride	UG/KG	2.8	24%	50	0	20	85		0.48 U	5.7 U	5.9 U		0.42 UJ
Ortho Xylene	UG/KG	0	0%	260	0	0	85		0.8 U	0.72 U	0.75 U		0.69 UJ
Styrene	UG/KG	0.61	4%		0	3	85		0.57 U	0.51 U	0.54 U		0.49 UJ
Tetrachloroethene	UG/KG	0	0%	1300	0	0	85		0.62 U	0.56 U	0.58 U		0.53 UJ
Toluene	UG/KG	3.3	48%	700	0	41	85		0.41 U	0.75 J	0.53 J		0.35 UJ
Total Xylenes	UG/KG	0	0%	260	0	0	8						
Trans-1,2-Dichloroethene	UG/KG	0	0%	190	0	0	85		0.66 U	0.59 U	0.62 U		0.57 UJ
Trans-1,3-Dichloropropene	UG/KG	0	0%		0	0	85		0.47 U	0.42 U	0.44 U		0.4 UJ
Trichloroethene	UG/KG	1.2	16%	470	0	14	85		0.51 U	0.46 U	0.48 U		0.44 UJ
Vinyl chloride	UG/KG	0	0%	20	0	0	85		0.59 U	0.54 U	0.56 U		0.51 UJ
Semivolatile Organic Compounds													
1,2,4-Trichlorobenzene	UG/KG	0	0%		0	0	85		41 U	37 U	38 U		35 UJ
1,2-Dichlorobenzene	UG/KG	0	0%	1100	0	0	85		37 U	33 U	35 U		32 UJ
1,3-Dichlorobenzene	UG/KG	0	0%	2400	0	0	85		41 U	37 U	38 U		35 UJ
1,4-Dichlorobenzene	UG/KG	0	0%	1800	0	0	85		37 U	33 U	35 U		32 UJ
2,4,5-Trichlorophenol	UG/KG	0	0%		0	0	85		57 U	51 U	54 U		49 UJ
2,4,6-Trichlorophenol	UG/KG	0	0%		0	0	85		62 U	56 U	58 U		53 UJ
2,4-Dichlorophenol	UG/KG	0	0%		0	0	85		49 U	45 U	46 U		43 UJ
2,4-Dimethylphenol	UG/KG	0	0%		0	0	85		46 U	41 U	43 U		39 UJ
2,4-Dinitrophenol	UG/KG	0	0%		0	0	85		1300 UJ	1100 UJ	1200 UJ		1100 UJ
2,4-Dinitrotoluene	UG/KG	0	0%		0	0	85		67 U	60 U	63 U		58 UJ
2,6-Dinitrotoluene	UG/KG	0	0%		0	0	85		51 U	46 U	48 U		44 UJ

Table B-1C
SEAD-12 Complete Confirmatory Soil Sample Analytical Results
Compared to NYSDEC Unrestricted Use Levels
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION								SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12
LOCATION ID								S12EXPR-O-8-06	S12EXSW-O-7-01	S12EXSW-O-8-02	S12EXSW-O-8-03	S12EXSW-O-8-06	S12EXFL-B-2-01
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								S12EXPR-O-8-05	S12EXSW-O-7-01	S12EXSW-O-8-02	S12EXSW-O-8-03	S12EXSW-O-8-05	S12EXFL-B-2-01
TOP OF SAMPLE								0	0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0	0	0	0.2	0.2
SAMPLE DATE								10/9/2009	8/5/2009	8/5/2009	8/5/2009	10/9/2009	7/29/2009
QC CODE								SA	SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA
AREA								Pit B	Pit B	Pit B	Pit B	Pit B	Pit C1
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**NYSDEC Unrestricted Use Level**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
2-Chloronaphthalene	UG/KG	0	0%		0	0	85		46 U	41 U	43 U		39 UJ
2-Chlorophenol	UG/KG	0	0%		0	0	85		48 U	43 U	45 U		42 UJ
2-Methylnaphthalene	UG/KG	0	0%		0	0	85		41 U	37 U	38 U		35 UJ
2-Methylphenol	UG/KG	0	0%	330	0	0	85		36 U	32 U	34 U		31 UJ
2-Nitroaniline	UG/KG	0	0%		0	0	85		1500 U	1400 U	1400 U		1300 UJ
2-Nitrophenol	UG/KG	0	0%		0	0	85		34 U	31 U	32 U		30 UJ
3,3'-Dichlorobenzidine	UG/KG	0	0%		0	0	85		48 U	43 U	45 U		42 UJ
3-Nitroaniline	UG/KG	0	0%		0	0	85		1100 U	910 U	950 U		870 UJ
4,6-Dinitro-2-methylphenol	UG/KG	0	0%		0	0	85		1900 U	1700 U	1800 U		1600 UJ
4-Bromophenyl phenyl ether	UG/KG	0	0%		0	0	85		51 U	46 U	48 U		44 UJ
4-Chloro-3-methylphenol	UG/KG	0	0%		0	0	85		48 U	43 U	45 U		42 UJ
4-Chloroaniline	UG/KG	0	0%		0	0	85		47 U	42 U	44 U		40 UJ
4-Chlorophenyl phenyl ether	UG/KG	0	0%		0	0	85		49 U	45 U	46 U		43 UJ
4-Methylphenol	UG/KG	0	0%	330	0	0	8						
4-Nitroaniline	UG/KG	0	0%		0	0	85		1500 U	1400 U	1400 U		1300 UJ
4-Nitrophenol	UG/KG	0	0%		0	0	85		1400 U	1200 U	1300 U		1200 UJ
Acenaphthene	UG/KG	0	0%	20000	0	0	85		49 U	45 U	46 U		43 UJ
Acenaphthylene	UG/KG	0	0%	100000	0	0	85		46 U	41 U	43 U		39 UJ
Anthracene	UG/KG	0	0%	100000	0	0	85		47 U	42 U	44 U		40 UJ
Benzo(a)anthracene	UG/KG	0	0%	1000	0	0	85		49 U	45 U	46 U		43 UJ
Benzo(a)pyrene	UG/KG	0	0%	1000	0	0	85		42 U	38 U	39 U		36 UJ
Benzo(b)fluoranthene	UG/KG	0	0%	1000	0	0	85		59 U	54 U	56 U		51 UJ
Benzo(ghi)perylene	UG/KG	0	0%	100000	0	0	85		120 U	110 U	110 U		97 UJ
Benzo(k)fluoranthene	UG/KG	0	0%	800	0	0	85		61 U	55 U	57 U		52 UJ
Benzyl alcohol	UG/KG	140	38%		0	32	85		410 U	370 U	390 U		45 J
Bis(2-Chloroethoxy)methane	UG/KG	0	0%		0	0	85		62 U	56 U	58 U		53 UJ
Bis(2-Chloroethyl)ether	UG/KG	0	0%		0	0	85		48 U	43 U	45 U		42 UJ
Bis(2-Chloroisopropyl)ether	UG/KG	0	0%		0	0	85		58 U	53 U	55 U		50 UJ
Bis(2-Ethylhexyl)phthalate	UG/KG	120	11%		0	9	85		70 U	63 U	65 U		60 UJ
Butylbenzylphthalate	UG/KG	0	0%		0	0	85		51 U	46 U	48 U		44 UJ
Carbazole	UG/KG	0	0%		0	0	85		68 U	62 U	64 U		59 UJ
Chrysene	UG/KG	0	0%	1000	0	0	85		51 U	46 U	48 U		44 UJ
Di-n-butylphthalate	UG/KG	0	0%		0	0	85		170 U	160 U	160 U		150 UJ
Di-n-octylphthalate	UG/KG	0	0%		0	0	85		42 U	38 U	39 U		36 UJ
Dibenz(a,h)anthracene	UG/KG	0	0%	330	0	0	85		48 U	43 U	45 U		42 UJ
Dibenzofuran	UG/KG	0	0%	7000	0	0	85		46 U	41 U	43 U		39 UJ
Diethyl phthalate	UG/KG	0	0%		0	0	85		49 U	45 U	46 U		43 UJ
Dimethylphthalate	UG/KG	86	7%		0	6	85		49 U	45 U	46 U		43 UJ
Fluoranthene	UG/KG	74	2%	100000	0	2	85		49 U	45 U	46 U		43 UJ
Fluorene	UG/KG	0	0%	30000	0	0	85		41 U	37 U	38 U		35 UJ
Hexachlorobenzene	UG/KG	0	0%	330	0	0	85		47 U	42 U	44 U		40 UJ
Hexachlorobutadiene	UG/KG	0	0%		0	0	85		48 U	43 U	45 U		42 UJ
Hexachlorocyclopentadiene	UG/KG	0	0%		0	0	85		44 U	40 U	42 U		38 UJ
Hexachloroethane	UG/KG	0	0%		0	0	85		39 U	36 U	37 U		34 UJ
Indeno(1,2,3-cd)pyrene	UG/KG	0	0%	500	0	0	85		46 U	41 U	43 U		39 UJ
Isophorone	UG/KG	0	0%		0	0	85		49 U	45 U	46 U		43 UJ
N-Nitrosodimethylamine	UG/KG	0	0%		0	0	85		71 U	64 U	67 U		61 UJ
N-Nitrosodiphenylamine	UG/KG	0	0%		0	0	85		54 U	49 U	51 U		47 UJ
N-Nitrosodipropylamine	UG/KG	0	0%		0	0	85		54 U	49 U	51 U		47 UJ

Table B-1C
SEAD-12 Complete Confirmatory Soil Sample Analytical Results
Compared to NYSDEC Unrestricted Use Levels
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION								SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12
LOCATION ID								S12EXPR-O-8-06	S12EXSW-O-7-01	S12EXSW-O-8-02	S12EXSW-O-8-03	S12EXSW-O-8-06	S12EXFL-B-2-01
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								S12EXPR-O-8-05	S12EXSW-O-7-01	S12EXSW-O-8-02	S12EXSW-O-8-03	S12EXSW-O-8-05	S12EXFL-B-2-01
TOP OF SAMPLE								0	0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0	0	0	0.2	0.2
SAMPLE DATE								10/9/2009	8/5/2009	8/5/2009	8/5/2009	10/9/2009	7/29/2009
QC CODE								SA	SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA
AREA								Pit B	Pit B	Pit B	Pit B	Pit B	Pit C1
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**NYSDEC Unrestricted Use Level**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Naphthalene	UG/KG	0	0%	12000	0	0	85		37 U	33 U	35 U		32 UJ
Nitrobenzene	UG/KG	0	0%		0	0	85		53 U	48 U	50 U		46 UJ
Pentachlorophenol	UG/KG	0	0%	800	0	0	85		1400 U	1300 U	1300 U		1200 UJ
Phenanthrene	UG/KG	52	2%	100000	0	2	85		51 U	46 U	48 U		44 UJ
Phenol	UG/KG	0	0%	330	0	0	85		48 U	43 U	45 U		42 UJ
Pyrene	UG/KG	64	2%	100000	0	2	85		44 U	40 U	42 U		38 UJ
PCBs													
Aroclor-1016	UG/KG	0	0%	100	0	0	87	21 U	22 U	20 U	21 U	21 U	19 UJ
Aroclor-1221	UG/KG	0	0%	100	0	0	87	45 U	48 U	43 U	45 U	46 U	42 UJ
Aroclor-1232	UG/KG	0	0%	100	0	0	87	21 U	22 U	20 U	21 U	21 U	19 UJ
Aroclor-1242	UG/KG	0	0%	100	0	0	87	31 U	33 U	30 U	31 U	32 U	29 UJ
Aroclor-1248	UG/KG	0	0%	100	0	0	87	21 U	22 U	20 U	21 U	21 U	19 UJ
Aroclor-1254	UG/KG	78	5%	100	0	4	87	21 U	22 U	20 U	21 U	21 U	19 UJ
Aroclor-1260	UG/KG	0	0%	100	0	0	87	36 U	38 U	34 U	36 U	37 U	33 UJ
Aroclor-1268	UG/KG	0	0%	100	0	0	87	21 U	22 U	20 U	21 U	21 U	19 UJ
Pesticides													
4,4'-DDD	UG/KG	6.9	1%	3.3	1	1	85		2.1 U	1.9 U	2 U		1.9 UJ
4,4'-DDE	UG/KG	5.9	4%	3.3	2	3	85		2.1 U	1.9 U	2 U		1.9 UJ
4,4'-DDT	UG/KG	9.8	4%	3.3	2	3	85		2.1 U	1.9 U	2 U		1.9 UJ
Aldrin	UG/KG	0	0%	5	0	0	85		1.1 U	0.96 U	1 U		0.91 UJ
Alpha-BHC	UG/KG	210	6%	20	2	5	85		1.1 U	0.96 U	1 U		0.91 UJ
Alpha-Chlordane	UG/KG	0	0%	94	0	0	85		1.1 U	0.96 U	1 U		0.91 UJ
Beta-BHC	UG/KG	63	1%	36	1	1	85		1.1 U	0.96 U	1 U		0.91 UJ
Chlordane (Alpha And Gamma Isomers)	UG/KG	0	0%	94	0	0	8						
Delta-BHC	UG/KG	61	4%	40	1	3	85		1.1 U	0.96 U	1 U		0.91 UJ
Dieldrin	UG/KG	0	0%	5	0	0	85		2.1 U	1.9 U	2 U		1.9 UJ
Endosulfan I	UG/KG	0	0%	2400	0	0	85		1.1 U	0.96 U	1 U		0.91 UJ
Endosulfan II	UG/KG	0	0%	2400	0	0	85		2.1 U	1.9 U	2 U		1.9 UJ
Endosulfan sulfate	UG/KG	0	0%	2400	0	0	85		2.1 U	1.9 U	2 U		1.9 UJ
Endrin	UG/KG	0	0%	14	0	0	85		2.1 U	1.9 U	2 U		1.9 UJ
Endrin aldehyde	UG/KG	0	0%		0	0	85		2.1 U	1.9 U	2 U		1.9 UJ
Endrin ketone	UG/KG	0	0%		0	0	85		2.1 U	1.9 U	2 U		1.9 UJ
Gamma-BHC/Lindane	UG/KG	0	0%	100	0	0	85		1.1 U	0.96 U	1 U		0.91 UJ
Gamma-Chlordane	UG/KG	0	0%		0	0	77		1.1 U	0.96 U	1 U		0.91 UJ
Heptachlor	UG/KG	0	0%	42	0	0	85		1.1 U	0.96 U	1 U		0.91 UJ
Heptachlor epoxide	UG/KG	0	0%		0	0	85		1.1 U	0.96 U	1 U		0.91 UJ
Methoxychlor	UG/KG	0	0%		0	0	85		11 U	9.5 U	9.9 U		9.1 UJ
Toxaphene	UG/KG	0	0%		0	0	85		21 U	19 U	20 U		18 UJ
Metals													
Aluminum	MG/KG	35100	100%		0	85	85		14100	10300	14300		10100 J
Antimony	MG/KG	0	0%		0	0	85		0.5 UJ	0.5 UJ	0.5 UJ		0.4 UJ
Arsenic	MG/KG	12.2	100%	13	0	85	85		2.3	3.5	4.1		3.7 J
Barium	MG/KG	304	100%	350	0	85	85		80.2	63.1	87.6		102 J
Beryllium	MG/KG	1.7	96%	7.2	0	82	85		0.66	0.54 J	0.76		0.56 J
Cadmium	MG/KG	2.5	34%	2.5	0	29	85		0.62 U	0.56 U	0.58 U		0.17 J
Calcium	MG/KG	186000	100%		0	85	85		17200	76200	22100		84700 J
Chromium	MG/KG	51.2	100%	30	2	85	85		20.4	16.5	22.3		16.1 J
Cobalt	MG/KG	29	100%		0	85	85		9.6	9.9	11.7		10.7 J
Copper	MG/KG	61.4	100%	50	1	85	85		19.9	23.7	28.5		20.7 J

Table B-1C
SEAD-12 Complete Confirmatory Soil Sample Analytical Results
Compared to NYSDEC Unrestricted Use Levels
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION								SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12
LOCATION ID								S12EXPR-O-8-06	S12EXSW-O-7-01	S12EXSW-O-8-02	S12EXSW-O-8-03	S12EXSW-O-8-06	S12EXFL-B-2-01
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								S12EXPR-O-8-05	S12EXSW-O-7-01	S12EXSW-O-8-02	S12EXSW-O-8-03	S12EXSW-O-8-05	S12EXFL-B-2-01
TOP OF SAMPLE								0	0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0	0	0	0.2	0.2
SAMPLE DATE								10/9/2009	8/5/2009	8/5/2009	8/5/2009	10/9/2009	7/29/2009
QC CODE								SA	SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA
AREA								Pit B	Pit B	Pit B	Pit B	Pit B	Pit C1
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**NYSDEC Unrestricted Use Level**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Cyanide	MG/KG	0	0%	27	0	0	85		0.5 U	0.42 U	0.42 U		0.5 UJ
Iron	MG/KG	56400	100%		0	85	85		21000	19900	25500		21000 J
Lead	MG/KG	33.3	100%	63	0	85	85		17.8 J	9.2 J	11.9 J		10.3 J
Magnesium	MG/KG	74400	100%		0	85	85		4860 J	11400 J	7060 J		16200 J
Manganese	MG/KG	1650	100%	1600	2	85	85		531	475	566		500 J
Mercury	MG/KG	0.05	95%	0.18	0	81	85		0.046 J	0.018 J	0.034 J		0.02 J
Nickel	MG/KG	75	100%	30	32	85	85		25.9	27.7	**34.9**		28.9 J
Potassium	MG/KG	5330	100%		0	85	85		1600 J	1840 J	1910 J		1830 J
Selenium	MG/KG	2	18%	3.9	0	15	85		1.2 U	0.2 U	1.2 U		1 J
Silver	MG/KG	0	0%	2	0	0	85		0.3 U	0.3 U	0.3 U		1.04 UJ
Sodium	MG/KG	390	100%		0	85	85		60 J	130	80 J		169 J
Thallium	MG/KG	0	0%		0	0	85		0.7 U	0.7 U	0.7 U		0.176 UJ
Vanadium	MG/KG	68	100%		0	85	85		23.5	19	24.8		17 J
Zinc	MG/KG	154	100%	109	2	85	85		70.9 J	53.2 J	57.8 J		52 J
TCLP													
TCLP 1,1-Dichloroethene	UG/L	0	0%		0	0	3						
TCLP 1,2-Dichloroethane	UG/L	0	0%		0	0	3						
TCLP Benzene	UG/L	0	0%		0	0	3						
TCLP Carbon tetrachloride	UG/L	0	0%		0	0	3						
TCLP Chlorobenzene	UG/L	0	0%		0	0	3						
TCLP Chloroform	UG/L	0	0%		0	0	3						
TCLP Methyl ethyl ketone	UG/L	0	0%		0	0	3						
TCLP Tetrachloroethene	UG/L	0	0%		0	0	3						
TCLP Trichloroethene	UG/L	0	0%		0	0	3						
TCLP Vinyl chloride	UG/L	0	0%		0	0	3						

Notes:
(1) The dataset of samples consists of the Inplace samples representing current site conditions
The overburden C1 samples were not included in this dataset.
(2) NYSDEC's Unrestricted Use Soil Cleanup Objective, 6 NYCRR Part 375-6.8(a).
(3) Sample/Duplicate pairs are evaluated as separate and discrete samples in this table
(4) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected; the associated reporting limit is approximate
R = the analytical result was rejected during data validation

Table B-1C
SEAD-12 Complete Confirmatory Soil Sample Analytical Results
Compared to NYSDEC Unrestricted Use Levels
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION								SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12
LOCATION ID								S12EXFL-C-2-01	S12EXFL-E-1-01	S12EXPR-A-2-01	S12EXPR-B-1-01	S12EXPR-B-2-01	S12EXPR-B-2-01
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								S12EXFL-C-2-01	S12EXFL-E-1-01	S12EXPR-A-2-01	S12EXPR-B-1-01	S12EXPR-B-2-02	S12EXPR-B-2-01
TOP OF SAMPLE								0	0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								7/29/2009	7/29/2009	7/29/2009	7/29/2009	7/29/2009	7/29/2009
QC CODE								SA	SA	SA	SA	DU	SA
STUDY ID								RA	RA	RA	RA	RA	RA
AREA								Pit C1	Pit C1	Pit C1	Pit C1	Pit C1	Pit C1
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**NYSDEC Unrestricted Use Level**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Volatile Organic Compounds													
1,1,1-Trichloroethane	UG/KG	0	0%	680	0	0	85	0.24 UJ	0.23 UJ	0.24 UJ	0.23 UJ	0.24 UJ	0.25 UJ
1,1,2,2-Tetrachloroethane	UG/KG	0	0%		0	0	85	0.45 UJ	0.44 UJ	0.44 UJ	0.44 UJ	0.37 UJ	0.39 UJ
1,1,2-Trichloroethane	UG/KG	0	0%		0	0	85	0.65 UJ	0.64 UJ	0.64 UJ	0.63 UJ	0.27 UJ	0.28 UJ
1,1-Dichloroethane	UG/KG	0	0%	270	0	0	85	0.51 UJ	0.51 UJ	0.51 UJ	0.5 UJ	0.19 UJ	0.2 UJ
1,1-Dichloroethene	UG/KG	0	0%	330	0	0	85	0.41 UJ	0.41 UJ	0.41 UJ	0.4 UJ	0.37 UJ	0.39 UJ
1,2-Dichloroethane	UG/KG	0	0%	20	0	0	85	0.39 UJ	0.39 UJ	0.39 UJ	0.38 UJ	0.3 UJ	0.31 UJ
1,2-Dichloropropane	UG/KG	0	0%		0	0	85	0.44 UJ	0.43 UJ	0.43 UJ	0.43 UJ	0.3 UJ	0.31 UJ
Acetone	UG/KG	9.6	13%	50	0	11	85	22 UJ	22 UJ	1.7 UJ	22 UJ	4.2 J	4.1 J
Benzene	UG/KG	0	0%	60	0	0	85	0.51 UJ	0.51 UJ	0.51 UJ	0.5 UJ	0.24 UJ	0.25 UJ
Bromodichloromethane	UG/KG	0	0%		0	0	85	0.57 UJ	0.56 UJ	0.57 UJ	0.56 UJ	0.24 UJ	0.25 UJ
Bromoform	UG/KG	0	0%		0	0	85	0.47 UJ	0.46 UJ	0.47 UJ	0.46 UJ	0.48 UJ	0.5 UJ
Carbon disulfide	UG/KG	2.5	2%		0	2	85	0.57 UJ	0.56 UJ	0.57 UJ	0.56 UJ	0.59 UJ	0.61 UJ
Carbon tetrachloride	UG/KG	0	0%	760	0	0	85	0.5 UJ	0.5 UJ	0.5 UJ	0.49 UJ	0.52 UJ	0.54 UJ
Chlorobenzene	UG/KG	0	0%	1100	0	0	85	0.54 UJ	0.53 UJ	0.53 UJ	0.52 UJ	0.26 UJ	0.27 UJ
Chlorodibromomethane	UG/KG	0	0%		0	0	85	0.37 UJ	0.37 UJ	0.37 UJ	0.36 UJ	0.38 UJ	0.4 UJ
Chloroethane	UG/KG	0	0%		0	0	85	0.54 UJ	0.53 UJ	0.53 UJ	0.52 UJ	0.49 UJ	0.52 UJ
Chloroform	UG/KG	0	0%	370	0	0	85	0.48 UJ	0.48 UJ	0.48 UJ	0.47 UJ	0.37 UJ	0.39 UJ
Cis-1,2-Dichloroethene	UG/KG	0.45	1%	250	0	1	85	0.35 UJ	0.34 UJ	0.35 UJ	0.34 UJ	0.26 UJ	0.27 UJ
Cis-1,3-Dichloropropene	UG/KG	0	0%		0	0	85	0.38 UJ	0.38 UJ	0.38 UJ	0.37 UJ	0.35 UJ	0.36 UJ
Ethyl benzene	UG/KG	2.7	1%	1000	0	1	85	0.98 UJ	0.97 UJ	0.97 UJ	0.95 UJ	1.1 UJ	1.1 UJ
Meta/Para Xylene	UG/KG	1.3	4%	260	0	3	85	1.1 UJ	1.1 UJ	1.1 UJ	1.1 UJ	0.72 UJ	0.75 UJ
Methyl bromide	UG/KG	0	0%		0	0	85	0.87 UJ	0.86 UJ	0.86 UJ	0.85 UJ	0.52 UJ	0.54 UJ
Methyl butyl ketone	UG/KG	0	0%		0	0	85	0.79 UJ	0.78 UJ	0.79 UJ	0.77 UJ	0.8 UJ	0.84 UJ
Methyl chloride	UG/KG	0	0%		0	0	85	0.63 UJ	0.63 UJ	0.63 UJ	0.62 UJ	0.35 UJ	0.36 UJ
Methyl ethyl ketone	UG/KG	1.6	5%	120	0	4	85	0.86 J	0.84 UJ	0.84 UJ	0.88 J	0.87 UJ	0.91 UJ
Methyl isobutyl ketone	UG/KG	0	0%		0	0	85	0.72 UJ	0.72 UJ	0.72 UJ	0.71 UJ	0.74 UJ	0.78 UJ
Methylene chloride	UG/KG	2.8	24%	50	0	20	85	0.42 UJ	0.42 UJ	0.42 UJ	0.41 UJ	0.44 UJ	0.48 J
Ortho Xylene	UG/KG	0	0%	260	0	0	85	0.7 UJ	0.69 UJ	0.7 UJ	0.68 UJ	0.72 UJ	0.75 UJ
Styrene	UG/KG	0.61	4%		0	3	85	0.5 UJ	0.5 UJ	0.5 UJ	0.49 UJ	0.32 UJ	0.34 UJ
Tetrachloroethene	UG/KG	0	0%	1300	0	0	85	0.55 UJ	0.54 UJ	0.54 UJ	0.53 UJ	0.56 UJ	0.59 UJ
Toluene	UG/KG	3.3	48%	700	0	41	85	0.36 UJ	0.36 UJ	0.63 J	0.35 UJ	0.61 J	0.57 J
Total Xylenes	UG/KG	0	0%	260	0	0	8						
Trans-1,2-Dichloroethene	UG/KG	0	0%	190	0	0	85	0.58 UJ	0.57 UJ	0.58 UJ	0.57 UJ	0.36 UJ	0.37 UJ
Trans-1,3-Dichloropropene	UG/KG	0	0%		0	0	85	0.41 UJ	0.41 UJ	0.41 UJ	0.4 UJ	0.41 UJ	0.43 UJ
Trichloroethene	UG/KG	1.2	16%	470	0	14	85	0.45 UJ	0.44 UJ	0.48 J	0.44 UJ	0.46 UJ	0.48 UJ
Vinyl chloride	UG/KG	0	0%	20	0	0	85	0.52 UJ	0.52 UJ	0.52 UJ	0.51 UJ	0.27 UJ	0.28 UJ
Semivolatile Organic Compounds													
1,2,4-Trichlorobenzene	UG/KG	0	0%		0	0	85	36 UJ	36 UJ	36 UJ	35 UJ	37 UJ	39 UJ
1,2-Dichlorobenzene	UG/KG	0	0%	1100	0	0	85	33 UJ	32 UJ	32 UJ	32 UJ	33 UJ	35 UJ
1,3-Dichlorobenzene	UG/KG	0	0%	2400	0	0	85	36 UJ	36 UJ	36 UJ	35 UJ	37 UJ	39 UJ
1,4-Dichlorobenzene	UG/KG	0	0%	1800	0	0	85	33 UJ	32 UJ	32 UJ	32 UJ	33 UJ	35 UJ
2,4,5-Trichlorophenol	UG/KG	0	0%		0	0	85	50 UJ	50 UJ	50 UJ	49 UJ	52 UJ	54 UJ
2,4,6-Trichlorophenol	UG/KG	0	0%		0	0	85	55 UJ	54 UJ	54 UJ	53 UJ	56 UJ	59 UJ
2,4-Dichlorophenol	UG/KG	0	0%		0	0	85	44 UJ	43 UJ	43 UJ	43 UJ	45 UJ	47 UJ
2,4-Dimethylphenol	UG/KG	0	0%		0	0	85	40 UJ	40 UJ	40 UJ	39 UJ	41 UJ	43 UJ
2,4-Dinitrophenol	UG/KG	0	0%		0	0	85	1100 UJ	1100 UJ	1100 UJ	1100 UJ	1100 UJ	1200 UJ
2,4-Dinitrotoluene	UG/KG	0	0%		0	0	85	59 UJ	58 UJ	59 UJ	58 UJ	61 UJ	63 UJ
2,6-Dinitrotoluene	UG/KG	0	0%		0	0	85	45 UJ	44 UJ	44 UJ	44 UJ	46 UJ	48 UJ

Table B-1C
SEAD-12 Complete Confirmatory Soil Sample Analytical Results
Compared to NYSDEC Unrestricted Use Levels
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION								SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12
LOCATION ID								S12EXFL-C-2-01	S12EXFL-E-1-01	S12EXPR-A-2-01	S12EXPR-B-1-01	S12EXPR-B-2-01	S12EXPR-B-2-01
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								S12EXFL-C-2-01	S12EXFL-E-1-01	S12EXPR-A-2-01	S12EXPR-B-1-01	S12EXPR-B-2-02	S12EXPR-B-2-01
TOP OF SAMPLE								0	0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								7/29/2009	7/29/2009	7/29/2009	7/29/2009	7/29/2009	7/29/2009
QC CODE								SA	SA	SA	SA	DU	SA
STUDY ID								RA	RA	RA	RA	RA	RA
AREA								Pit C1	Pit C1	Pit C1	Pit C1	Pit C1	Pit C1
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**NYSDEC Unrestricted Use Level**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
2-Chloronaphthalene	UG/KG	0	0%		0	0	85	40 UJ	40 UJ	40 UJ	39 UJ	41 UJ	43 UJ
2-Chlorophenol	UG/KG	0	0%		0	0	85	42 UJ	42 UJ	42 UJ	41 UJ	44 UJ	46 UJ
2-Methylnaphthalene	UG/KG	0	0%		0	0	85	36 UJ	36 UJ	36 UJ	35 UJ	37 UJ	39 UJ
2-Methylphenol	UG/KG	0	0%	330	0	0	85	31 UJ	31 UJ	31 UJ	31 UJ	32 UJ	34 UJ
2-Nitroaniline	UG/KG	0	0%		0	0	85	1300 UJ	1300 UJ	1300 UJ	1300 UJ	1400 UJ	1400 UJ
2-Nitrophenol	UG/KG	0	0%		0	0	85	30 UJ	30 UJ	30 UJ	30 UJ	31 UJ	33 UJ
3,3'-Dichlorobenzidine	UG/KG	0	0%		0	0	85	42 UJ	42 UJ	42 UJ	41 UJ	44 UJ	46 UJ
3-Nitroaniline	UG/KG	0	0%		0	0	85	890 UJ	880 UJ	880 UJ	870 UJ	910 UJ	950 UJ
4,6-Dinitro-2-methylphenol	UG/KG	0	0%		0	0	85	1700 UJ	1600 UJ	1600 UJ	1600 UJ	1700 UJ	1800 UJ
4-Bromophenyl phenyl ether	UG/KG	0	0%		0	0	85	45 UJ	44 UJ	44 UJ	44 UJ	46 UJ	48 UJ
4-Chloro-3-methylphenol	UG/KG	0	0%		0	0	85	42 UJ	42 UJ	42 UJ	41 UJ	44 UJ	46 UJ
4-Chloroaniline	UG/KG	0	0%		0	0	85	41 UJ	41 UJ	41 UJ	40 UJ	43 UJ	44 UJ
4-Chlorophenyl phenyl ether	UG/KG	0	0%		0	0	85	44 UJ	43 UJ	43 UJ	43 UJ	45 UJ	47 UJ
4-Methylphenol	UG/KG	0	0%	330	0	0	8						
4-Nitroaniline	UG/KG	0	0%		0	0	85	1400 UJ	1300 UJ	1300 UJ	1300 UJ	1400 UJ	1400 UJ
4-Nitrophenol	UG/KG	0	0%		0	0	85	1200 UJ	1200 UJ	1200 UJ	1200 UJ	1200 UJ	1300 UJ
Acenaphthene	UG/KG	0	0%	20000	0	0	85	44 UJ	43 UJ	43 UJ	43 UJ	45 UJ	47 UJ
Acenaphthylene	UG/KG	0	0%	100000	0	0	85	40 UJ	40 UJ	40 UJ	39 UJ	41 UJ	43 UJ
Anthracene	UG/KG	0	0%	100000	0	0	85	41 UJ	41 UJ	41 UJ	40 UJ	43 UJ	44 UJ
Benzo(a)anthracene	UG/KG	0	0%	1000	0	0	85	44 UJ	43 UJ	43 UJ	43 UJ	45 UJ	47 UJ
Benzo(a)pyrene	UG/KG	0	0%	1000	0	0	85	37 UJ	37 UJ	37 UJ	36 UJ	38 UJ	40 UJ
Benzo(b)fluoranthene	UG/KG	0	0%	1000	0	0	85	52 UJ	52 UJ	52 UJ	51 UJ	54 UJ	56 UJ
Benzo(ghi)perylene	UG/KG	0	0%	100000	0	0	85	99 UJ	98 UJ	98 UJ	97 UJ	110 UJ	110 UJ
Benzo(k)fluoranthene	UG/KG	0	0%	800	0	0	85	54 UJ	53 UJ	53 UJ	52 UJ	55 UJ	58 UJ
Benzyl alcohol	UG/KG	140	38%		0	32	85	43 J	40 J	26 UJ	40 J	27 UJ	28 UJ
Bis(2-Chloroethoxy)methane	UG/KG	0	0%		0	0	85	55 UJ	54 UJ	54 UJ	53 UJ	56 UJ	59 UJ
Bis(2-Chloroethyl)ether	UG/KG	0	0%		0	0	85	42 UJ	42 UJ	42 UJ	41 UJ	44 UJ	46 UJ
Bis(2-Chloroisopropyl)ether	UG/KG	0	0%		0	0	85	51 UJ	51 UJ	51 UJ	50 UJ	53 UJ	55 UJ
Bis(2-Ethylhexyl)phthalate	UG/KG	120	11%		0	9	85	61 UJ	61 UJ	61 UJ	70 J	63 UJ	66 UJ
Butylbenzylphthalate	UG/KG	0	0%		0	0	85	45 UJ	44 UJ	44 UJ	44 UJ	46 UJ	48 UJ
Carbazole	UG/KG	0	0%		0	0	85	60 UJ	60 UJ	60 UJ	59 UJ	62 UJ	65 UJ
Chrysene	UG/KG	0	0%	1000	0	0	85	45 UJ	44 UJ	44 UJ	44 UJ	46 UJ	48 UJ
Di-n-butylphthalate	UG/KG	0	0%		0	0	85	150 UJ	150 UJ	150 UJ	150 UJ	160 UJ	170 UJ
Di-n-octylphthalate	UG/KG	0	0%		0	0	85	37 UJ	37 UJ	37 UJ	36 UJ	38 UJ	40 UJ
Dibenz(a,h)anthracene	UG/KG	0	0%	330	0	0	85	42 UJ	42 UJ	42 UJ	41 UJ	44 UJ	46 UJ
Dibenzofuran	UG/KG	0	0%	7000	0	0	85	40 UJ	40 UJ	40 UJ	39 UJ	41 UJ	43 UJ
Diethyl phthalate	UG/KG	0	0%		0	0	85	44 UJ	43 UJ	43 UJ	43 UJ	45 UJ	47 UJ
Dimethylphthalate	UG/KG	86	7%		0	6	85	44 UJ	43 UJ	43 UJ	43 UJ	45 UJ	47 UJ
Fluoranthene	UG/KG	74	2%	100000	0	2	85	44 UJ	43 UJ	43 UJ	43 UJ	45 UJ	47 UJ
Fluorene	UG/KG	0	0%	30000	0	0	85	36 UJ	36 UJ	36 UJ	35 UJ	37 UJ	39 UJ
Hexachlorobenzene	UG/KG	0	0%	330	0	0	85	41 UJ	41 UJ	41 UJ	40 UJ	43 UJ	44 UJ
Hexachlorobutadiene	UG/KG	0	0%		0	0	85	42 UJ	42 UJ	42 UJ	41 UJ	44 UJ	46 UJ
Hexachlorocyclopentadiene	UG/KG	0	0%		0	0	85	39 UJ	39 UJ	39 UJ	38 UJ	40 UJ	42 UJ
Hexachloroethane	UG/KG	0	0%		0	0	85	35 UJ	34 UJ	35 UJ	34 UJ	36 UJ	37 UJ
Indeno(1,2,3-cd)pyrene	UG/KG	0	0%	500	0	0	85	40 UJ	40 UJ	40 UJ	39 UJ	41 UJ	43 UJ
Isophorone	UG/KG	0	0%		0	0	85	44 UJ	43 UJ	43 UJ	43 UJ	45 UJ	47 UJ
N-Nitrosodimethylamine	UG/KG	0	0%		0	0	85	62 UJ	62 UJ	62 UJ	61 UJ	64 UJ	67 UJ
N-Nitrosodiphenylamine	UG/KG	0	0%		0	0	85	48 UJ	48 UJ	48 UJ	47 UJ	49 UJ	52 UJ
N-Nitrosodipropylamine	UG/KG	0	0%		0	0	85	48 UJ	48 UJ	48 UJ	47 UJ	49 UJ	52 UJ

Table B-1C
SEAD-12 Complete Confirmatory Soil Sample Analytical Results
Compared to NYSDEC Unrestricted Use Levels
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION								SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12
LOCATION ID								S12EXFL-C-2-01	S12EXFL-E-1-01	S12EXPR-A-2-01	S12EXPR-B-1-01	S12EXPR-B-2-01	S12EXPR-B-2-01
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								S12EXFL-C-2-01	S12EXFL-E-1-01	S12EXPR-A-2-01	S12EXPR-B-1-01	S12EXPR-B-2-02	S12EXPR-B-2-01
TOP OF SAMPLE								0	0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								7/29/2009	7/29/2009	7/29/2009	7/29/2009	7/29/2009	7/29/2009
QC CODE								SA	SA	SA	SA	DU	SA
STUDY ID								RA	RA	RA	RA	RA	RA
AREA								Pit C1	Pit C1	Pit C1	Pit C1	Pit C1	Pit C1
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**NYSDEC Unrestricted Use Level**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Naphthalene	UG/KG	0	0%	12000	0	0	85	33 UJ	32 UJ	32 UJ	32 UJ	33 UJ	35 UJ
Nitrobenzene	UG/KG	0	0%		0	0	85	47 UJ	46 UJ	47 UJ	46 UJ	48 UJ	50 UJ
Pentachlorophenol	UG/KG	0	0%	800	0	0	85	1300 UJ	1300 UJ	1300 UJ	1200 UJ	1300 UJ	1400 UJ
Phenanthrene	UG/KG	52	2%	100000	0	2	85	45 UJ	44 UJ	44 UJ	44 UJ	46 UJ	48 UJ
Phenol	UG/KG	0	0%	330	0	0	85	42 UJ	42 UJ	42 UJ	41 UJ	44 UJ	46 UJ
Pyrene	UG/KG	64	2%	100000	0	2	85	39 UJ	39 UJ	39 UJ	38 UJ	40 UJ	42 UJ
PCBs													
Aroclor-1016	UG/KG	0	0%	100	0	0	87	19 UJ	19 UJ	19 UJ	19 UJ	20 UJ	21 UJ
Aroclor-1221	UG/KG	0	0%	100	0	0	87	42 UJ	42 UJ	42 UJ	41 UJ	44 UJ	46 UJ
Aroclor-1232	UG/KG	0	0%	100	0	0	87	19 UJ	19 UJ	19 UJ	19 UJ	20 UJ	21 UJ
Aroclor-1242	UG/KG	0	0%	100	0	0	87	29 UJ	29 UJ	29 UJ	29 UJ	30 UJ	31 UJ
Aroclor-1248	UG/KG	0	0%	100	0	0	87	19 UJ	19 UJ	19 UJ	19 UJ	20 UJ	21 UJ
Aroclor-1254	UG/KG	78	5%	100	0	4	87	19 UJ	19 UJ	19 UJ	19 UJ	20 UJ	21 UJ
Aroclor-1260	UG/KG	0	0%	100	0	0	87	34 UJ	33 UJ	33 UJ	33 UJ	35 UJ	36 UJ
Aroclor-1268	UG/KG	0	0%	100	0	0	87	19 UJ	19 UJ	19 UJ	19 UJ	20 UJ	21 UJ
Pesticides													
4,4'-DDD	UG/KG	6.9	1%	3.3	1	1	85	1.9 UJ	1.9 UJ	1.9 UJ	1.9 UJ	1.9 UJ	2 UJ
4,4'-DDE	UG/KG	5.9	4%	3.3	2	3	85	1.9 UJ	1.9 UJ	1.9 UJ	1.9 UJ	1.9 UJ	2 UJ
4,4'-DDT	UG/KG	9.8	4%	3.3	2	3	85	1.9 UJ	1.9 UJ	1.9 UJ	1.9 UJ	1.9 UJ	2 UJ
Aldrin	UG/KG	0	0%	5	0	0	85	0.93 UJ	0.92 UJ	0.93 UJ	0.91 UJ	0.96 UJ	1 UJ
Alpha-BHC	UG/KG	210	6%	20	2	5	85	0.93 UJ	0.92 UJ	0.93 UJ	0.91 UJ	0.96 UJ	1 UJ
Alpha-Chlordane	UG/KG	0	0%	94	0	0	85	0.93 UJ	0.92 UJ	0.93 UJ	0.91 UJ	0.96 UJ	1 UJ
Beta-BHC	UG/KG	63	1%	36	1	1	85	0.93 UJ	0.92 UJ	0.93 UJ	0.91 UJ	0.96 UJ	1 UJ
Chlordane (Alpha And Gamma Isomers)	UG/KG	0	0%	94	0	0	8						
Delta-BHC	UG/KG	61	4%	40	1	3	85	0.93 UJ	0.92 UJ	0.93 UJ	0.91 UJ	0.96 UJ	1 UJ
Dieldrin	UG/KG	0	0%	5	0	0	85	1.9 UJ	1.9 UJ	1.9 UJ	1.9 UJ	1.9 UJ	2 UJ
Endosulfan I	UG/KG	0	0%	2400	0	0	85	0.93 UJ	0.92 UJ	0.93 UJ	0.91 UJ	0.96 UJ	1 UJ
Endosulfan II	UG/KG	0	0%	2400	0	0	85	1.9 UJ	1.9 UJ	1.9 UJ	1.9 UJ	1.9 UJ	2 UJ
Endosulfan sulfate	UG/KG	0	0%	2400	0	0	85	1.9 UJ	1.9 UJ	1.9 UJ	1.9 UJ	1.9 UJ	2 UJ
Endrin	UG/KG	0	0%	14	0	0	85	1.9 UJ	1.9 UJ	1.9 UJ	1.9 UJ	1.9 UJ	2 UJ
Endrin aldehyde	UG/KG	0	0%		0	0	85	1.9 UJ	1.9 UJ	1.9 UJ	1.9 UJ	1.9 UJ	2 UJ
Endrin ketone	UG/KG	0	0%		0	0	85	1.9 UJ	1.9 UJ	1.9 UJ	1.9 UJ	1.9 UJ	2 UJ
Gamma-BHC/Lindane	UG/KG	0	0%	100	0	0	85	0.93 UJ	0.92 UJ	0.93 UJ	0.91 UJ	0.96 UJ	1 UJ
Gamma-Chlordane	UG/KG	0	0%		0	0	77	0.93 UJ	0.92 UJ	0.93 UJ	0.91 UJ	0.96 UJ	1 UJ
Heptachlor	UG/KG	0	0%	42	0	0	85	0.93 UJ	0.92 UJ	0.93 UJ	0.91 UJ	0.96 UJ	1 UJ
Heptachlor epoxide	UG/KG	0	0%		0	0	85	0.93 UJ	0.92 UJ	0.93 UJ	0.91 UJ	0.96 UJ	1 UJ
Methoxychlor	UG/KG	0	0%		0	0	85	9.3 UJ	9.2 UJ	9.2 UJ	9 UJ	9.5 UJ	10 UJ
Toxaphene	UG/KG	0	0%		0	0	85	19 UJ	19 UJ	19 UJ	18 UJ	19 UJ	20 UJ
Metals													
Aluminum	MG/KG	35100	100%		0	85	85	9830 J	8760 J	6830 J	12400 J	12000 J	13900 J
Antimony	MG/KG	0	0%		0	0	85	0.4 UJ	0.4 UJ	0.4 UJ	0.4 UJ	0.4 UJ	0.4 UJ
Arsenic	MG/KG	12.2	100%	13	0	85	85	4.3 J	3.4 J	1.5 J	2.7 J	3.4 J	3.2 J
Barium	MG/KG	304	100%	350	0	85	85	134 J	72.2 J	48.2 J	104 J	119 J	154 J
Beryllium	MG/KG	1.7	96%	7.2	0	82	85	0.56 J	0.53 UJ	0.55 UJ	0.68 J	0.62 J	0.69 J
Cadmium	MG/KG	2.5	34%	2.5	0	29	85	0.16 J	0.11 J	0.14 J	0.17 J	0.55 UJ	0.58 UJ
Calcium	MG/KG	186000	100%		0	85	85	81400 J	77100 J	146000 J	90600 J	57400 J	57300 J
Chromium	MG/KG	51.2	100%	30	2	85	85	16.4 J	13.4 J	9.6 J	20.4 J	16.9 J	19.3 J
Cobalt	MG/KG	29	100%		0	85	85	9.2 J	7.8 J	4.9 J	11.4 J	9.4 J	11.5 J
Copper	MG/KG	61.4	100%	50	1	85	85	25.1 J	20 J	10.7 J	23.1 J	20.3 J	20.7 J

Table B-1C
SEAD-12 Complete Confirmatory Soil Sample Analytical Results
Compared to NYSDEC Unrestricted Use Levels
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION								SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12
LOCATION ID								S12EXFL-C-2-01	S12EXFL-E-1-01	S12EXPR-A-2-01	S12EXPR-B-1-01	S12EXPR-B-2-01	S12EXPR-B-2-01
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								S12EXFL-C-2-01	S12EXFL-E-1-01	S12EXPR-A-2-01	S12EXPR-B-1-01	S12EXPR-B-2-02	S12EXPR-B-2-01
TOP OF SAMPLE								0	0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								7/29/2009	7/29/2009	7/29/2009	7/29/2009	7/29/2009	7/29/2009
QC CODE								SA	SA	SA	SA	DU	SA
STUDY ID								RA	RA	RA	RA	RA	RA
AREA								Pit C1	Pit C1	Pit C1	Pit C1	Pit C1	Pit C1
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**NYSDEC Unrestricted Use Level**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Cyanide	MG/KG	0	0%	27	0	0	85	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ
Iron	MG/KG	56400	100%		0	85	85	21400 J	19900 J	12100 J	25700 J	22500 J	25400 J
Lead	MG/KG	33.3	100%	63	0	85	85	10.4 J	7.8 J	7.6 J	10.2 J	9.4 J	9.7 J
Magnesium	MG/KG	74400	100%		0	85	85	13700 J	10700 J	74400 J	12200 J	17000 J	17200 J
Manganese	MG/KG	1650	100%	1600	2	85	85	401 J	498 J	499 J	478 J	480 J	572 J
Mercury	MG/KG	0.05	95%	0.18	0	81	85	0.02 J	0.01 J	0.03 J	0.01 J	0.01 J	0.02 J
Nickel	MG/KG	75	100%	30	32	85	85	**30.7** J	24 J	14.2 J	**36** J	21.9 J	25.9 J
Potassium	MG/KG	5330	100%		0	85	85	1700 J	1570 J	1100 J	1930 J	2020 J	2370 J
Selenium	MG/KG	2	18%	3.9	0	15	85	0.79 J	0.173 UJ	0.173 UJ	0.173 UJ	1 J	1.16 UJ
Silver	MG/KG	0	0%	2	0	0	85	0.0257 UJ	1.06 UJ	0.0257 UJ	0.0257 UJ	0.0257 UJ	0.0257 UJ
Sodium	MG/KG	390	100%		0	85	85	144 J	130 J	214 J	176 J	145 J	155 J
Thallium	MG/KG	0	0%		0	0	85	0.176 UJ	0.176 UJ	0.176 UJ	0.176 UJ	0.176 UJ	0.176 UJ
Vanadium	MG/KG	68	100%		0	85	85	18 J	16.9 J	12.7 J	19.5 J	24.7 J	26.8 J
Zinc	MG/KG	154	100%	109	2	85	85	49.1 J	48.9 J	29.1 J	49.8 J	48.5 J	53.7 J
TCLP													
TCLP 1,1-Dichloroethene	UG/L	0	0%		0	0	3						
TCLP 1,2-Dichloroethane	UG/L	0	0%		0	0	3						
TCLP Benzene	UG/L	0	0%		0	0	3						
TCLP Carbon tetrachloride	UG/L	0	0%		0	0	3						
TCLP Chlorobenzene	UG/L	0	0%		0	0	3						
TCLP Chloroform	UG/L	0	0%		0	0	3						
TCLP Methyl ethyl ketone	UG/L	0	0%		0	0	3						
TCLP Tetrachloroethene	UG/L	0	0%		0	0	3						
TCLP Trichloroethene	UG/L	0	0%		0	0	3						
TCLP Vinyl chloride	UG/L	0	0%		0	0	3						

Notes:
(1) The dataset of samples consists of the Inplace samples representing current site conditions
The overburden C1 samples were not included in this dataset.
(2) NYSDEC's Unrestricted Use Soil Cleanup Objective, 6 NYCRR Part 375-6.8(a).
(3) Sample/Duplicate pairs are evaluated as separate and discrete samples in this table
(4) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected; the associated reporting limit is approximate
R = the analytical result was rejected during data validation

Table B-1C
SEAD-12 Complete Confirmatory Soil Sample Analytical Results
Compared to NYSDEC Unrestricted Use Levels
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION								SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12
LOCATION ID								S12EXPR-C-1-01	S12EXPR-C-2-01	S12EXPR-D-1-01	S12EXPR-D-2-01	S12EXPR-E-1-01	S12EXSW-A-2-01
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								S12EXPR-C-1-01	S12EXPR-C-2-01	S12EXPR-D-1-01	S12EXPR-D-2-01	S12EXPR-E-1-01	S12EXSW-A-2-01
TOP OF SAMPLE								0	0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0
SAMPLE DATE								7/29/2009	7/29/2009	7/29/2009	7/29/2009	7/29/2009	8/5/2009
QC CODE								SA	SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA
AREA								Pit C1	Pit C1	Pit C1	Pit C1	Pit C1	Pit C1
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**NYSDEC Unrestricted Use Level**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Volatile Organic Compounds													
1,1,1-Trichloroethane	UG/KG	0	0%	680	0	0	85	0.24 UJ	0.23 UJ	0.25 UJ	0.24 UJ	0.26 UJ	0.24 U
1,1,2,2-Tetrachloroethane	UG/KG	0	0%		0	0	85	0.36 UJ	0.35 UJ	0.38 UJ	0.36 UJ	0.4 UJ	0.44 U
1,1,2-Trichloroethane	UG/KG	0	0%		0	0	85	0.26 UJ	0.25 UJ	0.28 UJ	0.26 UJ	0.29 UJ	0.64 U
1,1-Dichloroethane	UG/KG	0	0%	270	0	0	85	0.18 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.2 UJ	0.51 U
1,1-Dichloroethene	UG/KG	0	0%	330	0	0	85	0.36 UJ	0.35 UJ	0.38 UJ	0.36 UJ	0.4 UJ	0.41 U
1,2-Dichloroethane	UG/KG	0	0%	20	0	0	85	0.29 UJ	0.29 UJ	0.31 UJ	0.29 UJ	0.33 UJ	0.39 U
1,2-Dichloropropane	UG/KG	0	0%		0	0	85	0.29 UJ	0.29 UJ	0.31 UJ	0.29 UJ	0.33 UJ	0.43 U
Acetone	UG/KG	9.6	13%	50	0	11	85	22 UJ	22 UJ	24 UJ	3.5 J	25 UJ	22 UJ
Benzene	UG/KG	0	0%	60	0	0	85	0.24 UJ	0.23 UJ	0.25 UJ	0.24 UJ	0.26 UJ	0.51 U
Bromodichloromethane	UG/KG	0	0%		0	0	85	0.24 UJ	0.23 UJ	0.25 UJ	0.24 UJ	0.26 UJ	0.56 U
Bromoform	UG/KG	0	0%		0	0	85	0.47 UJ	0.46 UJ	0.5 UJ	0.47 UJ	0.52 UJ	0.47 U
Carbon disulfide	UG/KG	2.5	2%		0	2	85	0.57 UJ	0.56 UJ	0.6 UJ	0.56 UJ	0.64 UJ	0.56 U
Carbon tetrachloride	UG/KG	0	0%	760	0	0	85	0.5 UJ	0.49 UJ	0.53 UJ	0.5 UJ	0.56 UJ	0.5 U
Chlorobenzene	UG/KG	0	0%	1100	0	0	85	0.25 UJ	0.24 UJ	0.26 UJ	0.25 UJ	0.28 UJ	0.53 U
Chlorodibromomethane	UG/KG	0	0%		0	0	85	0.37 UJ	0.36 UJ	0.39 UJ	0.37 UJ	0.41 UJ	0.37 U
Chloroethane	UG/KG	0	0%		0	0	85	0.48 UJ	0.47 UJ	0.51 UJ	0.48 UJ	0.54 UJ	0.53 U
Chloroform	UG/KG	0	0%	370	0	0	85	0.36 UJ	0.35 UJ	0.38 UJ	0.36 UJ	0.4 UJ	0.48 U
Cis-1,2-Dichloroethene	UG/KG	0.45	1%	250	0	1	85	0.25 UJ	0.24 UJ	0.26 UJ	0.25 UJ	0.28 UJ	0.34 U
Cis-1,3-Dichloropropene	UG/KG	0	0%		0	0	85	0.34 UJ	0.33 UJ	0.36 UJ	0.33 UJ	0.38 UJ	0.38 U
Ethyl benzene	UG/KG	2.7	1%	1000	0	1	85	0.98 UJ	0.96 UJ	1.1 UJ	0.97 UJ	1.1 UJ	0.97 U
Meta/Para Xylene	UG/KG	1.3	4%	260	0	3	85	0.7 UJ	0.69 UJ	0.75 UJ	0.86 J	0.78 UJ	1.1 U
Methyl bromide	UG/KG	0	0%		0	0	85	0.5 UJ	0.49 UJ	0.53 UJ	0.5 UJ	0.56 UJ	0.86 UJ
Methyl butyl ketone	UG/KG	0	0%		0	0	85	0.78 UJ	0.76 UJ	0.83 UJ	0.77 UJ	0.87 UJ	0.78 U
Methyl chloride	UG/KG	0	0%		0	0	85	0.34 UJ	0.33 UJ	0.36 UJ	0.33 UJ	0.38 UJ	0.63 U
Methyl ethyl ketone	UG/KG	1.6	5%	120	0	4	85	0.85 UJ	0.83 UJ	0.9 UJ	0.84 UJ	0.95 UJ	0.84 U
Methyl isobutyl ketone	UG/KG	0	0%		0	0	85	0.73 UJ	0.71 UJ	0.77 UJ	0.72 UJ	0.81 UJ	0.72 U
Methylene chloride	UG/KG	2.8	24%	50	0	20	85	0.43 UJ	0.42 UJ	0.45 UJ	0.42 UJ	0.48 UJ	0.48 J
Ortho Xylene	UG/KG	0	0%	260	0	0	85	0.7 UJ	0.69 UJ	0.75 UJ	0.7 UJ	0.78 UJ	0.7 U
Styrene	UG/KG	0.61	4%		0	3	85	0.32 UJ	0.31 UJ	0.33 UJ	0.31 UJ	0.35 UJ	0.5 U
Tetrachloroethene	UG/KG	0	0%	1300	0	0	85	0.55 UJ	0.54 UJ	0.58 UJ	0.54 UJ	0.61 UJ	0.54 U
Toluene	UG/KG	3.3	48%	700	0	41	85	0.37 J	0.35 UJ	0.38 UJ	0.8 J	0.4 UJ	0.46 J
Total Xylenes	UG/KG	0	0%	260	0	0	8						
Trans-1,2-Dichloroethene	UG/KG	0	0%	190	0	0	85	0.35 UJ	0.34 UJ	0.37 UJ	0.35 UJ	0.39 UJ	0.57 U
Trans-1,3-Dichloropropene	UG/KG	0	0%		0	0	85	0.4 UJ	0.39 UJ	0.43 UJ	0.4 UJ	0.45 UJ	0.41 U
Trichloroethene	UG/KG	1.2	16%	470	0	14	85	0.45 UJ	0.44 UJ	0.48 UJ	0.44 UJ	0.5 UJ	0.44 U
Vinyl chloride	UG/KG	0	0%	20	0	0	85	0.26 UJ	0.25 UJ	0.28 UJ	0.26 UJ	0.29 UJ	0.52 U
Semivolatile Organic Compounds													
1,2,4-Trichlorobenzene	UG/KG	0	0%		0	0	85	36 UJ	35 UJ	38 UJ	36 UJ	40 UJ	36 U
1,2-Dichlorobenzene	UG/KG	0	0%	1100	0	0	85	33 UJ	32 UJ	35 UJ	32 UJ	36 UJ	32 U
1,3-Dichlorobenzene	UG/KG	0	0%	2400	0	0	85	36 UJ	35 UJ	38 UJ	36 UJ	40 UJ	36 U
1,4-Dichlorobenzene	UG/KG	0	0%	1800	0	0	85	33 UJ	32 UJ	35 UJ	32 UJ	36 UJ	32 U
2,4,5-Trichlorophenol	UG/KG	0	0%		0	0	85	50 UJ	49 UJ	53 UJ	50 UJ	56 UJ	50 U
2,4,6-Trichlorophenol	UG/KG	0	0%		0	0	85	55 UJ	54 UJ	58 UJ	54 UJ	61 UJ	54 U
2,4-Dichlorophenol	UG/KG	0	0%		0	0	85	44 UJ	43 UJ	46 UJ	43 UJ	49 UJ	43 U
2,4-Dimethylphenol	UG/KG	0	0%		0	0	85	40 UJ	39 UJ	43 UJ	40 UJ	45 UJ	40 U
2,4-Dinitrophenol	UG/KG	0	0%		0	0	85	1100 UJ	1100 UJ	1200 UJ	1100 UJ	1200 UJ	1100 UJ
2,4-Dinitrotoluene	UG/KG	0	0%		0	0	85	59 UJ	58 UJ	63 UJ	59 UJ	66 UJ	59 U
2,6-Dinitrotoluene	UG/KG	0	0%		0	0	85	45 UJ	44 UJ	48 UJ	44 UJ	50 UJ	44 U

Table B-1C
SEAD-12 Complete Confirmatory Soil Sample Analytical Results
Compared to NYSDEC Unrestricted Use Levels
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION								SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12
LOCATION ID								S12EXPR-C-1-01	S12EXPR-C-2-01	S12EXPR-D-1-01	S12EXPR-D-2-01	S12EXPR-E-1-01	S12EXSW-A-2-01
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								S12EXPR-C-1-01	S12EXPR-C-2-01	S12EXPR-D-1-01	S12EXPR-D-2-01	S12EXPR-E-1-01	S12EXSW-A-2-01
TOP OF SAMPLE								0	0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0
SAMPLE DATE								7/29/2009	7/29/2009	7/29/2009	7/29/2009	7/29/2009	8/5/2009
QC CODE								SA	SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA
AREA								Pit C1	Pit C1	Pit C1	Pit C1	Pit C1	Pit C1
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**NYSDEC Unrestricted Use Level**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
2-Chloronaphthalene	UG/KG	0	0%		0	0	85	40 UJ	39 UJ	43 UJ	40 UJ	45 UJ	40 U
2-Chlorophenol	UG/KG	0	0%		0	0	85	43 UJ	42 UJ	45 UJ	42 UJ	48 UJ	42 U
2-Methylnaphthalene	UG/KG	0	0%		0	0	85	36 UJ	35 UJ	38 UJ	36 UJ	40 UJ	36 U
2-Methylphenol	UG/KG	0	0%	330	0	0	85	32 UJ	31 UJ	33 UJ	31 UJ	35 UJ	31 U
2-Nitroaniline	UG/KG	0	0%		0	0	85	1300 UJ	1300 UJ	1400 UJ	1300 UJ	1500 UJ	1300 U
2-Nitrophenol	UG/KG	0	0%		0	0	85	30 UJ	30 UJ	32 UJ	30 UJ	34 UJ	30 U
3,3'-Dichlorobenzidine	UG/KG	0	0%		0	0	85	43 UJ	42 UJ	45 UJ	42 UJ	48 UJ	42 U
3-Nitroaniline	UG/KG	0	0%		0	0	85	890 UJ	870 UJ	940 UJ	880 UJ	990 UJ	880 U
4,6-Dinitro-2-methylphenol	UG/KG	0	0%		0	0	85	1700 UJ	1600 UJ	1800 UJ	1600 UJ	1800 UJ	1600 U
4-Bromophenyl phenyl ether	UG/KG	0	0%		0	0	85	45 UJ	44 UJ	48 UJ	44 UJ	50 UJ	44 U
4-Chloro-3-methylphenol	UG/KG	0	0%		0	0	85	43 UJ	42 UJ	45 UJ	42 UJ	48 UJ	42 U
4-Chloroaniline	UG/KG	0	0%		0	0	85	42 UJ	41 UJ	44 UJ	41 UJ	46 UJ	41 U
4-Chlorophenyl phenyl ether	UG/KG	0	0%		0	0	85	44 UJ	43 UJ	46 UJ	43 UJ	49 UJ	43 U
4-Methylphenol	UG/KG	0	0%	330	0	0	8						
4-Nitroaniline	UG/KG	0	0%		0	0	85	1400 UJ	1300 UJ	1400 UJ	1300 UJ	1500 UJ	1300 U
4-Nitrophenol	UG/KG	0	0%		0	0	85	1200 UJ	1200 UJ	1300 UJ	1200 UJ	1300 UJ	1200 U
Acenaphthene	UG/KG	0	0%	20000	0	0	85	44 UJ	43 UJ	46 UJ	43 UJ	49 UJ	43 U
Acenaphthylene	UG/KG	0	0%	100000	0	0	85	40 UJ	39 UJ	43 UJ	40 UJ	45 UJ	40 U
Anthracene	UG/KG	0	0%	100000	0	0	85	42 UJ	41 UJ	44 UJ	41 UJ	46 UJ	41 U
Benzo(a)anthracene	UG/KG	0	0%	1000	0	0	85	44 UJ	43 UJ	46 UJ	43 UJ	49 UJ	43 U
Benzo(a)pyrene	UG/KG	0	0%	1000	0	0	85	37 UJ	36 UJ	39 UJ	37 UJ	41 UJ	37 U
Benzo(b)fluoranthene	UG/KG	0	0%	1000	0	0	85	53 UJ	51 UJ	56 UJ	52 UJ	59 UJ	52 U
Benzo(ghi)perylene	UG/KG	0	0%	100000	0	0	85	99 UJ	97 UJ	110 UJ	98 UJ	120 UJ	98 U
Benzo(k)fluoranthene	UG/KG	0	0%	800	0	0	85	54 UJ	52 UJ	57 UJ	53 UJ	60 UJ	53 U
Benzyl alcohol	UG/KG	140	38%		0	32	85	57 J	36 J	59 J	26 UJ	29 UJ	26 U
Bis(2-Chloroethoxy)methane	UG/KG	0	0%		0	0	85	55 UJ	54 UJ	58 UJ	54 UJ	61 UJ	54 U
Bis(2-Chloroethyl)ether	UG/KG	0	0%		0	0	85	43 UJ	42 UJ	45 UJ	42 UJ	48 UJ	42 U
Bis(2-Chloroisopropyl)ether	UG/KG	0	0%		0	0	85	52 UJ	50 UJ	55 UJ	51 UJ	57 UJ	51 U
Bis(2-Ethylhexyl)phthalate	UG/KG	120	11%		0	9	85	62 UJ	60 UJ	96 J	61 UJ	69 UJ	61 U
Butylbenzylphthalate	UG/KG	0	0%		0	0	85	45 UJ	44 UJ	48 UJ	44 UJ	50 UJ	44 U
Carbazole	UG/KG	0	0%		0	0	85	60 UJ	59 UJ	64 UJ	60 UJ	67 UJ	60 U
Chrysene	UG/KG	0	0%	1000	0	0	85	45 UJ	44 UJ	48 UJ	44 UJ	50 UJ	44 U
Di-n-butylphthalate	UG/KG	0	0%		0	0	85	150 UJ	150 UJ	160 UJ	150 UJ	170 UJ	150 U
Di-n-octylphthalate	UG/KG	0	0%		0	0	85	37 UJ	36 UJ	39 UJ	37 UJ	41 UJ	37 U
Dibenz(a,h)anthracene	UG/KG	0	0%	330	0	0	85	43 UJ	42 UJ	45 UJ	42 UJ	48 UJ	42 U
Dibenzofuran	UG/KG	0	0%	7000	0	0	85	40 UJ	39 UJ	43 UJ	40 UJ	45 UJ	40 U
Diethyl phthalate	UG/KG	0	0%		0	0	85	44 UJ	43 UJ	46 UJ	43 UJ	49 UJ	360 U
Dimethylphthalate	UG/KG	86	7%		0	6	85	44 UJ	43 UJ	46 UJ	43 UJ	49 UJ	43 U
Fluoranthene	UG/KG	74	2%	100000	0	2	85	44 UJ	43 UJ	46 UJ	43 UJ	49 UJ	43 U
Fluorene	UG/KG	0	0%	30000	0	0	85	36 UJ	35 UJ	38 UJ	36 UJ	40 UJ	36 U
Hexachlorobenzene	UG/KG	0	0%	330	0	0	85	42 UJ	41 UJ	44 UJ	41 UJ	46 UJ	41 U
Hexachlorobutadiene	UG/KG	0	0%		0	0	85	43 UJ	42 UJ	45 UJ	42 UJ	48 UJ	42 U
Hexachlorocyclopentadiene	UG/KG	0	0%		0	0	85	39 UJ	38 UJ	42 UJ	39 UJ	44 UJ	39 U
Hexachloroethane	UG/KG	0	0%		0	0	85	35 UJ	34 UJ	37 UJ	35 UJ	39 UJ	34 U
Indeno(1,2,3-cd)pyrene	UG/KG	0	0%	500	0	0	85	40 UJ	39 UJ	43 UJ	40 UJ	45 UJ	40 U
Isophorone	UG/KG	0	0%		0	0	85	44 UJ	43 UJ	46 UJ	43 UJ	49 UJ	43 U
N-Nitrosodimethylamine	UG/KG	0	0%		0	0	85	63 UJ	61 UJ	66 UJ	62 UJ	70 UJ	62 U
N-Nitrosodiphenylamine	UG/KG	0	0%		0	0	85	48 UJ	47 UJ	51 UJ	48 UJ	54 UJ	48 U
N-Nitrosodipropylamine	UG/KG	0	0%		0	0	85	48 UJ	47 UJ	51 UJ	48 UJ	54 UJ	48 U

Table B-1C
SEAD-12 Complete Confirmatory Soil Sample Analytical Results
Compared to NYSDEC Unrestricted Use Levels
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION							SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12
LOCATION ID							S12EXPR-C-1-01	S12EXPR-C-2-01	S12EXPR-D-1-01	S12EXPR-D-2-01	S12EXPR-E-1-01	S12EXSW-A-2-01
MATRIX							SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID							S12EXPR-C-1-01	S12EXPR-C-2-01	S12EXPR-D-1-01	S12EXPR-D-2-01	S12EXPR-E-1-01	S12EXSW-A-2-01
TOP OF SAMPLE							0	0	0	0	0	0
BOTTOM OF SAMPLE							0.2	0.2	0.2	0.2	0.2	0
SAMPLE DATE							7/29/2009	7/29/2009	7/29/2009	7/29/2009	7/29/2009	8/5/2009
QC CODE							SA	SA	SA	SA	SA	SA
STUDY ID							RA	RA	RA	RA	RA	RA
AREA							Pit C1	Pit C1	Pit C1	Pit C1	Pit C1	Pit C1
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**NYSDEC Unrestricted Use Level**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Naphthalene	UG/KG	0	0%	12000	0	0	85	33 UJ	32 UJ	35 UJ	32 UJ	36 UJ	32 U
Nitrobenzene	UG/KG	0	0%		0	0	85	47 UJ	46 UJ	50 UJ	47 UJ	52 UJ	47 U
Pentachlorophenol	UG/KG	0	0%	800	0	0	85	1300 UJ	1200 UJ	1300 UJ	1300 UJ	1400 UJ	1300 U
Phenanthrene	UG/KG	52	2%	100000	0	2	85	45 UJ	44 UJ	48 UJ	44 UJ	50 UJ	44 U
Phenol	UG/KG	0	0%	330	0	0	85	43 UJ	42 UJ	45 UJ	42 UJ	48 UJ	42 U
Pyrene	UG/KG	64	2%	100000	0	2	85	39 UJ	38 UJ	42 UJ	39 UJ	44 UJ	39 U
PCBs													
Aroclor-1016	UG/KG	0	0%	100	0	0	87	19 UJ	19 UJ	20 UJ	19 UJ	22 UJ	19 U
Aroclor-1221	UG/KG	0	0%	100	0	0	87	43 UJ	42 UJ	45 UJ	42 UJ	48 UJ	42 U
Aroclor-1232	UG/KG	0	0%	100	0	0	87	19 UJ	19 UJ	20 UJ	19 UJ	22 UJ	19 U
Aroclor-1242	UG/KG	0	0%	100	0	0	87	29 UJ	29 UJ	31 UJ	29 UJ	33 UJ	29 U
Aroclor-1248	UG/KG	0	0%	100	0	0	87	19 UJ	19 UJ	20 UJ	19 UJ	22 UJ	19 U
Aroclor-1254	UG/KG	78	5%	100	0	4	87	19 UJ	19 UJ	20 UJ	19 UJ	22 UJ	19 U
Aroclor-1260	UG/KG	0	0%	100	0	0	87	34 UJ	33 UJ	36 UJ	33 UJ	38 UJ	33 U
Aroclor-1268	UG/KG	0	0%	100	0	0	87	19 UJ	19 UJ	20 UJ	19 UJ	22 UJ	19 U
Pesticides													
4,4'-DDD	UG/KG	6.9	1%	3.3	1	1	85	1.9 UJ	1.9 UJ	2 UJ	1.9 UJ	2.1 UJ	1.9 U
4,4'-DDE	UG/KG	5.9	4%	3.3	2	3	85	1.9 UJ	1.9 UJ	2 UJ	1.9 UJ	2.1 UJ	1.9 U
4,4'-DDT	UG/KG	9.8	4%	3.3	2	3	85	1.9 UJ	1.9 UJ	2 UJ	1.9 UJ	2.1 UJ	1.9 U
Aldrin	UG/KG	0	0%	5	0	0	85	0.94 UJ	0.91 UJ	0.99 UJ	0.93 UJ	1.1 UJ	0.93 U
Alpha-BHC	UG/KG	210	6%	20	2	5	85	0.94 UJ	0.91 UJ	0.99 UJ	0.93 UJ	1.1 UJ	0.93 U
Alpha-Chlordane	UG/KG	0	0%	94	0	0	85	0.94 UJ	0.91 UJ	0.99 UJ	0.93 UJ	1.1 UJ	0.93 U
Beta-BHC	UG/KG	63	1%	36	1	1	85	0.94 UJ	0.91 UJ	0.99 UJ	0.93 UJ	1.1 UJ	0.93 U
Chlordane (Alpha And Gamma Isomers)	UG/KG	0	0%	94	0	0	8						
Delta-BHC	UG/KG	61	4%	40	1	3	85	0.94 UJ	0.91 UJ	0.99 UJ	0.93 UJ	1.1 UJ	0.93 U
Dieldrin	UG/KG	0	0%	5	0	0	85	1.9 UJ	1.9 UJ	2 UJ	1.9 UJ	2.1 UJ	1.9 U
Endosulfan I	UG/KG	0	0%	2400	0	0	85	0.94 UJ	0.91 UJ	0.99 UJ	0.93 UJ	1.1 UJ	0.93 U
Endosulfan II	UG/KG	0	0%	2400	0	0	85	1.9 UJ	1.9 UJ	2 UJ	1.9 UJ	2.1 UJ	1.9 U
Endosulfan sulfate	UG/KG	0	0%	2400	0	0	85	1.9 UJ	1.9 UJ	2 UJ	1.9 UJ	2.1 UJ	1.9 U
Endrin	UG/KG	0	0%	14	0	0	85	1.9 UJ	1.9 UJ	2 UJ	1.9 UJ	2.1 UJ	1.9 U
Endrin aldehyde	UG/KG	0	0%		0	0	85	1.9 UJ	1.9 UJ	2 UJ	1.9 UJ	2.1 UJ	1.9 U
Endrin ketone	UG/KG	0	0%		0	0	85	1.9 UJ	1.9 UJ	2 UJ	1.9 UJ	2.1 UJ	1.9 U
Gamma-BHC/Lindane	UG/KG	0	0%	100	0	0	85	0.94 UJ	0.91 UJ	0.99 UJ	0.93 UJ	1.1 UJ	0.93 U
Gamma-Chlordane	UG/KG	0	0%		0	0	77	0.94 UJ	0.91 UJ	0.99 UJ	0.93 UJ	1.1 UJ	0.93 U
Heptachlor	UG/KG	0	0%	42	0	0	85	0.94 UJ	0.91 UJ	0.99 UJ	0.93 UJ	1.1 UJ	0.93 U
Heptachlor epoxide	UG/KG	0	0%		0	0	85	0.94 UJ	0.91 UJ	0.99 UJ	0.93 UJ	1.1 UJ	0.93 U
Methoxychlor	UG/KG	0	0%		0	0	85	9.3 UJ	9.1 UJ	9.9 UJ	9.2 UJ	11 UJ	9.2 U
Toxaphene	UG/KG	0	0%		0	0	85	19 UJ	19 UJ	20 UJ	19 UJ	21 UJ	19 U
Metals													
Aluminum	MG/KG	35100	100%		0	85	85	9850 J	9930 J	12300 J	10700 J	16400 J	10600
Antimony	MG/KG	0	0%		0	0	85	0.4 UJ	0.4 UJ	0.4 UJ	0.4 UJ	0.4 UJ	0.5 UJ
Arsenic	MG/KG	12.2	100%	13	0	85	85	5 J	3.8 J	3.8 J	4.1 J	4.1 J	4.1
Barium	MG/KG	304	100%	350	0	85	85	109 J	108 J	84.2 J	110 J	106 J	97.2
Beryllium	MG/KG	1.7	96%	7.2	0	82	85	0.58 J	0.55 J	0.65 J	0.58 J	0.82 J	0.58
Cadmium	MG/KG	2.5	34%	2.5	0	29	85	0.16 J	0.16 J	0.31 J	0.55 UJ	0.27 J	0.55 U
Calcium	MG/KG	186000	100%		0	85	85	92400 J	85100 J	64700 J	79400 J	4010 J	75100
Chromium	MG/KG	51.2	100%	30	2	85	85	15.9 J	15.9 J	19.9 J	17.5 J	22 J	17.1
Cobalt	MG/KG	29	100%		0	85	85	10.6 J	10.3 J	9.8 J	10.7 J	11.2 J	9.5
Copper	MG/KG	61.4	100%	50	1	85	85	27.9 J	21.5 J	22.2 J	22.6 J	18 J	24.1

Table B-1C
SEAD-12 Complete Confirmatory Soil Sample Analytical Results
Compared to NYSDEC Unrestricted Use Levels
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION								SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12
LOCATION ID								S12EXPR-C-1-01	S12EXPR-C-2-01	S12EXPR-D-1-01	S12EXPR-D-2-01	S12EXPR-E-1-01	S12EXSW-A-2-01
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								S12EXPR-C-1-01	S12EXPR-C-2-01	S12EXPR-D-1-01	S12EXPR-D-2-01	S12EXPR-E-1-01	S12EXSW-A-2-01
TOP OF SAMPLE								0	0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0
SAMPLE DATE								7/29/2009	7/29/2009	7/29/2009	7/29/2009	7/29/2009	8/5/2009
QC CODE								SA	SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA
AREA								Pit C1	Pit C1	Pit C1	Pit C1	Pit C1	Pit C1
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**NYSDEC Unrestricted Use Level**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Cyanide	MG/KG	0	0%	27	0	0	85	0.5 UJ	0.5 UJ	0.5 UJ	0.42 UJ	0.5 UJ	0.42 U
Iron	MG/KG	56400	100%		0	85	85	21300 J	21200 J	24000 J	22400 J	25700 J	19800
Lead	MG/KG	33.3	100%	63	0	85	85	9.8 J	9.2 J	15.4 J	12.5 J	17.8 J	11.3
Magnesium	MG/KG	74400	100%		0	85	85	15300 J	16100 J	12600 J	17100 J	4070 J	14800
Manganese	MG/KG	1650	100%	1600	2	85	85	437 J	462 J	428 J	485 J	740 J	472
Mercury	MG/KG	0.05	95%	0.18	0	81	85	0.02 J	0.02 J	0.03 J	0.02 J	0.05 J	0.02 J
Nickel	MG/KG	75	100%	30	32	85	85	**34.3** J	28.6 J	**30.5** J	**30.6** J	24.6 J	29.6 J
Potassium	MG/KG	5330	100%		0	85	85	1860 J	1730 J	1780 J	1810 J	1740 J	1630 J
Selenium	MG/KG	2	18%	3.9	0	15	85	0.173 UJ	0.173 UJ	0.61 J	1.1 UJ	2 J	1.1 U
Silver	MG/KG	0	0%	2	0	0	85	1.09 UJ	0.0257 UJ	0.0257 UJ	0.0257 UJ	1.19 UJ	0.3 U
Sodium	MG/KG	390	100%		0	85	85	159 J	155 J	138 J	158 J	37.2 J	140
Thallium	MG/KG	0	0%		0	0	85	0.176 UJ	0.176 UJ	0.176 UJ	0.176 UJ	0.176 UJ	0.2 U
Vanadium	MG/KG	68	100%		0	85	85	18.3 J	17.4 J	20.6 J	19 J	27.7 J	19
Zinc	MG/KG	154	100%	109	2	85	85	49.7 J	49.3 J	102 J	62.6 J	63.8 J	57.4 J
TCLP													
TCLP 1,1-Dichloroethene	UG/L	0	0%		0	0	3						
TCLP 1,2-Dichloroethane	UG/L	0	0%		0	0	3						
TCLP Benzene	UG/L	0	0%		0	0	3						
TCLP Carbon tetrachloride	UG/L	0	0%		0	0	3						
TCLP Chlorobenzene	UG/L	0	0%		0	0	3						
TCLP Chloroform	UG/L	0	0%		0	0	3						
TCLP Methyl ethyl ketone	UG/L	0	0%		0	0	3						
TCLP Tetrachloroethene	UG/L	0	0%		0	0	3						
TCLP Trichloroethene	UG/L	0	0%		0	0	3						
TCLP Vinyl chloride	UG/L	0	0%		0	0	3						

Notes:
(1) The dataset of samples consists of the Inplace samples representing current site conditions
The overburden C1 samples were not included in this dataset.
(2) NYSDEC's Unrestricted Use Soil Cleanup Objective, 6 NYCRR Part 375-6.8(a).
(3) Sample/Duplicate pairs are evaluated as separate and discrete samples in this table
(4) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected; the associated reporting limit is approximate
R = the analytical result was rejected during data validation

Table B-1C
SEAD-12 Complete Confirmatory Soil Sample Analytical Results
Compared to NYSDEC Unrestricted Use Levels
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION								SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12
LOCATION ID								S12EXSW-B-1-01	S12EXSW-B-2-01	S12EXSW-C-1-01	S12EXSW-C-2-01	S12EXSW-D-1-01	S12EXSW-D-2-01
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								S12EXSW-B-1-01	S12EXSW-B-2-01	S12EXSW-C-1-01	S12EXSW-C-2-01	S12EXSW-D-1-01	S12EXSW-D-2-02
TOP OF SAMPLE								0	0	0	0	0	0
BOTTOM OF SAMPLE								0	0	0	0	0	0
SAMPLE DATE								8/5/2009	8/5/2009	8/5/2009	8/5/2009	8/5/2009	8/5/2009
QC CODE								SA	SA	SA	SA	SA	DU
STUDY ID								RA	RA	RA	RA	RA	RA
AREA								Pit C1	Pit C1	Pit C1	Pit C1	Pit C1	Pit C1
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**NYSDEC Unrestricted Use Level**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Volatile Organic Compounds													
1,1,1-Trichloroethane	UG/KG	0	0%	680	0	0	85	0.23 U	0.74 U	0.24 U	0.24 U	0.21 U	0.24 U
1,1,2,2-Tetrachloroethane	UG/KG	0	0%		0	0	85	0.44 U	1.4 U	0.45 U	0.46 U	0.4 U	0.46 U
1,1,2-Trichloroethane	UG/KG	0	0%		0	0	85	0.63 U	2.1 U	0.64 U	0.66 U	0.58 U	0.67 U
1,1-Dichloroethane	UG/KG	0	0%	270	0	0	85	0.5 U	1.7 U	0.51 U	0.53 U	0.46 U	0.53 U
1,1-Dichloroethene	UG/KG	0	0%	330	0	0	85	0.41 U	1.3 U	0.41 U	0.42 U	0.37 U	0.43 U
1,2-Dichloroethane	UG/KG	0	0%	20	0	0	85	0.39 U	1.3 U	0.39 U	0.4 U	0.36 U	0.4 U
1,2-Dichloropropane	UG/KG	0	0%		0	0	85	0.43 U	1.4 U	0.43 U	0.45 U	0.39 U	0.45 U
Acetone	UG/KG	9.6	13%	50	0	11	85	1.7 UJ	70 UJ	22 UJ	23 UJ	20 UJ	23 UJ
Benzene	UG/KG	0	0%	60	0	0	85	0.5 U	1.7 U	0.51 U	0.53 U	0.46 U	0.53 U
Bromodichloromethane	UG/KG	0	0%		0	0	85	0.56 U	1.8 U	0.57 U	0.58 U	0.51 U	0.59 U
Bromoform	UG/KG	0	0%		0	0	85	0.46 U	1.5 U	0.47 U	0.48 U	0.42 U	0.48 U
Carbon disulfide	UG/KG	2.5	2%		0	2	85	0.56 U	1.8 U	0.57 U	0.58 U	0.51 U	0.59 U
Carbon tetrachloride	UG/KG	0	0%	760	0	0	85	0.49 U	1.6 U	0.5 U	0.52 U	0.45 U	0.52 U
Chlorobenzene	UG/KG	0	0%	1100	0	0	85	0.53 U	1.7 U	0.53 U	0.55 U	0.48 U	0.55 U
Chlorodibromomethane	UG/KG	0	0%		0	0	85	0.36 U	1.2 U	0.37 U	0.38 U	0.33 U	0.38 U
Chloroethane	UG/KG	0	0%		0	0	85	0.53 U	1.7 U	0.53 U	0.55 U	0.48 U	0.55 U
Chloroform	UG/KG	0	0%	370	0	0	85	0.47 U	1.6 U	0.48 U	0.49 U	0.43 U	0.49 U
Cis-1,2-Dichloroethene	UG/KG	0.45	1%	250	0	1	85	0.34 U	1.1 U	0.35 U	0.36 U	0.31 U	0.36 U
Cis-1,3-Dichloropropene	UG/KG	0	0%		0	0	85	0.37 U	1.2 U	0.38 U	0.39 U	0.34 U	0.39 U
Ethyl benzene	UG/KG	2.7	1%	1000	0	1	85	0.96 U	3.1 U	0.98 U	1 U	0.88 U	1.1 U
Meta/Para Xylene	UG/KG	1.3	4%	260	0	3	85	1.1 U	3.3 U	1.1 U	1.1 U	0.93 U	1.1 U
Methyl bromide	UG/KG	0	0%		0	0	85	0.85 UJ	2.8 UJ	0.86 UJ	0.89 UJ	0.78 UJ	0.89 UJ
Methyl butyl ketone	UG/KG	0	0%		0	0	85	0.78 U	2.5 U	0.79 U	0.81 U	0.71 U	0.81 U
Methyl chloride	UG/KG	0	0%		0	0	85	0.62 U	2 U	0.63 U	0.65 U	0.58 U	0.65 U
Methyl ethyl ketone	UG/KG	1.6	5%	120	0	4	85	0.83 U	2.7 U	0.84 U	0.87 U	0.76 U	0.87 U
Methyl isobutyl ketone	UG/KG	0	0%		0	0	85	0.71 U	2.3 U	0.72 U	0.74 U	0.65 U	0.75 U
Methylene chloride	UG/KG	2.8	24%	50	0	20	85	0.42 U	1.6 J	0.62 J	0.48 J	0.42 J	5.7 U
Ortho Xylene	UG/KG	0	0%	260	0	0	85	0.69 U	2.3 U	0.7 U	0.72 U	0.63 U	0.72 U
Styrene	UG/KG	0.61	4%		0	3	85	0.49 U	1.6 U	0.5 U	0.52 U	0.45 U	0.52 U
Tetrachloroethene	UG/KG	0	0%	1300	0	0	85	0.54 U	1.8 U	0.55 U	0.56 U	0.49 U	0.56 U
Toluene	UG/KG	3.3	48%	700	0	41	85	0.35 U	3.3 J	1.2 J	0.82 J	1.8 J	1.1 J
Total Xylenes	UG/KG	0	0%	260	0	0	8						
Trans-1,2-Dichloroethene	UG/KG	0	0%	190	0	0	85	0.57 U	1.9 U	0.58 U	0.6 U	0.52 U	0.6 U
Trans-1,3-Dichloropropene	UG/KG	0	0%		0	0	85	0.41 U	1.3 U	0.41 U	0.42 U	0.37 U	0.43 U
Trichloroethene	UG/KG	1.2	16%	470	0	14	85	0.44 U	1.4 U	0.45 U	0.46 U	0.4 U	0.46 U
Vinyl chloride	UG/KG	0	0%	20	0	0	85	0.52 U	1.7 U	0.52 U	0.54 U	0.48 U	0.54 U
Semivolatile Organic Compounds													
1,2,4-Trichlorobenzene	UG/KG	0	0%		0	0	85	35 U	120 U	36 U	37 U	32 U	37 U
1,2-Dichlorobenzene	UG/KG	0	0%	1100	0	0	85	32 U	110 U	32 U	33 U	29 U	34 U
1,3-Dichlorobenzene	UG/KG	0	0%	2400	0	0	85	35 U	120 U	36 U	37 U	32 U	37 U
1,4-Dichlorobenzene	UG/KG	0	0%	1800	0	0	85	32 U	110 U	32 U	33 U	29 U	34 U
2,4,5-Trichlorophenol	UG/KG	0	0%		0	0	85	49 U	160 U	50 U	52 U	45 U	52 U
2,4,6-Trichlorophenol	UG/KG	0	0%		0	0	85	54 U	180 U	55 U	56 U	49 U	56 U
2,4-Dichlorophenol	UG/KG	0	0%		0	0	85	43 U	140 U	43 U	45 U	39 U	45 U
2,4-Dimethylphenol	UG/KG	0	0%		0	0	85	40 U	130 U	40 U	41 U	36 U	42 U
2,4-Dinitrophenol	UG/KG	0	0%		0	0	85	1100 UJ	3400 UJ	1100 UJ	1100 UJ	970 UJ	1200 UJ
2,4-Dinitrotoluene	UG/KG	0	0%		0	0	85	58 U	190 U	59 U	61 U	53 U	61 U
2,6-Dinitrotoluene	UG/KG	0	0%		0	0	85	44 U	140 U	45 U	46 U	40 U	46 U

Table B-1C
SEAD-12 Complete Confirmatory Soil Sample Analytical Results
Compared to NYSDEC Unrestricted Use Levels
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION								SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12
LOCATION ID								S12EXSW-B-1-01	S12EXSW-B-2-01	S12EXSW-C-1-01	S12EXSW-C-2-01	S12EXSW-D-1-01	S12EXSW-D-2-01
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								S12EXSW-B-1-01	S12EXSW-B-2-01	S12EXSW-C-1-01	S12EXSW-C-2-01	S12EXSW-D-1-01	S12EXSW-D-2-02
TOP OF SAMPLE								0	0	0	0	0	0
BOTTOM OF SAMPLE								0	0	0	0	0	0
SAMPLE DATE								8/5/2009	8/5/2009	8/5/2009	8/5/2009	8/5/2009	8/5/2009
QC CODE								SA	SA	SA	SA	SA	DU
STUDY ID								RA	RA	RA	RA	RA	RA
AREA								Pit C1	Pit C1	Pit C1	Pit C1	Pit C1	Pit C1
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**NYSDEC Unrestricted Use Level**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
2-Chloronaphthalene	UG/KG	0	0%		0	0	85	40 U	130 U	40 U	41 U	36 U	42 U
2-Chlorophenol	UG/KG	0	0%		0	0	85	42 U	140 U	42 U	44 U	38 U	44 U
2-Methylnaphthalene	UG/KG	0	0%		0	0	85	35 U	120 U	36 U	37 U	32 U	37 U
2-Methylphenol	UG/KG	0	0%	330	0	0	85	31 U	98 U	31 U	32 U	28 U	32 U
2-Nitroaniline	UG/KG	0	0%		0	0	85	1300 U	4100 U	1300 U	1400 U	1200 U	1400 U
2-Nitrophenol	UG/KG	0	0%		0	0	85	30 U	95 U	30 U	31 U	27 U	31 U
3,3'-Dichlorobenzidine	UG/KG	0	0%		0	0	85	42 U	140 U	42 U	44 U	38 U	44 U
3-Nitroaniline	UG/KG	0	0%		0	0	85	870 U	2800 U	890 U	910 U	800 U	920 U
4,6-Dinitro-2-methylphenol	UG/KG	0	0%		0	0	85	1600 U	5100 U	1700 U	1700 U	1500 U	1700 U
4-Bromophenyl phenyl ether	UG/KG	0	0%		0	0	85	44 U	140 U	45 U	46 U	40 U	46 U
4-Chloro-3-methylphenol	UG/KG	0	0%		0	0	85	42 U	140 U	42 U	44 U	38 U	44 U
4-Chloroaniline	UG/KG	0	0%		0	0	85	41 U	130 U	41 U	42 U	37 U	43 U
4-Chlorophenyl phenyl ether	UG/KG	0	0%		0	0	85	43 U	140 U	43 U	45 U	39 U	45 U
4-Methylphenol	UG/KG	0	0%	330	0	0	8						
4-Nitroaniline	UG/KG	0	0%		0	0	85	1300 U	4200 U	1300 U	1400 U	1200 U	1400 U
4-Nitrophenol	UG/KG	0	0%		0	0	85	1200 U	3700 U	1200 U	1200 U	1100 U	1200 U
Acenaphthene	UG/KG	0	0%	20000	0	0	85	43 U	140 U	43 U	45 U	39 U	45 U
Acenaphthylene	UG/KG	0	0%	100000	0	0	85	40 U	130 U	40 U	41 U	36 U	42 U
Anthracene	UG/KG	0	0%	100000	0	0	85	41 U	130 U	41 U	42 U	37 U	43 U
Benzo(a)anthracene	UG/KG	0	0%	1000	0	0	85	43 U	140 U	43 U	45 U	39 U	45 U
Benzo(a)pyrene	UG/KG	0	0%	1000	0	0	85	36 U	120 U	37 U	38 U	33 U	38 U
Benzo(b)fluoranthene	UG/KG	0	0%	1000	0	0	85	52 U	170 U	52 U	54 U	47 U	54 U
Benzo(ghi)perylene	UG/KG	0	0%	100000	0	0	85	97 U	320 U	99 U	110 U	89 U	110 U
Benzo(k)fluoranthene	UG/KG	0	0%	800	0	0	85	53 U	170 U	53 U	55 U	48 U	55 U
Benzyl alcohol	UG/KG	140	38%		0	32	85	25 U	140 J	37 J	45 J	46 J	380 U
Bis(2-Chloroethoxy)methane	UG/KG	0	0%		0	0	85	54 U	180 U	55 U	56 U	49 U	56 U
Bis(2-Chloroethyl)ether	UG/KG	0	0%		0	0	85	42 U	140 U	42 U	44 U	38 U	44 U
Bis(2-Chloroisopropyl)ether	UG/KG	0	0%		0	0	85	50 U	170 U	51 U	53 U	46 U	53 U
Bis(2-Ethylhexyl)phthalate	UG/KG	120	11%		0	9	85	60 U	200 U	61 U	63 U	55 U	63 U
Butylbenzylphthalate	UG/KG	0	0%		0	0	85	44 U	140 U	45 U	46 U	40 U	46 U
Carbazole	UG/KG	0	0%		0	0	85	59 U	190 U	60 U	62 U	54 U	62 U
Chrysene	UG/KG	0	0%	1000	0	0	85	44 U	140 U	45 U	46 U	40 U	46 U
Di-n-butylphthalate	UG/KG	0	0%		0	0	85	150 U	480 U	150 U	160 U	140 U	160 U
Di-n-octylphthalate	UG/KG	0	0%		0	0	85	36 U	120 U	37 U	38 U	33 U	38 U
Dibenz(a,h)anthracene	UG/KG	0	0%	330	0	0	85	42 U	140 U	42 U	44 U	38 U	44 U
Dibenzofuran	UG/KG	0	0%	7000	0	0	85	40 U	130 U	40 U	41 U	36 U	42 U
Diethyl phthalate	UG/KG	0	0%		0	0	85	43 U	140 U	43 U	45 U	39 U	45 U
Dimethylphthalate	UG/KG	86	7%		0	6	85	43 U	140 U	43 U	45 U	39 U	45 U
Fluoranthene	UG/KG	74	2%	100000	0	2	85	43 U	140 U	43 U	45 U	58 J	45 U
Fluorene	UG/KG	0	0%	30000	0	0	85	35 U	120 U	36 U	37 U	32 U	37 U
Hexachlorobenzene	UG/KG	0	0%	330	0	0	85	41 U	130 U	41 U	42 U	37 U	43 U
Hexachlorobutadiene	UG/KG	0	0%		0	0	85	42 U	140 U	42 U	44 U	38 U	44 U
Hexachlorocyclopentadiene	UG/KG	0	0%		0	0	85	39 U	130 U	39 U	40 U	35 U	40 U
Hexachloroethane	UG/KG	0	0%		0	0	85	34 U	110 U	35 U	36 U	31 U	36 U
Indeno(1,2,3-cd)pyrene	UG/KG	0	0%	500	0	0	85	40 U	130 U	40 U	41 U	36 U	42 U
Isophorone	UG/KG	0	0%		0	0	85	43 U	140 U	43 U	45 U	39 U	45 U
N-Nitrosodimethylamine	UG/KG	0	0%		0	0	85	61 U	200 U	62 U	64 U	56 U	64 U
N-Nitrosodiphenylamine	UG/KG	0	0%		0	0	85	47 U	160 U	48 U	49 U	43 U	49 U
N-Nitrosodipropylamine	UG/KG	0	0%		0	0	85	47 U	160 U	48 U	49 U	43 U	49 U

Table B-1C
SEAD-12 Complete Confirmatory Soil Sample Analytical Results
Compared to NYSDEC Unrestricted Use Levels
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION								SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12
LOCATION ID								S12EXSW-B-1-01	S12EXSW-B-2-01	S12EXSW-C-1-01	S12EXSW-C-2-01	S12EXSW-D-1-01	S12EXSW-D-2-01
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								S12EXSW-B-1-01	S12EXSW-B-2-01	S12EXSW-C-1-01	S12EXSW-C-2-01	S12EXSW-D-1-01	S12EXSW-D-2-02
TOP OF SAMPLE								0	0	0	0	0	0
BOTTOM OF SAMPLE								0	0	0	0	0	0
SAMPLE DATE								8/5/2009	8/5/2009	8/5/2009	8/5/2009	8/5/2009	8/5/2009
QC CODE								SA	SA	SA	SA	SA	DU
STUDY ID								RA	RA	RA	RA	RA	RA
AREA								Pit C1	Pit C1	Pit C1	Pit C1	Pit C1	Pit C1
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**NYSDEC Unrestricted Use Level**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Naphthalene	UG/KG	0	0%	12000	0	0	85	32 U	110 U	32 U	33 U	29 U	34 U
Nitrobenzene	UG/KG	0	0%		0	0	85	46 U	150 U	47 U	48 U	42 U	48 U
Pentachlorophenol	UG/KG	0	0%	800	0	0	85	1200 U	3900 U	1300 U	1300 U	1200 U	1300 U
Phenanthrene	UG/KG	52	2%	100000	0	2	85	44 U	140 U	45 U	46 U	44 J	46 U
Phenol	UG/KG	0	0%	330	0	0	85	42 U	140 U	42 U	44 U	38 U	44 U
Pyrene	UG/KG	64	2%	100000	0	2	85	39 U	130 U	39 U	40 U	54 J	40 U
PCBs													
Aroclor-1016	UG/KG	0	0%	100	0	0	87	19 U	60 U	19 U	20 U	19 U	20 U
Aroclor-1221	UG/KG	0	0%	100	0	0	87	42 U	140 U	42 U	44 U	42 U	44 U
Aroclor-1232	UG/KG	0	0%	100	0	0	87	19 U	60 U	19 U	20 U	19 U	20 U
Aroclor-1242	UG/KG	0	0%	100	0	0	87	29 U	91 U	29 U	30 U	29 U	30 U
Aroclor-1248	UG/KG	0	0%	100	0	0	87	19 U	60 U	19 U	20 U	19 U	20 U
Aroclor-1254	UG/KG	78	5%	100	0	4	87	19 U	60 U	19 U	20 U	19 U	20 U
Aroclor-1260	UG/KG	0	0%	100	0	0	87	33 U	110 U	34 U	35 U	33 U	35 U
Aroclor-1268	UG/KG	0	0%	100	0	0	87	19 U	60 U	19 U	20 U	19 U	20 U
Pesticides													
4,4'-DDD	UG/KG	6.9	1%	3.3	1	1	85	1.9 U	5.9 U	1.9 U	1.9 U	1.9 U	2 U
4,4'-DDE	UG/KG	5.9	4%	3.3	2	3	85	1.9 U	5.9 U	1.9 U	1.9 U	**5.6**	2 U
4,4'-DDT	UG/KG	9.8	4%	3.3	2	3	85	1.9 U	5.9 U	1.9 U	1.9 U	**9.8**	2 U
Aldrin	UG/KG	0	0%	5	0	0	85	0.92 U	3 U	0.93 U	0.96 U	0.91 U	0.96 U
Alpha-BHC	UG/KG	210	6%	20	2	5	85	0.92 U	3 U	0.93 U	0.96 U	0.91 U	0.96 U
Alpha-Chlordane	UG/KG	0	0%	94	0	0	85	0.92 U	3 U	0.93 U	0.96 U	0.91 U	0.96 U
Beta-BHC	UG/KG	63	1%	36	1	1	85	0.92 U	3 U	0.93 U	0.96 U	0.91 U	0.96 U
Chlordane (Alpha And Gamma Isomers)	UG/KG	0	0%	94	0	0	8						
Delta-BHC	UG/KG	61	4%	40	1	3	85	0.92 U	3 U	0.93 U	0.96 U	0.91 U	0.96 U
Dieldrin	UG/KG	0	0%	5	0	0	85	1.9 U	5.9 U	1.9 U	1.9 U	1.9 U	2 U
Endosulfan I	UG/KG	0	0%	2400	0	0	85	0.92 U	3 U	0.93 U	0.96 U	0.91 U	0.96 U
Endosulfan II	UG/KG	0	0%	2400	0	0	85	1.9 U	5.9 U	1.9 U	1.9 U	1.9 U	2 U
Endosulfan sulfate	UG/KG	0	0%	2400	0	0	85	1.9 U	5.9 U	1.9 U	1.9 U	1.9 U	2 U
Endrin	UG/KG	0	0%	14	0	0	85	1.9 U	5.9 U	1.9 U	1.9 U	1.9 U	2 U
Endrin aldehyde	UG/KG	0	0%		0	0	85	1.9 U	5.9 U	1.9 U	1.9 U	1.9 U	2 U
Endrin ketone	UG/KG	0	0%		0	0	85	1.9 U	5.9 U	1.9 U	1.9 U	1.9 U	2 U
Gamma-BHC/Lindane	UG/KG	0	0%	100	0	0	85	0.92 U	3 U	0.93 U	0.96 U	0.91 U	0.96 U
Gamma-Chlordane	UG/KG	0	0%		0	0	77	0.92 U	3 U	0.93 U	0.96 U	0.91 U	0.96 U
Heptachlor	UG/KG	0	0%	42	0	0	85	0.92 U	3 U	0.93 U	0.96 U	0.91 U	0.96 U
Heptachlor epoxide	UG/KG	0	0%		0	0	85	0.92 U	3 U	0.93 U	0.96 U	0.91 U	0.96 U
Methoxychlor	UG/KG	0	0%		0	0	85	9.1 U	30 U	9.2 U	9.5 U	9.1 U	9.5 U
Toxaphene	UG/KG	0	0%		0	0	85	19 U	59 U	19 U	19 U	19 U	19 U
Metals													
Aluminum	MG/KG	35100	100%		0	85	85	10500	35100	10300	10200	12600	10200
Antimony	MG/KG	0	0%		0	0	85	0.5 UJ	2 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ
Arsenic	MG/KG	12.2	100%	13	0	85	85	3.5	12.2	5.1	4.9	4	3.8
Barium	MG/KG	304	100%	350	0	85	85	98.8	304	116	92.4	90.7	115
Beryllium	MG/KG	1.7	96%	7.2	0	82	85	0.57	1.7	0.59	0.55	0.68	0.55 J
Cadmium	MG/KG	2.5	34%	2.5	0	29	85	0.53 U	1.7 U	0.55 U	0.55 U	0.53 U	0.56 U
Calcium	MG/KG	186000	100%		0	85	85	86900	186000	99300	79000	46700	87000
Chromium	MG/KG	51.2	100%	30	2	85	85	17.1	**51.2**	17.4	17.4	19.6	17.3
Cobalt	MG/KG	29	100%		0	85	85	9.8	29	9.7	9	9.9	8.8
Copper	MG/KG	61.4	100%	50	1	85	85	21.2	**61.4**	26.5	28.5	23.5	23.8

Table B-1C
SEAD-12 Complete Confirmatory Soil Sample Analytical Results
Compared to NYSDEC Unrestricted Use Levels
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION								SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12
LOCATION ID								S12EXSW-B-1-01	S12EXSW-B-2-01	S12EXSW-C-1-01	S12EXSW-C-2-01	S12EXSW-D-1-01	S12EXSW-D-2-01
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								S12EXSW-B-1-01	S12EXSW-B-2-01	S12EXSW-C-1-01	S12EXSW-C-2-01	S12EXSW-D-1-01	S12EXSW-D-2-02
TOP OF SAMPLE								0	0	0	0	0	0
BOTTOM OF SAMPLE								0	0	0	0	0	0
SAMPLE DATE								8/5/2009	8/5/2009	8/5/2009	8/5/2009	8/5/2009	8/5/2009
QC CODE								SA	SA	SA	SA	SA	DU
STUDY ID								RA	RA	RA	RA	RA	RA
AREA								Pit C1	Pit C1	Pit C1	Pit C1	Pit C1	Pit C1
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**NYSDEC Unrestricted Use Level**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Cyanide	MG/KG	0	0%	27	0	0	85	0.42 U	1.1 U	0.42 U	0.42 U	0.5 U	0.42 U
Iron	MG/KG	56400	100%		0	85	85	19100	56400	20400	21000	20600	20400
Lead	MG/KG	33.3	100%	63	0	85	85	9.8	30	10	11.6	16.3	8.9 J
Magnesium	MG/KG	74400	100%		0	85	85	13900	52700	13400	15500	10700	14600 J
Manganese	MG/KG	1650	100%	1600	2	85	85	463	**1650**	437	398	407	418
Mercury	MG/KG	0.05	95%	0.18	0	81	85	0.021 J	0.05 J	0.019 J	0.018 J	0.036 J	0.025 J
Nickel	MG/KG	75	100%	30	32	85	85	28.9 J	**75** J	**35.1** J	29.9 J	29.2 J	28.2
Potassium	MG/KG	5330	100%		0	85	85	1620 J	5330 J	1790 J	1700 J	1570 J	1950 J
Selenium	MG/KG	2	18%	3.9	0	15	85	1.1 U	3.5 U	0.2 U	1.1 U	1.1 U	0.2 U
Silver	MG/KG	0	0%	2	0	0	85	0.3 U	0.8 U	0.3 U	0.3 U	0.3 U	0.3 U
Sodium	MG/KG	390	100%		0	85	85	150	390	170	140	100 J	160
Thallium	MG/KG	0	0%		0	0	85	0.2 U	2 U	0.2 U	0.2 U	0.2 U	0.3 U
Vanadium	MG/KG	68	100%		0	85	85	18	68	18.5	19.2	22.2	19
Zinc	MG/KG	154	100%	109	2	85	85	48.9 J	**154** J	44 J	53 J	79.9 J	68.1 J
TCLP													
TCLP 1,1-Dichloroethene	UG/L	0	0%		0	0	3						
TCLP 1,2-Dichloroethane	UG/L	0	0%		0	0	3						
TCLP Benzene	UG/L	0	0%		0	0	3						
TCLP Carbon tetrachloride	UG/L	0	0%		0	0	3						
TCLP Chlorobenzene	UG/L	0	0%		0	0	3						
TCLP Chloroform	UG/L	0	0%		0	0	3						
TCLP Methyl ethyl ketone	UG/L	0	0%		0	0	3						
TCLP Tetrachloroethene	UG/L	0	0%		0	0	3						
TCLP Trichloroethene	UG/L	0	0%		0	0	3						
TCLP Vinyl chloride	UG/L	0	0%		0	0	3						

Notes:
(1) The dataset of samples consists of the Inplace samples representing current site conditions
The overburden C1 samples were not included in this dataset.
(2) NYSDEC's Unrestricted Use Soil Cleanup Objective, 6 NYCRR Part 375-6.8(a).
(3) Sample/Duplicate pairs are evaluated as separate and discrete samples in this table
(4) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected; the associated reporting limit is approximate
R = the analytical result was rejected during data validation

Table B-1C
SEAD-12 Complete Confirmatory Soil Sample Analytical Results
Compared to NYSDEC Unrestricted Use Levels
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION								SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12
LOCATION ID								S12EXSW-D-2-01	S12EXSW-E-1-01	S12EXFL-I-3-01	S12EXFL-I-3-01	S12EXFL-I-3-02	S12EXFL-I-4-01
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								S12EXSW-D-2-01	S12EXSW-E-1-01	S12EXFL-I-3-02	S12EXFL-I-3-01	S12EXFL-I-3-03	S12EXFL-I-4-02
TOP OF SAMPLE								0	0	0	0	0	0
BOTTOM OF SAMPLE								0	0	0.2	0.2	0.2	0.2
SAMPLE DATE								8/5/2009	8/5/2009	7/29/2009	7/29/2009	10/5/2009	10/15/2009
QC CODE								SA	SA	DU	SA	SA	DU
STUDY ID								RA	RA	RA	RA	RA	RA
AREA								Pit C1	Pit C1	Pit C2	Pit C2	Pit C2	Pit C2
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**NYSDEC Unrestricted Use Level**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Volatile Organic Compounds													
1,1,1-Trichloroethane	UG/KG	0	0%	680	0	0	85	0.23 U	0.25 U	0.24 UJ	0.24 UJ	0.24 U	1 U
1,1,2,2-Tetrachloroethane	UG/KG	0	0%		0	0	85	0.44 U	0.46 U	0.36 UJ	0.36 UJ	0.45 U	0.52 U
1,1,2-Trichloroethane	UG/KG	0	0%		0	0	85	0.63 U	0.67 U	0.26 UJ	0.26 UJ	0.65 U	0.52 U
1,1-Dichloroethane	UG/KG	0	0%	270	0	0	85	0.5 U	0.53 U	0.18 UJ	0.18 UJ	0.52 U	1 U
1,1-Dichloroethene	UG/KG	0	0%	330	0	0	85	0.4 U	0.43 U	0.36 UJ	0.36 UJ	0.42 U	1 U
1,2-Dichloroethane	UG/KG	0	0%	20	0	0	85	0.38 U	0.41 U	0.29 UJ	0.29 UJ	0.4 U	1 U
1,2-Dichloropropane	UG/KG	0	0%		0	0	85	0.42 U	0.45 U	0.29 UJ	0.29 UJ	0.44 U	1 U
Acetone	UG/KG	9.6	13%	50	0	11	85	22 UJ	23 UJ	22 UJ	22 UJ	1.7 UJ	21 U
Benzene	UG/KG	0	0%	60	0	0	85	0.5 U	0.53 U	0.24 UJ	0.24 UJ	0.52 U	0.52 U
Bromodichloromethane	UG/KG	0	0%		0	0	85	0.55 U	0.59 U	0.24 UJ	0.24 UJ	0.57 U	1 U
Bromoform	UG/KG	0	0%		0	0	85	0.46 U	0.49 U	0.47 UJ	0.47 UJ	0.47 U	1 U
Carbon disulfide	UG/KG	2.5	2%		0	2	85	0.55 U	0.59 U	0.57 UJ	0.57 UJ	0.85 J	0.52 U
Carbon tetrachloride	UG/KG	0	0%	760	0	0	85	0.49 U	0.52 U	0.5 UJ	0.5 UJ	0.51 U	1 U
Chlorobenzene	UG/KG	0	0%	1100	0	0	85	0.52 U	0.55 U	0.25 UJ	0.25 UJ	0.54 U	1 U
Chlorodibromomethane	UG/KG	0	0%		0	0	85	0.36 U	0.38 U	0.37 UJ	0.37 UJ	0.37 U	0.52 U
Chloroethane	UG/KG	0	0%		0	0	85	0.52 U	0.55 U	0.48 UJ	0.48 UJ	0.54 U	1.6 U
Chloroform	UG/KG	0	0%	370	0	0	85	0.47 U	0.5 U	0.36 UJ	0.36 UJ	0.48 U	0.52 U
Cis-1,2-Dichloroethene	UG/KG	0.45	1%	250	0	1	85	0.34 U	0.36 U	0.25 UJ	0.25 UJ	0.45 J	0.52 U
Cis-1,3-Dichloropropene	UG/KG	0	0%		0	0	85	0.37 U	0.39 U	0.34 UJ	0.34 UJ	0.38 U	0.52 U
Ethyl benzene	UG/KG	2.7	1%	1000	0	1	85	0.95 U	1.1 U	0.98 UJ	0.98 UJ	0.99 U	0.52 U
Meta/Para Xylene	UG/KG	1.3	4%	260	0	3	85	1.1 U	1.1 U	0.71 UJ	0.7 UJ	1.1 U	1 U
Methyl bromide	UG/KG	0	0%		0	0	85	0.84 UJ	0.9 UJ	0.5 UJ	0.5 UJ	0.87 U	1.6 U
Methyl butyl ketone	UG/KG	0	0%		0	0	85	0.77 U	0.82 U	0.78 UJ	0.78 UJ	0.8 U	2.1 U
Methyl chloride	UG/KG	0	0%		0	0	85	0.62 U	0.66 U	0.34 UJ	0.34 UJ	0.64 U	0.52 U
Methyl ethyl ketone	UG/KG	1.6	5%	120	0	4	85	0.82 U	0.87 U	0.85 UJ	0.85 UJ	0.85 U	21 U
Methyl isobutyl ketone	UG/KG	0	0%		0	0	85	0.7 U	0.75 U	0.73 UJ	0.72 UJ	0.73 UJ	2.1 U
Methylene chloride	UG/KG	2.8	24%	50	0	20	85	0.55 J	0.57 J	0.43 UJ	0.43 UJ	0.43 U	0.52 UJ
Ortho Xylene	UG/KG	0	0%	260	0	0	85	0.68 U	0.73 U	0.71 UJ	0.7 UJ	0.71 U	0.52 U
Styrene	UG/KG	0.61	4%		0	3	85	0.49 U	0.52 U	0.32 UJ	0.32 UJ	0.51 U	0.52 U
Tetrachloroethene	UG/KG	0	0%	1300	0	0	85	0.53 U	0.57 U	0.55 UJ	0.55 UJ	0.55 U	1 U
Toluene	UG/KG	3.3	48%	700	0	41	85	0.35 U	0.37 U	0.36 UJ	0.44 J	0.36 U	0.52 U
Total Xylenes	UG/KG	0	0%	260	0	0	8						1.6 U
Trans-1,2-Dichloroethene	UG/KG	0	0%	190	0	0	85	0.56 U	0.6 U	0.35 UJ	0.35 UJ	0.58 U	0.52 U
Trans-1,3-Dichloropropene	UG/KG	0	0%		0	0	85	0.4 U	0.43 U	0.4 UJ	0.4 UJ	0.42 U	0.52 UJ
Trichloroethene	UG/KG	1.2	16%	470	0	14	85	0.44 U	0.46 U	0.45 UJ	0.45 UJ	0.45 U	1 U
Vinyl chloride	UG/KG	0	0%	20	0	0	85	0.51 U	0.54 U	0.26 UJ	0.26 UJ	0.53 U	1 U
Semivolatile Organic Compounds													
1,2,4-Trichlorobenzene	UG/KG	0	0%		0	0	85	35 U	37 U	36 UJ	36 UJ	36 U	15 U
1,2-Dichlorobenzene	UG/KG	0	0%	1100	0	0	85	32 U	34 U	33 UJ	33 UJ	33 U	15 U
1,3-Dichlorobenzene	UG/KG	0	0%	2400	0	0	85	35 U	37 U	36 UJ	36 UJ	36 U	15 U
1,4-Dichlorobenzene	UG/KG	0	0%	1800	0	0	85	32 U	34 U	33 UJ	33 UJ	33 U	15 U
2,4,5-Trichlorophenol	UG/KG	0	0%		0	0	85	49 U	52 U	50 UJ	50 UJ	51 U	45 U
2,4,6-Trichlorophenol	UG/KG	0	0%		0	0	85	53 U	57 U	55 UJ	55 UJ	55 U	45 U
2,4-Dichlorophenol	UG/KG	0	0%		0	0	85	42 U	45 U	44 UJ	44 UJ	44 U	15 U
2,4-Dimethylphenol	UG/KG	0	0%		0	0	85	39 U	42 U	40 UJ	40 UJ	41 U	45 U
2,4-Dinitrophenol	UG/KG	0	0%		0	0	85	1100 UJ	1200 UJ	1100 UJ	1100 UJ	1100 U	740 U
2,4-Dinitrotoluene	UG/KG	0	0%		0	0	85	58 U	61 U	59 UJ	59 UJ	60 U	15 U
2,6-Dinitrotoluene	UG/KG	0	0%		0	0	85	44 U	46 U	45 UJ	45 UJ	45 U	15 U

Table B-1C
SEAD-12 Complete Confirmatory Soil Sample Analytical Results
Compared to NYSDEC Unrestricted Use Levels
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION								SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12
LOCATION ID								S12EXSW-D-2-01	S12EXSW-E-1-01	S12EXFL-I-3-01	S12EXFL-I-3-01	S12EXFL-I-3-02	S12EXFL-I-4-01
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								S12EXSW-D-2-01	S12EXSW-E-1-01	S12EXFL-I-3-02	S12EXFL-I-3-01	S12EXFL-I-3-03	S12EXFL-I-4-02
TOP OF SAMPLE								0	0	0	0	0	0
BOTTOM OF SAMPLE								0	0	0.2	0.2	0.2	0.2
SAMPLE DATE								8/5/2009	8/5/2009	7/29/2009	7/29/2009	10/5/2009	10/15/2009
QC CODE								SA	SA	DU	SA	SA	DU
STUDY ID								RA	RA	RA	RA	RA	RA
AREA								Pit C1	Pit C1	Pit C2	Pit C2	Pit C2	Pit C2
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**NYSDEC Unrestricted Use Level**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
2-Chloronaphthalene	UG/KG	0	0%		0	0	85	39 U	42 U	40 UJ	40 UJ	41 U	15 U
2-Chlorophenol	UG/KG	0	0%		0	0	85	41 U	44 U	43 UJ	43 UJ	43 U	15 U
2-Methylnaphthalene	UG/KG	0	0%		0	0	85	35 U	37 U	36 UJ	36 UJ	36 U	15 U
2-Methylphenol	UG/KG	0	0%	330	0	0	85	31 U	33 U	32 UJ	32 UJ	32 U	15 U
2-Nitroaniline	UG/KG	0	0%		0	0	85	1300 U	1400 U	1300 UJ	1300 UJ	1300 U	15 U
2-Nitrophenol	UG/KG	0	0%		0	0	85	30 U	31 U	30 UJ	30 UJ	31 U	15 U
3,3'-Dichlorobenzidine	UG/KG	0	0%		0	0	85	41 U	44 U	43 UJ	43 UJ	43 U	45 U
3-Nitroaniline	UG/KG	0	0%		0	0	85	870 U	920 U	890 UJ	890 UJ	900 U	45 U
4,6-Dinitro-2-methylphenol	UG/KG	0	0%		0	0	85	1600 U	1700 U	1700 UJ	1700 UJ	1700 U	190 U
4-Bromophenyl phenyl ether	UG/KG	0	0%		0	0	85	44 U	46 U	45 UJ	45 UJ	45 U	15 U
4-Chloro-3-methylphenol	UG/KG	0	0%		0	0	85	41 U	44 U	43 UJ	43 UJ	43 U	15 U
4-Chloroaniline	UG/KG	0	0%		0	0	85	40 U	43 U	42 UJ	41 UJ	42 U	15 U
4-Chlorophenyl phenyl ether	UG/KG	0	0%		0	0	85	42 U	45 U	44 UJ	44 UJ	44 U	15 U
4-Methylphenol	UG/KG	0	0%	330	0	0	8						45 U
4-Nitroaniline	UG/KG	0	0%		0	0	85	1300 U	1400 U	1400 UJ	1400 UJ	1400 U	15 U
4-Nitrophenol	UG/KG	0	0%		0	0	85	1200 U	1200 U	1200 UJ	1200 UJ	1200 U	190 U
Acenaphthene	UG/KG	0	0%	20000	0	0	85	42 U	45 U	44 UJ	44 UJ	44 U	15 U
Acenaphthylene	UG/KG	0	0%	100000	0	0	85	39 U	42 U	40 UJ	40 UJ	41 U	15 U
Anthracene	UG/KG	0	0%	100000	0	0	85	40 U	43 U	42 UJ	41 UJ	42 U	15 U
Benzo(a)anthracene	UG/KG	0	0%	1000	0	0	85	42 U	45 U	44 UJ	44 UJ	44 U	15 U
Benzo(a)pyrene	UG/KG	0	0%	1000	0	0	85	36 U	38 U	37 UJ	37 UJ	37 U	15 U
Benzo(b)fluoranthene	UG/KG	0	0%	1000	0	0	85	51 U	54 U	53 UJ	53 UJ	53 U	15 U
Benzo(ghi)perylene	UG/KG	0	0%	100000	0	0	85	96 U	110 U	99 UJ	99 UJ	100 U	45 U
Benzo(k)fluoranthene	UG/KG	0	0%	800	0	0	85	52 U	55 U	54 UJ	54 UJ	54 U	15 U
Benzyl alcohol	UG/KG	140	38%		0	32	85	38 J	46 J	56 J	55 J	26 U	15 U
Bis(2-Chloroethoxy)methane	UG/KG	0	0%		0	0	85	53 U	57 U	55 UJ	55 UJ	55 U	15 U
Bis(2-Chloroethyl)ether	UG/KG	0	0%		0	0	85	41 U	44 U	43 UJ	43 UJ	43 U	15 U
Bis(2-Chloroisopropyl)ether	UG/KG	0	0%		0	0	85	50 U	53 U	52 UJ	51 UJ	52 U	15 U
Bis(2-Ethylhexyl)phthalate	UG/KG	120	11%		0	9	85	74 J	83 J	62 UJ	76 J	62 U	42 J
Butylbenzylphthalate	UG/KG	0	0%		0	0	85	44 U	46 U	45 UJ	45 UJ	45 U	15 U
Carbazole	UG/KG	0	0%		0	0	85	59 U	62 U	60 UJ	60 UJ	61 U	15 U
Chrysene	UG/KG	0	0%	1000	0	0	85	44 U	46 U	45 UJ	45 UJ	45 U	15 U
Di-n-butylphthalate	UG/KG	0	0%		0	0	85	150 U	160 U	150 UJ	150 UJ	160 U	15 U
Di-n-octylphthalate	UG/KG	0	0%		0	0	85	36 U	38 U	37 UJ	37 UJ	37 U	15 U
Dibenz(a,h)anthracene	UG/KG	0	0%	330	0	0	85	41 U	44 U	43 UJ	43 UJ	43 U	45 U
Dibenzofuran	UG/KG	0	0%	7000	0	0	85	39 U	42 U	40 UJ	40 UJ	41 U	15 U
Diethyl phthalate	UG/KG	0	0%		0	0	85	42 U	45 U	44 UJ	44 UJ	44 U	15 U
Dimethylphthalate	UG/KG	86	7%		0	6	85	42 U	45 U	44 UJ	44 UJ	44 U	60 J
Fluoranthene	UG/KG	74	2%	100000	0	2	85	42 U	74 J	44 UJ	44 UJ	44 U	15 U
Fluorene	UG/KG	0	0%	30000	0	0	85	35 U	37 U	36 UJ	36 UJ	36 U	15 U
Hexachlorobenzene	UG/KG	0	0%	330	0	0	85	40 U	43 U	42 UJ	41 UJ	42 U	15 U
Hexachlorobutadiene	UG/KG	0	0%		0	0	85	41 U	44 U	43 UJ	43 UJ	43 U	45 U
Hexachlorocyclopentadiene	UG/KG	0	0%		0	0	85	38 U	41 U	39 UJ	39 UJ	40 U	370 U
Hexachloroethane	UG/KG	0	0%		0	0	85	34 U	36 U	35 UJ	35 UJ	35 U	45 U
Indeno(1,2,3-cd)pyrene	UG/KG	0	0%	500	0	0	85	39 U	42 U	40 UJ	40 UJ	41 U	45 U
Isophorone	UG/KG	0	0%		0	0	85	42 U	45 U	44 UJ	44 UJ	44 U	15 U
N-Nitrosodimethylamine	UG/KG	0	0%		0	0	85	61 U	65 U	63 UJ	63 UJ	63 U	45 U
N-Nitrosodiphenylamine	UG/KG	0	0%		0	0	85	47 U	50 U	48 UJ	48 UJ	48 U	15 U
N-Nitrosodipropylamine	UG/KG	0	0%		0	0	85	47 U	50 U	48 UJ	48 UJ	48 U	15 U

Table B-1C
SEAD-12 Complete Confirmatory Soil Sample Analytical Results
Compared to NYSDEC Unrestricted Use Levels
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION							SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12
LOCATION ID							S12EXSW-D-2-01	S12EXSW-E-1-01	S12EXFL-I-3-01	S12EXFL-I-3-01	S12EXFL-I-3-02	S12EXFL-I-4-01
MATRIX							SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID							S12EXSW-D-2-01	S12EXSW-E-1-01	S12EXFL-I-3-02	S12EXFL-I-3-01	S12EXFL-I-3-03	S12EXFL-I-4-02
TOP OF SAMPLE							0	0	0	0	0	0
BOTTOM OF SAMPLE							0	0	0.2	0.2	0.2	0.2
SAMPLE DATE							8/5/2009	8/5/2009	7/29/2009	7/29/2009	10/5/2009	10/15/2009
QC CODE							SA	SA	DU	SA	SA	DU
STUDY ID							RA	RA	RA	RA	RA	RA
AREA							Pit C1	Pit C1	Pit C2	Pit C2	Pit C2	Pit C2
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**NYSDEC Unrestricted Use Level**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Naphthalene	UG/KG	0	0%	12000	0	0	85	32 U	34 U	33 UJ	33 UJ	33 U	15 U
Nitrobenzene	UG/KG	0	0%		0	0	85	46 U	49 U	47 UJ	47 UJ	47 U	15 U
Pentachlorophenol	UG/KG	0	0%	800	0	0	85	1200 U	1300 U	1300 UJ	1300 UJ	1300 U	370 U
Phenanthrene	UG/KG	52	2%	100000	0	2	85	44 U	52 J	45 UJ	45 UJ	45 U	15 U
Phenol	UG/KG	0	0%	330	0	0	85	41 U	44 U	43 UJ	43 UJ	43 U	15 U
Pyrene	UG/KG	64	2%	100000	0	2	85	38 U	64 J	39 UJ	39 UJ	40 U	15 U
PCBs													
Aroclor-1016	UG/KG	0	0%	100	0	0	87	19 U	20 U	19 UJ	19 UJ	190 U	2.44 U
Aroclor-1221	UG/KG	0	0%	100	0	0	87	41 U	44 U	43 UJ	43 UJ	430 U	2.47 U
Aroclor-1232	UG/KG	0	0%	100	0	0	87	19 U	20 U	19 UJ	19 UJ	190 U	1.51 U
Aroclor-1242	UG/KG	0	0%	100	0	0	87	28 U	30 U	29 UJ	29 UJ	290 U	2.04 U
Aroclor-1248	UG/KG	0	0%	100	0	0	87	19 U	20 U	19 UJ	19 UJ	190 U	3.98 U
Aroclor-1254	UG/KG	78	5%	100	0	4	87	19 U	20 U	19 UJ	19 UJ	190 U	5.28 U
Aroclor-1260	UG/KG	0	0%	100	0	0	87	33 U	35 U	34 UJ	34 UJ	340 U	2.23 U
Aroclor-1268	UG/KG	0	0%	100	0	0	87	19 U	20 U	19 UJ	19 UJ	190 U	3.28 U
Pesticides													
4,4'-DDD	UG/KG	6.9	1%	3.3	1	1	85	1.8 U	**6.9**	1.9 UJ	1.9 UJ	19 U	0.39 U
4,4'-DDE	UG/KG	5.9	4%	3.3	2	3	85	1.8 U	**5.9**	1.9 UJ	1.9 UJ	19 U	0.41 U
4,4'-DDT	UG/KG	9.8	4%	3.3	2	3	85	1.8 U	**3.8** J	1.9 UJ	1.9 UJ	19 U	0.48 U
Aldrin	UG/KG	0	0%	5	0	0	85	0.91 U	0.97 U	0.94 UJ	0.94 UJ	9.4 U	0.45 U
Alpha-BHC	UG/KG	210	6%	20	2	5	85	0.91 U	0.97 U	0.94 UJ	0.94 UJ	9.4 U	0.37 U
Alpha-Chlordane	UG/KG	0	0%	94	0	0	85	0.91 U	0.97 U	0.94 UJ	0.94 UJ	9.4 U	0.39 U
Beta-BHC	UG/KG	63	1%	36	1	1	85	0.91 U	0.97 U	0.94 UJ	0.94 UJ	9.4 U	0.94 U
Chlordane (Alpha And Gamma Isomers)	UG/KG	0	0%	94	0	0	8						0.47 U
Delta-BHC	UG/KG	61	4%	40	1	3	85	0.91 U	0.97 U	0.94 UJ	0.94 UJ	9.4 U	0.51 U
Dieldrin	UG/KG	0	0%	5	0	0	85	1.8 U	2 U	1.9 UJ	1.9 UJ	19 U	0.47 U
Endosulfan I	UG/KG	0	0%	2400	0	0	85	0.91 U	0.97 U	0.94 UJ	0.94 UJ	9.4 U	0.35 U
Endosulfan II	UG/KG	0	0%	2400	0	0	85	1.8 U	2 U	1.9 UJ	1.9 UJ	19 U	0.41 U
Endosulfan sulfate	UG/KG	0	0%	2400	0	0	85	1.8 U	2 U	1.9 UJ	1.9 UJ	19 U	0.69 U
Endrin	UG/KG	0	0%	14	0	0	85	1.8 U	2 U	1.9 UJ	1.9 UJ	19 U	0.72 U
Endrin aldehyde	UG/KG	0	0%		0	0	85	1.8 U	2 U	1.9 UJ	1.9 UJ	19 U	0.52 U
Endrin ketone	UG/KG	0	0%		0	0	85	1.8 U	2 U	1.9 UJ	1.9 UJ	19 U	1.1 U
Gamma-BHC/Lindane	UG/KG	0	0%	100	0	0	85	0.91 U	0.97 U	0.94 UJ	0.94 UJ	9.4 U	0.41 U
Gamma-Chlordane	UG/KG	0	0%		0	0	77	0.91 U	0.97 U	0.94 UJ	0.94 UJ	9.4 U	
Heptachlor	UG/KG	0	0%	42	0	0	85	0.91 U	0.97 U	0.94 UJ	0.94 UJ	9.4 U	0.57 U
Heptachlor epoxide	UG/KG	0	0%		0	0	85	0.91 U	0.97 U	0.94 UJ	0.94 UJ	9.4 U	0.5 U
Methoxychlor	UG/KG	0	0%		0	0	85	9 U	9.6 U	9.3 UJ	9.3 UJ	93 U	0.49 U
Toxaphene	UG/KG	0	0%		0	0	85	18 U	20 U	19 UJ	19 UJ	190 U	7.5 U
Metals													
Aluminum	MG/KG	35100	100%		0	85	85	9210	13800	9900 J	9770 J	9110	6000 J
Antimony	MG/KG	0	0%		0	0	85	0.5 UJ	0.5 UJ	0.4 UJ	0.4 UJ	0.446 U	0.33 UJ
Arsenic	MG/KG	12.2	100%	13	0	85	85	3	5.1	3.5 J	3.6 J	4.9	4.8 J
Barium	MG/KG	304	100%	350	0	85	85	89.4	90.5	87.5 J	86.6 J	89	49 J
Beryllium	MG/KG	1.7	96%	7.2	0	82	85	0.49 J	0.73	0.52 J	0.53 J	0.553 J	0.36 J
Cadmium	MG/KG	2.5	34%	2.5	0	29	85	0.52 U	0.57 U	0.16 J	0.15 J	0.557 UJ	0.11 UJ
Calcium	MG/KG	186000	100%		0	85	85	69800	18900	80400 J	80000 J	104000	110000 J
Chromium	MG/KG	51.2	100%	30	2	85	85	14.5	22.6	14.9 J	15.8 J	15.6	13 J
Cobalt	MG/KG	29	100%		0	85	85	7.9	11.9	8.3 J	9.1 J	9.2	6.7 J
Copper	MG/KG	61.4	100%	50	1	85	85	19.8	22.2	19.9 J	22.1 J	30.5	19 J

Table B-1C
SEAD-12 Complete Confirmatory Soil Sample Analytical Results
Compared to NYSDEC Unrestricted Use Levels
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION								SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12
LOCATION ID								S12EXSW-D-2-01	S12EXSW-E-1-01	S12EXFL-I-3-01	S12EXFL-I-3-01	S12EXFL-I-3-02	S12EXFL-I-4-01
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								S12EXSW-D-2-01	S12EXSW-E-1-01	S12EXFL-I-3-02	S12EXFL-I-3-01	S12EXFL-I-3-03	S12EXFL-I-4-02
TOP OF SAMPLE								0	0	0	0	0	0
BOTTOM OF SAMPLE								0	0	0.2	0.2	0.2	0.2
SAMPLE DATE								8/5/2009	8/5/2009	7/29/2009	7/29/2009	10/5/2009	10/15/2009
QC CODE								SA	SA	DU	SA	SA	DU
STUDY ID								RA	RA	RA	RA	RA	RA
AREA								Pit C1	Pit C1	Pit C2	Pit C2	Pit C2	Pit C2
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**NYSDEC Unrestricted Use Level**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Cyanide	MG/KG	0	0%	27	0	0	85	0.42 U	0.5 U	0.42 UJ	0.5 UJ	0.5 U	0.2 UJ
Iron	MG/KG	56400	100%		0	85	85	17200	23100	19400 J	21200 J	18500	15000 J
Lead	MG/KG	33.3	100%	63	0	85	85	7.9	25.3	8.8 J	9.3 J	9.3	13 J
Magnesium	MG/KG	74400	100%		0	85	85	14200	7400	22100 J	16300 J	15100	41000 J
Manganese	MG/KG	1650	100%	1600	2	85	85	387	388	459 J	456 J	410	380 J
Mercury	MG/KG	0.05	95%	0.18	0	81	85	0.021 J	0.045 J	0.02 J	0.01 J	0.032 UJ	0.0099 J
Nickel	MG/KG	75	100%	30	32	85	85	24.6 J	**30.6** J	23.5 J	25.9 J	25.2	22 J
Potassium	MG/KG	5330	100%		0	85	85	1640 J	1640 J	1830 J	1720 J	1840	1100 J
Selenium	MG/KG	2	18%	3.9	0	15	85	1 U	1.2	0.173 UJ	0.173 UJ	0.193 U	0.28 UJ
Silver	MG/KG	0	0%	2	0	0	85	0.3 U	0.3 U	0.0257 UJ	0.0257 UJ	0.029 U	0.22 UJ
Sodium	MG/KG	390	100%		0	85	85	130	60 J	143 J	145 J	153	140 J
Thallium	MG/KG	0	0%		0	0	85	0.2 U	0.5 U	0.176 UJ	0.176 UJ	0.196 U	0.56 UJ
Vanadium	MG/KG	68	100%		0	85	85	16.7	24.7	17.6 J	17.3 J	18	13 J
Zinc	MG/KG	154	100%	109	2	85	85	53 J	86.2 J	48 J	51.8 J	46.4	55 J
TCLP													
TCLP 1,1-Dichloroethene	UG/L	0	0%		0	0	3						
TCLP 1,2-Dichloroethane	UG/L	0	0%		0	0	3						
TCLP Benzene	UG/L	0	0%		0	0	3						
TCLP Carbon tetrachloride	UG/L	0	0%		0	0	3						
TCLP Chlorobenzene	UG/L	0	0%		0	0	3						
TCLP Chloroform	UG/L	0	0%		0	0	3						
TCLP Methyl ethyl ketone	UG/L	0	0%		0	0	3						
TCLP Tetrachloroethene	UG/L	0	0%		0	0	3						
TCLP Trichloroethene	UG/L	0	0%		0	0	3						
TCLP Vinyl chloride	UG/L	0	0%		0	0	3						

Notes:
(1) The dataset of samples consists of the Inplace samples representing current site conditions
The overburden C1 samples were not included in this dataset.
(2) NYSDEC's Unrestricted Use Soil Cleanup Objective, 6 NYCRR Part 375-6.8(a).
(3) Sample/Duplicate pairs are evaluated as separate and discrete samples in this table
(4) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected; the associated reporting limit is approximate
R = the analytical result was rejected during data validation

Table B-1C
SEAD-12 Complete Confirmatory Soil Sample Analytical Results
Compared to NYSDEC Unrestricted Use Levels
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION								SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12
LOCATION ID								S12EXFL-I-4-01	S12EXFL-J-2-02	S12EXFL-J-4-01	S12EXFL-K-3-01	S12EXPR-I-2-01	S12EXPR-I-2-02
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								S12EXFL-I-4-01	S12EXFL-J-2-02	S12EXFL-J-4-01	S12EXFL-K-3-01	S12EXPR-I-2-01	S12EXPR-I-2-02
TOP OF SAMPLE								0	0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								10/15/2009	10/7/2009	7/29/2009	7/29/2009	7/29/2009	10/7/2009
QC CODE								SA	SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA
AREA								Pit C2	Pit C2	Pit C2	Pit C2	Pit C2	Pit C2
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**NYSDEC Unrestricted Use Level**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Volatile Organic Compounds													
1,1,1-Trichloroethane	UG/KG	0	0%	680	0	0	85	1.1 U	0.26 U	0.24 UJ	0.25 UJ	0.22 UJ	0.26 U
1,1,2,2-Tetrachloroethane	UG/KG	0	0%		0	0	85	0.57 U	0.49 U	0.44 UJ	0.38 UJ	0.34 UJ	0.49 U
1,1,2-Trichloroethane	UG/KG	0	0%		0	0	85	0.57 U	0.71 U	0.64 UJ	0.27 UJ	0.24 UJ	0.7 U
1,1-Dichloroethane	UG/KG	0	0%	270	0	0	85	1.1 U	0.56 U	0.51 UJ	0.19 UJ	0.17 UJ	0.56 U
1,1-Dichloroethene	UG/KG	0	0%	330	0	0	85	1.1 U	0.45 U	0.41 UJ	0.38 UJ	0.34 UJ	0.45 U
1,2-Dichloroethane	UG/KG	0	0%	20	0	0	85	1.1 U	0.43 U	0.39 UJ	0.31 UJ	0.28 UJ	0.43 U
1,2-Dichloropropane	UG/KG	0	0%		0	0	85	1.1 U	0.48 U	0.43 UJ	0.31 UJ	0.28 UJ	0.48 U
Acetone	UG/KG	9.6	13%	50	0	11	85	23 U	1.9 UJ	22 UJ	23 UJ	21 UJ	1.9 UJ
Benzene	UG/KG	0	0%	60	0	0	85	0.57 U	0.56 U	0.51 UJ	0.25 UJ	0.22 UJ	0.56 U
Bromodichloromethane	UG/KG	0	0%		0	0	85	1.1 U	0.62 U	0.56 UJ	0.25 UJ	0.22 UJ	0.62 U
Bromoform	UG/KG	0	0%		0	0	85	1.1 U	0.51 U	0.47 UJ	0.5 UJ	0.44 UJ	0.51 U
Carbon disulfide	UG/KG	2.5	2%		0	2	85	0.57 U	0.62 U	0.56 UJ	0.6 UJ	0.54 UJ	0.62 U
Carbon tetrachloride	UG/KG	0	0%	760	0	0	85	1.1 U	0.55 U	0.5 UJ	0.53 UJ	0.47 UJ	0.55 U
Chlorobenzene	UG/KG	0	0%	1100	0	0	85	1.1 U	0.59 U	0.53 UJ	0.26 UJ	0.23 UJ	0.58 U
Chlorodibromomethane	UG/KG	0	0%		0	0	85	0.57 U	0.41 U	0.37 UJ	0.39 UJ	0.35 UJ	0.4 U
Chloroethane	UG/KG	0	0%		0	0	85	1.7 U	0.59 U	0.53 UJ	0.51 UJ	0.45 UJ	0.58 U
Chloroform	UG/KG	0	0%	370	0	0	85	0.57 U	0.53 U	0.48 UJ	0.38 UJ	0.34 UJ	0.52 U
Cis-1,2-Dichloroethene	UG/KG	0.45	1%	250	0	1	85	0.57 U	0.38 U	0.35 UJ	0.26 UJ	0.23 UJ	0.38 U
Cis-1,3-Dichloropropene	UG/KG	0	0%		0	0	85	0.57 U	0.42 U	0.38 UJ	0.36 UJ	0.32 UJ	0.42 U
Ethyl benzene	UG/KG	2.7	1%	1000	0	1	85	0.57 U	1.1 U	0.97 UJ	1.1 UJ	0.92 UJ	1.1 U
Meta/Para Xylene	UG/KG	1.3	4%	260	0	3	85	1.1 U	1.2 U	1.1 UJ	0.74 UJ	0.66 UJ	1.2 U
Methyl bromide	UG/KG	0	0%		0	0	85	1.7 U	0.95 UJ	0.86 UJ	0.53 UJ	0.47 UJ	0.95 UJ
Methyl butyl ketone	UG/KG	0	0%		0	0	85	2.3 U	0.87 U	0.78 UJ	0.83 UJ	0.73 UJ	0.86 U
Methyl chloride	UG/KG	0	0%		0	0	85	0.57 U	0.7 U	0.63 UJ	0.36 UJ	0.32 UJ	0.69 U
Methyl ethyl ketone	UG/KG	1.6	5%	120	0	4	85	23 U	0.93 U	0.84 UJ	0.9 UJ	0.8 UJ	0.92 U
Methyl isobutyl ketone	UG/KG	0	0%		0	0	85	2.3 U	0.79 U	0.72 UJ	0.77 UJ	0.68 UJ	0.79 U
Methylene chloride	UG/KG	2.8	24%	50	0	20	85	0.64 J	0.47 U	0.42 UJ	0.45 UJ	0.4 UJ	0.46 U
Ortho Xylene	UG/KG	0	0%	260	0	0	85	0.57 U	0.77 U	0.7 UJ	0.74 UJ	0.66 UJ	0.76 U
Styrene	UG/KG	0.61	4%		0	3	85	0.57 U	0.55 U	0.5 UJ	0.33 UJ	0.3 UJ	0.55 U
Tetrachloroethene	UG/KG	0	0%	1300	0	0	85	1.1 U	0.6 U	0.54 UJ	0.58 UJ	0.52 UJ	0.6 U
Toluene	UG/KG	3.3	48%	700	0	41	85	0.57 U	0.39 U	0.4 J	0.38 UJ	0.8 J	0.39 U
Total Xylenes	UG/KG	0	0%	260	0	0	8	1.7 U					
Trans-1,2-Dichloroethene	UG/KG	0	0%	190	0	0	85	0.57 U	0.64 U	0.58 UJ	0.37 UJ	0.33 UJ	0.63 U
Trans-1,3-Dichloropropene	UG/KG	0	0%		0	0	85	0.57 UJ	0.45 U	0.41 UJ	0.43 UJ	0.38 UJ	0.45 U
Trichloroethene	UG/KG	1.2	16%	470	0	14	85	1.1 U	0.49 U	0.44 UJ	0.47 UJ	0.42 UJ	0.49 U
Vinyl chloride	UG/KG	0	0%	20	0	0	85	1.1 U	0.58 U	0.52 UJ	0.27 UJ	0.24 UJ	0.57 U
Semivolatile Organic Compounds													
1,2,4-Trichlorobenzene	UG/KG	0	0%		0	0	85	15 U	39 U	36 UJ	38 UJ	34 UJ	39 U
1,2-Dichlorobenzene	UG/KG	0	0%	1100	0	0	85	15 U	36 U	32 UJ	34 UJ	31 UJ	35 U
1,3-Dichlorobenzene	UG/KG	0	0%	2400	0	0	85	15 U	39 U	36 UJ	38 UJ	34 UJ	39 U
1,4-Dichlorobenzene	UG/KG	0	0%	1800	0	0	85	15 U	36 U	32 UJ	34 UJ	31 UJ	35 U
2,4,5-Trichlorophenol	UG/KG	0	0%		0	0	85	45 U	55 U	50 UJ	53 UJ	47 UJ	55 U
2,4,6-Trichlorophenol	UG/KG	0	0%		0	0	85	45 U	60 U	54 UJ	58 UJ	52 UJ	60 U
2,4-Dichlorophenol	UG/KG	0	0%		0	0	85	15 U	48 U	43 UJ	46 UJ	41 UJ	48 U
2,4-Dimethylphenol	UG/KG	0	0%		0	0	85	45 U	44 U	40 UJ	43 UJ	38 UJ	44 U
2,4-Dinitrophenol	UG/KG	0	0%		0	0	85	750 U	1200 U	1100 UJ	1200 UJ	1100 UJ	1200 U
2,4-Dinitrotoluene	UG/KG	0	0%		0	0	85	15 U	65 U	59 UJ	63 UJ	56 UJ	64 U
2,6-Dinitrotoluene	UG/KG	0	0%		0	0	85	15 U	49 U	44 UJ	47 UJ	42 UJ	49 U

Table B-1C
SEAD-12 Complete Confirmatory Soil Sample Analytical Results
Compared to NYSDEC Unrestricted Use Levels
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION							SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12
LOCATION ID							S12EXFL-I-4-01	S12EXFL-J-2-02	S12EXFL-J-4-01	S12EXFL-K-3-01	S12EXPR-I-2-01	S12EXPR-I-2-02
MATRIX							SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID							S12EXFL-I-4-01	S12EXFL-J-2-02	S12EXFL-J-4-01	S12EXFL-K-3-01	S12EXPR-I-2-01	S12EXPR-I-2-02
TOP OF SAMPLE							0	0	0	0	0	0
BOTTOM OF SAMPLE							0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE							10/15/2009	10/7/2009	7/29/2009	7/29/2009	7/29/2009	10/7/2009
QC CODE							SA	SA	SA	SA	SA	SA
STUDY ID							RA	RA	RA	RA	RA	RA
AREA							Pit C2	Pit C2	Pit C2	Pit C2	Pit C2	Pit C2
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**NYSDEC Unrestricted Use Level**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
2-Chloronaphthalene	UG/KG	0	0%		0	0	85	15 U	44 U	40 UJ	43 UJ	38 UJ	44 U
2-Chlorophenol	UG/KG	0	0%		0	0	85	15 U	47 U	42 UJ	45 UJ	40 UJ	46 U
2-Methylnaphthalene	UG/KG	0	0%		0	0	85	15 U	39 U	36 UJ	38 UJ	34 UJ	39 U
2-Methylphenol	UG/KG	0	0%	330	0	0	85	15 U	34 U	31 UJ	33 UJ	30 UJ	34 U
2-Nitroaniline	UG/KG	0	0%		0	0	85	15 U	1400 U	1300 UJ	1400 UJ	1200 UJ	1400 U
2-Nitrophenol	UG/KG	0	0%		0	0	85	15 U	33 U	30 UJ	32 UJ	29 UJ	33 U
3,3'-Dichlorobenzidine	UG/KG	0	0%		0	0	85	45 U	47 U	42 UJ	45 UJ	40 UJ	46 U
3-Nitroaniline	UG/KG	0	0%		0	0	85	45 U	970 U	880 UJ	940 UJ	840 UJ	970 U
4,6-Dinitro-2-methylphenol	UG/KG	0	0%		0	0	85	190 U	1800 U	1600 UJ	1800 UJ	1600 UJ	1800 U
4-Bromophenyl phenyl ether	UG/KG	0	0%		0	0	85	15 U	49 U	44 UJ	47 UJ	42 UJ	49 U
4-Chloro-3-methylphenol	UG/KG	0	0%		0	0	85	15 U	47 U	42 UJ	45 UJ	40 UJ	46 U
4-Chloroaniline	UG/KG	0	0%		0	0	85	15 U	45 U	41 UJ	44 UJ	39 UJ	45 U
4-Chlorophenyl phenyl ether	UG/KG	0	0%		0	0	85	15 U	48 U	43 UJ	46 UJ	41 UJ	48 U
4-Methylphenol	UG/KG	0	0%	330	0	0	8	45 U					
4-Nitroaniline	UG/KG	0	0%		0	0	85	15 U	1500 U	1300 UJ	1400 UJ	1300 UJ	1500 U
4-Nitrophenol	UG/KG	0	0%		0	0	85	190 U	1300 U	1200 UJ	1300 UJ	1100 UJ	1300 U
Acenaphthene	UG/KG	0	0%	20000	0	0	85	15 U	48 U	43 UJ	46 UJ	41 UJ	48 U
Acenaphthylene	UG/KG	0	0%	100000	0	0	85	15 U	44 U	40 UJ	43 UJ	38 UJ	44 U
Anthracene	UG/KG	0	0%	100000	0	0	85	15 U	45 U	41 UJ	44 UJ	39 UJ	45 U
Benzo(a)anthracene	UG/KG	0	0%	1000	0	0	85	15 U	48 U	43 UJ	46 UJ	41 UJ	48 U
Benzo(a)pyrene	UG/KG	0	0%	1000	0	0	85	15 U	41 U	37 UJ	39 UJ	35 UJ	40 U
Benzo(b)fluoranthene	UG/KG	0	0%	1000	0	0	85	15 U	58 U	52 UJ	56 UJ	49 UJ	57 U
Benzo(ghi)perylene	UG/KG	0	0%	100000	0	0	85	45 U	110 U	98 UJ	110 UJ	93 UJ	110 U
Benzo(k)fluoranthene	UG/KG	0	0%	800	0	0	85	15 U	59 U	53 UJ	57 UJ	50 UJ	58 U
Benzyl alcohol	UG/KG	140	38%		0	32	85	15 U	400 U	26 UJ	27 UJ	24 UJ	400 U
Bis(2-Chloroethoxy)methane	UG/KG	0	0%		0	0	85	15 U	60 U	54 UJ	58 UJ	52 UJ	60 U
Bis(2-Chloroethyl)ether	UG/KG	0	0%		0	0	85	15 U	47 U	42 UJ	45 UJ	40 UJ	46 U
Bis(2-Chloroisopropyl)ether	UG/KG	0	0%		0	0	85	15 U	56 U	51 UJ	54 UJ	48 UJ	56 U
Bis(2-Ethylhexyl)phthalate	UG/KG	120	11%		0	9	85	15 UJ	67 U	61 UJ	65 UJ	58 UJ	67 U
Butylbenzylphthalate	UG/KG	0	0%		0	0	85	15 U	49 U	44 UJ	47 UJ	42 UJ	49 U
Carbazole	UG/KG	0	0%		0	0	85	15 U	66 U	60 UJ	64 UJ	57 UJ	66 U
Chrysene	UG/KG	0	0%	1000	0	0	85	15 U	49 U	44 UJ	47 UJ	42 UJ	49 U
Di-n-butylphthalate	UG/KG	0	0%		0	0	85	15 U	170 U	150 UJ	160 UJ	150 UJ	170 U
Di-n-octylphthalate	UG/KG	0	0%		0	0	85	15 U	41 U	37 UJ	39 UJ	35 UJ	40 U
Dibenz(a,h)anthracene	UG/KG	0	0%	330	0	0	85	45 U	47 U	42 UJ	45 UJ	40 UJ	46 U
Dibenzofuran	UG/KG	0	0%	7000	0	0	85	15 U	44 U	40 UJ	43 UJ	38 UJ	44 U
Diethyl phthalate	UG/KG	0	0%		0	0	85	15 U	48 U	43 UJ	46 UJ	41 UJ	48 U
Dimethylphthalate	UG/KG	86	7%		0	6	85	78 J	48 U	43 UJ	46 UJ	41 UJ	48 U
Fluoranthene	UG/KG	74	2%	100000	0	2	85	15 U	48 U	43 UJ	46 UJ	41 UJ	48 U
Fluorene	UG/KG	0	0%	30000	0	0	85	15 U	39 U	36 UJ	38 UJ	34 UJ	39 U
Hexachlorobenzene	UG/KG	0	0%	330	0	0	85	15 U	45 U	41 UJ	44 UJ	39 UJ	45 U
Hexachlorobutadiene	UG/KG	0	0%		0	0	85	45 U	47 U	42 UJ	45 UJ	40 UJ	46 U
Hexachlorocyclopentadiene	UG/KG	0	0%		0	0	85	370 U	43 U	39 UJ	42 UJ	37 UJ	43 U
Hexachloroethane	UG/KG	0	0%		0	0	85	45 U	38 U	35 UJ	37 UJ	33 UJ	38 U
Indeno(1,2,3-cd)pyrene	UG/KG	0	0%	500	0	0	85	45 U	44 U	40 UJ	43 UJ	38 UJ	44 U
Isophorone	UG/KG	0	0%		0	0	85	15 U	48 U	43 UJ	46 UJ	41 UJ	48 U
N-Nitrosodimethylamine	UG/KG	0	0%		0	0	85	45 U	68 U	62 UJ	66 UJ	59 UJ	68 U
N-Nitrosodiphenylamine	UG/KG	0	0%		0	0	85	15 U	53 U	48 UJ	51 UJ	45 UJ	52 U
N-Nitrosodipropylamine	UG/KG	0	0%		0	0	85	15 U	53 U	48 UJ	51 UJ	45 UJ	52 U

Table B-1C
SEAD-12 Complete Confirmatory Soil Sample Analytical Results
Compared to NYSDEC Unrestricted Use Levels
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION							SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12
LOCATION ID							S12EXFL-I-4-01	S12EXFL-J-2-02	S12EXFL-J-4-01	S12EXFL-K-3-01	S12EXPR-I-2-01	S12EXPR-I-2-02
MATRIX							SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID							S12EXFL-I-4-01	S12EXFL-J-2-02	S12EXFL-J-4-01	S12EXFL-K-3-01	S12EXPR-I-2-01	S12EXPR-I-2-02
TOP OF SAMPLE							0	0	0	0	0	0
BOTTOM OF SAMPLE							0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE							10/15/2009	10/7/2009	7/29/2009	7/29/2009	7/29/2009	10/7/2009
QC CODE							SA	SA	SA	SA	SA	SA
STUDY ID							RA	RA	RA	RA	RA	RA
AREA							Pit C2	Pit C2	Pit C2	Pit C2	Pit C2	Pit C2
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**NYSDEC Unrestricted Use Level**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Naphthalene	UG/KG	0	0%	12000	0	0	85	15 U	36 U	32 UJ	34 UJ	31 UJ	35 U
Nitrobenzene	UG/KG	0	0%		0	0	85	15 U	51 U	47 UJ	50 UJ	44 UJ	51 U
Pentachlorophenol	UG/KG	0	0%	800	0	0	85	370 U	1400 U	1300 UJ	1300 UJ	1200 UJ	1400 U
Phenanthrene	UG/KG	52	2%	100000	0	2	85	15 U	49 U	44 UJ	47 UJ	42 UJ	49 U
Phenol	UG/KG	0	0%	330	0	0	85	15 U	47 U	42 UJ	45 UJ	40 UJ	46 U
Pyrene	UG/KG	64	2%	100000	0	2	85	15 U	43 U	39 UJ	42 UJ	37 UJ	43 U
PCBs													
Aroclor-1016	UG/KG	0	0%	100	0	0	87	2.48 U	21 U	19 UJ	20 UJ	18 UJ	21 U
Aroclor-1221	UG/KG	0	0%	100	0	0	87	2.51 U	47 U	42 UJ	45 UJ	40 UJ	46 U
Aroclor-1232	UG/KG	0	0%	100	0	0	87	1.53 U	21 U	19 UJ	20 UJ	18 UJ	21 U
Aroclor-1242	UG/KG	0	0%	100	0	0	87	2.07 U	32 U	29 UJ	31 UJ	28 UJ	32 U
Aroclor-1248	UG/KG	0	0%	100	0	0	87	4.04 U	21 U	19 UJ	20 UJ	18 UJ	21 U
Aroclor-1254	UG/KG	78	5%	100	0	4	87	5.36 U	21 U	19 UJ	20 UJ	18 UJ	21 U
Aroclor-1260	UG/KG	0	0%	100	0	0	87	2.26 U	37 U	33 UJ	36 UJ	32 UJ	37 U
Aroclor-1268	UG/KG	0	0%	100	0	0	87	3.33 U	21 U	19 UJ	20 UJ	18 UJ	21 U
Pesticides													
4,4'-DDD	UG/KG	6.9	1%	3.3	1	1	85	0.4 U	2.1 U	1.9 UJ	2 UJ	1.8 UJ	2.1 U
4,4'-DDE	UG/KG	5.9	4%	3.3	2	3	85	0.42 U	2.1 U	1.9 UJ	2 UJ	1.8 UJ	2.1 U
4,4'-DDT	UG/KG	9.8	4%	3.3	2	3	85	0.49 U	2.1 U	1.9 UJ	2 UJ	1.8 UJ	2.1 U
Aldrin	UG/KG	0	0%	5	0	0	85	0.45 U	1.1 U	0.93 UJ	0.99 UJ	0.88 UJ	1.1 U
Alpha-BHC	UG/KG	210	6%	20	2	5	85	0.37 U	1.1 U	0.93 UJ	0.99 UJ	0.88 UJ	1.1 U
Alpha-Chlordane	UG/KG	0	0%	94	0	0	85	0.4 U	1.1 U	0.93 UJ	0.99 UJ	0.88 UJ	1.1 U
Beta-BHC	UG/KG	63	1%	36	1	1	85	0.95 U	1.1 U	0.93 UJ	0.99 UJ	0.88 UJ	1.1 U
Chlordane (Alpha And Gamma Isomers)	UG/KG	0	0%	94	0	0	8	0.48 U					
Delta-BHC	UG/KG	61	4%	40	1	3	85	0.52 U	1.1 U	0.93 UJ	0.99 UJ	0.88 UJ	1.1 U
Dieldrin	UG/KG	0	0%	5	0	0	85	0.48 U	2.1 U	1.9 UJ	2 UJ	1.8 UJ	2.1 U
Endosulfan I	UG/KG	0	0%	2400	0	0	85	0.35 U	1.1 U	0.93 UJ	0.99 UJ	0.88 UJ	1.1 U
Endosulfan II	UG/KG	0	0%	2400	0	0	85	0.42 U	2.1 U	1.9 UJ	2 UJ	1.8 UJ	2.1 U
Endosulfan sulfate	UG/KG	0	0%	2400	0	0	85	0.7 U	2.1 U	1.9 UJ	2 UJ	1.8 UJ	2.1 U
Endrin	UG/KG	0	0%	14	0	0	85	0.74 U	2.1 U	1.9 UJ	2 UJ	1.8 UJ	2.1 U
Endrin aldehyde	UG/KG	0	0%		0	0	85	0.53 U	2.1 U	1.9 UJ	2 UJ	1.8 UJ	2.1 U
Endrin ketone	UG/KG	0	0%		0	0	85	1.1 U	2.1 U	1.9 UJ	2 UJ	1.8 UJ	2.1 U
Gamma-BHC/Lindane	UG/KG	0	0%	100	0	0	85	0.42 U	1.1 U	0.93 UJ	0.99 UJ	0.88 UJ	1.1 U
Gamma-Chlordane	UG/KG	0	0%		0	0	77		1.1 U	0.93 UJ	0.99 UJ	0.88 UJ	1.1 U
Heptachlor	UG/KG	0	0%	42	0	0	85	0.58 U	1.1 U	0.93 UJ	0.99 UJ	0.88 UJ	1.1 U
Heptachlor epoxide	UG/KG	0	0%		0	0	85	0.51 U	1.1 U	0.93 UJ	0.99 UJ	0.88 UJ	1.1 U
Methoxychlor	UG/KG	0	0%		0	0	85	0.5 U	11 U	9.2 UJ	9.8 UJ	8.7 UJ	11 U
Toxaphene	UG/KG	0	0%		0	0	85	7.6 U	21 U	19 UJ	20 UJ	18 UJ	21 U
Metals													
Aluminum	MG/KG	35100	100%		0	85	85	8700 J	12700 J	8590 J	11000 J	9610 J	16200 J
Antimony	MG/KG	0	0%		0	0	85	0.34 UJ	0.485 UJ	0.4 UJ	0.4 UJ	0.4 UJ	0.478 UJ
Arsenic	MG/KG	12.2	100%	13	0	85	85	3.9 J	5.9 J	2.5 J	4 J	3.3 J	5.7 J
Barium	MG/KG	304	100%	350	0	85	85	69 J	105 J	82 J	73.3 J	62.1 J	134 J
Beryllium	MG/KG	1.7	96%	7.2	0	82	85	0.45 J	0.711 J	0.54 UJ	0.63 J	0.52 J	0.867 J
Cadmium	MG/KG	2.5	34%	2.5	0	29	85	0.11 UJ	0.868 J	0.28 J	0.15 J	0.52 UJ	0.597 U
Calcium	MG/KG	186000	100%		0	85	85	110000 J	64200 J	89600 J	113000 J	113000 J	9850 J
Chromium	MG/KG	51.2	100%	30	2	85	85	14 J	20.6 J	13.7 J	17.3 J	15.2 J	23.7 J
Cobalt	MG/KG	29	100%		0	85	85	7.7 J	9.5 J	7.7 J	10.7 J	8 J	16.2 J
Copper	MG/KG	61.4	100%	50	1	85	85	22 J	29.1 J	17.3 J	20.4 J	18.5 J	23.4 J

Table B-1C
SEAD-12 Complete Confirmatory Soil Sample Analytical Results
Compared to NYSDEC Unrestricted Use Levels
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION							SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12
LOCATION ID							S12EXFL-I-4-01	S12EXFL-J-2-02	S12EXFL-J-4-01	S12EXFL-K-3-01	S12EXPR-I-2-01	S12EXPR-I-2-02
MATRIX							SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID							S12EXFL-I-4-01	S12EXFL-J-2-02	S12EXFL-J-4-01	S12EXFL-K-3-01	S12EXPR-I-2-01	S12EXPR-I-2-02
TOP OF SAMPLE							0	0	0	0	0	0
BOTTOM OF SAMPLE							0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE							10/15/2009	10/7/2009	7/29/2009	7/29/2009	7/29/2009	10/7/2009
QC CODE							SA	SA	SA	SA	SA	SA
STUDY ID							RA	RA	RA	RA	RA	RA
AREA							Pit C2	Pit C2	Pit C2	Pit C2	Pit C2	Pit C2
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**NYSDEC Unrestricted Use Level**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Cyanide	MG/KG	0	0%	27	0	0	85	0.2 UJ	0.42 U	0.5 UJ	0.5 UJ	0.42 UJ	0.5 U
Iron	MG/KG	56400	100%		0	85	85	19000 J	23000 J	17500 J	21900 J	19500 J	24400 J
Lead	MG/KG	33.3	100%	63	0	85	85	8.9 J	13.7 J	7 J	9.8 J	8.6 J	18.1 J
Magnesium	MG/KG	74400	100%		0	85	85	16000 J	12700 J	16500 J	11200 J	27800 J	5690 J
Manganese	MG/KG	1650	100%	1600	2	85	85	440 J	471 J	404 J	498 J	417 J	**1630** J
Mercury	MG/KG	0.05	95%	0.18	0	81	85	0.012 J	0.031 J	0.01 J	0.02 J	0.02 J	0.031 J
Nickel	MG/KG	75	100%	30	32	85	85	26 J	**31.7** J	21.6 J	**31.5** J	24.4 J	**37.7** J
Potassium	MG/KG	5330	100%		0	85	85	1400 J	1840 J	1670 J	1720 J	1430 J	1740 J
Selenium	MG/KG	2	18%	3.9	0	15	85	0.28 UJ	0.21 UJ	0.173 UJ	0.173 UJ	0.173 UJ	0.833 J
Silver	MG/KG	0	0%	2	0	0	85	0.23 UJ	0.031 UJ	1.09 UJ	1.13 UJ	0.0257 UJ	0.031 UJ
Sodium	MG/KG	390	100%		0	85	85	130 J	124 J	159 J	158 J	156 J	47.4 J
Thallium	MG/KG	0	0%		0	0	85	0.57 UJ	0.214 UJ	0.176 UJ	0.176 UJ	0.176 UJ	1 UJ
Vanadium	MG/KG	68	100%		0	85	85	16 J	22.2 J	15.9 J	17.6 J	15.9 J	27.1 J
Zinc	MG/KG	154	100%	109	2	85	85	57 J	61 J	38.7 J	44.3 J	40.7 J	60.9 J
TCLP													
TCLP 1,1-Dichloroethene	UG/L	0	0%		0	0	3						
TCLP 1,2-Dichloroethane	UG/L	0	0%		0	0	3						
TCLP Benzene	UG/L	0	0%		0	0	3						
TCLP Carbon tetrachloride	UG/L	0	0%		0	0	3						
TCLP Chlorobenzene	UG/L	0	0%		0	0	3						
TCLP Chloroform	UG/L	0	0%		0	0	3						
TCLP Methyl ethyl ketone	UG/L	0	0%		0	0	3						
TCLP Tetrachloroethene	UG/L	0	0%		0	0	3						
TCLP Trichloroethene	UG/L	0	0%		0	0	3						
TCLP Vinyl chloride	UG/L	0	0%		0	0	3						

Notes:
(1) The dataset of samples consists of the Inplace samples representing current site conditions
The overburden C1 samples were not included in this dataset.
(2) NYSDEC's Unrestricted Use Soil Cleanup Objective, 6 NYCRR Part 375-6.8(a).
(3) Sample/Duplicate pairs are evaluated as separate and discrete samples in this table
(4) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected; the associated reporting limit is approximate
R = the analytical result was rejected during data validation

Table B-1C
SEAD-12 Complete Confirmatory Soil Sample Analytical Results
Compared to NYSDEC Unrestricted Use Levels
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION								SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12
LOCATION ID								S12EXPR-I-3-01	S12EXPR-I-3-04	S12EXPR-I-4-01	S12EXPR-J-2-01	S12EXPR-J-3-01	S12EXPR-J-3-02
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								S12EXPR-I-3-01	S12EXPR-I-3-04	S12EXPR-I-4-01	S12EXPR-J-2-01	S12EXPR-J-3-01	S12EXPR-J-3-02
TOP OF SAMPLE								0	0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								7/29/2009	10/15/2009	10/15/2009	7/29/2009	7/29/2009	8/5/2009
QC CODE								SA	SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA
AREA								Pit C2	Pit C2	Pit C2	Pit C2	Pit C2	Pit C2
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**NYSDEC Unrestricted Use Level**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Volatile Organic Compounds													
1,1,1-Trichloroethane	UG/KG	0	0%	680	0	0	85	0.22 UJ	1 U	1.1 U	0.23 UJ	0.23 UJ	0.24 U
1,1,2,2-Tetrachloroethane	UG/KG	0	0%		0	0	85	0.33 UJ	0.52 U	0.53 U	0.35 UJ	0.34 UJ	0.45 U
1,1,2-Trichloroethane	UG/KG	0	0%		0	0	85	0.24 UJ	0.52 U	0.53 U	0.25 UJ	0.25 UJ	0.65 U
1,1-Dichloroethane	UG/KG	0	0%	270	0	0	85	0.17 UJ	1 U	1.1 U	0.18 UJ	0.17 UJ	0.51 U
1,1-Dichloroethene	UG/KG	0	0%	330	0	0	85	0.33 UJ	1 U	1.1 U	0.35 UJ	0.34 UJ	0.41 U
1,2-Dichloroethane	UG/KG	0	0%	20	0	0	85	0.27 UJ	1 U	1.1 U	0.28 UJ	0.28 UJ	0.39 U
1,2-Dichloropropane	UG/KG	0	0%		0	0	85	0.27 UJ	1 U	1.1 U	0.28 UJ	0.28 UJ	0.44 U
Acetone	UG/KG	9.6	13%	50	0	11	85	20 UJ	21 U	21 U	2.6 J	2.6 J	1.7 UJ
Benzene	UG/KG	0	0%	60	0	0	85	0.22 UJ	0.52 U	0.53 U	0.23 UJ	0.23 UJ	0.51 U
Bromodichloromethane	UG/KG	0	0%		0	0	85	0.22 UJ	1 U	1.1 U	0.23 UJ	0.23 UJ	0.57 U
Bromoform	UG/KG	0	0%		0	0	85	0.43 UJ	1 U	1.1 U	0.46 UJ	0.45 UJ	0.47 U
Carbon disulfide	UG/KG	2.5	2%		0	2	85	0.53 UJ	0.52 U	0.53 U	0.55 UJ	0.55 UJ	0.57 U
Carbon tetrachloride	UG/KG	0	0%	760	0	0	85	0.47 UJ	1 U	1.1 U	0.49 UJ	0.48 UJ	0.5 U
Chlorobenzene	UG/KG	0	0%	1100	0	0	85	0.23 UJ	1 U	1.1 U	0.24 UJ	0.24 UJ	0.54 U
Chlorodibromomethane	UG/KG	0	0%		0	0	85	0.34 UJ	0.52 U	0.53 U	0.36 UJ	0.35 UJ	0.37 U
Chloroethane	UG/KG	0	0%		0	0	85	0.45 UJ	1.6 U	1.6 U	0.47 UJ	0.46 UJ	0.54 U
Chloroform	UG/KG	0	0%	370	0	0	85	0.33 UJ	0.52 U	0.53 U	0.35 UJ	0.34 UJ	0.48 U
Cis-1,2-Dichloroethene	UG/KG	0.45	1%	250	0	1	85	0.23 UJ	0.52 U	0.53 U	0.24 UJ	0.24 UJ	0.35 U
Cis-1,3-Dichloropropene	UG/KG	0	0%		0	0	85	0.31 UJ	0.52 U	0.53 U	0.33 UJ	0.32 UJ	0.38 U
Ethyl benzene	UG/KG	2.7	1%	1000	0	1	85	0.91 UJ	0.52 U	0.53 U	0.95 UJ	0.94 UJ	0.98 U
Meta/Para Xylene	UG/KG	1.3	4%	260	0	3	85	0.65 UJ	1 U	1.1 U	0.68 UJ	0.67 UJ	1.1 U
Methyl bromide	UG/KG	0	0%		0	0	85	0.47 UJ	1.6 U	1.6 U	0.49 UJ	0.48 UJ	0.87 UJ
Methyl butyl ketone	UG/KG	0	0%		0	0	85	0.72 UJ	2.1 U	2.1 U	0.76 UJ	0.75 UJ	0.79 U
Methyl chloride	UG/KG	0	0%		0	0	85	0.31 UJ	0.52 U	0.53 U	0.33 UJ	0.32 UJ	0.63 U
Methyl ethyl ketone	UG/KG	1.6	5%	120	0	4	85	0.78 UJ	21 U	21 U	0.82 UJ	0.81 UJ	0.84 U
Methyl isobutyl ketone	UG/KG	0	0%		0	0	85	0.67 UJ	2.1 U	2.1 U	0.7 UJ	0.69 UJ	0.72 U
Methylene chloride	UG/KG	2.8	24%	50	0	20	85	0.39 UJ	0.52 U	0.53 U	0.41 UJ	0.47 J	0.52 J
Ortho Xylene	UG/KG	0	0%	260	0	0	85	0.65 UJ	0.52 U	0.53 U	0.68 UJ	0.67 UJ	0.7 U
Styrene	UG/KG	0.61	4%		0	3	85	0.29 UJ	0.52 U	0.53 U	0.31 UJ	0.3 UJ	0.5 U
Tetrachloroethene	UG/KG	0	0%	1300	0	0	85	0.51 UJ	1 U	1.1 U	0.53 UJ	0.52 UJ	0.55 U
Toluene	UG/KG	3.3	48%	700	0	41	85	0.33 UJ	0.52 U	0.53 U	0.68 J	0.44 J	0.36 U
Total Xylenes	UG/KG	0	0%	260	0	0	8		1.6 U	1.6 U			
Trans-1,2-Dichloroethene	UG/KG	0	0%	190	0	0	85	0.32 UJ	0.52 U	0.53 U	0.34 UJ	0.33 UJ	0.58 U
Trans-1,3-Dichloropropene	UG/KG	0	0%		0	0	85	0.37 UJ	0.52 UJ	0.53 UJ	0.39 UJ	0.39 UJ	0.41 U
Trichloroethene	UG/KG	1.2	16%	470	0	14	85	0.41 UJ	1 U	1.1 U	0.58 J	0.43 UJ	0.45 U
Vinyl chloride	UG/KG	0	0%	20	0	0	85	0.24 UJ	1 U	1.1 U	0.25 UJ	0.25 UJ	0.52 U
Semivolatile Organic Compounds													
1,2,4-Trichlorobenzene	UG/KG	0	0%		0	0	85	33 UJ	15 U	15 U	35 UJ	34 UJ	36 U
1,2-Dichlorobenzene	UG/KG	0	0%	1100	0	0	85	30 UJ	15 U	15 U	32 UJ	31 UJ	33 U
1,3-Dichlorobenzene	UG/KG	0	0%	2400	0	0	85	33 UJ	15 U	15 U	35 UJ	34 UJ	36 U
1,4-Dichlorobenzene	UG/KG	0	0%	1800	0	0	85	30 UJ	15 U	15 U	32 UJ	31 UJ	33 U
2,4,5-Trichlorophenol	UG/KG	0	0%		0	0	85	47 UJ	44 U	45 U	49 UJ	48 UJ	50 U
2,4,6-Trichlorophenol	UG/KG	0	0%		0	0	85	51 UJ	44 U	45 U	53 UJ	52 UJ	55 U
2,4-Dichlorophenol	UG/KG	0	0%		0	0	85	40 UJ	15 U	15 U	42 UJ	42 UJ	44 U
2,4-Dimethylphenol	UG/KG	0	0%		0	0	85	37 UJ	44 U	45 U	39 UJ	39 UJ	40 U
2,4-Dinitrophenol	UG/KG	0	0%		0	0	85	990 UJ	730 U	740 U	1100 UJ	1100 UJ	1100 UJ
2,4-Dinitrotoluene	UG/KG	0	0%		0	0	85	55 UJ	15 U	15 U	57 UJ	57 UJ	59 U
2,6-Dinitrotoluene	UG/KG	0	0%		0	0	85	41 UJ	15 U	15 U	44 UJ	43 UJ	45 U

Table B-1C
SEAD-12 Complete Confirmatory Soil Sample Analytical Results
Compared to NYSDEC Unrestricted Use Levels
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION								SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12
LOCATION ID								S12EXPR-I-3-01	S12EXPR-I-3-04	S12EXPR-I-4-01	S12EXPR-J-2-01	S12EXPR-J-3-01	S12EXPR-J-3-02
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								S12EXPR-I-3-01	S12EXPR-I-3-04	S12EXPR-I-4-01	S12EXPR-J-2-01	S12EXPR-J-3-01	S12EXPR-J-3-02
TOP OF SAMPLE								0	0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								7/29/2009	10/15/2009	10/15/2009	7/29/2009	7/29/2009	8/5/2009
QC CODE								SA	SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA
AREA								Pit C2	Pit C2	Pit C2	Pit C2	Pit C2	Pit C2
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**NYSDEC Unrestricted Use Level**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
2-Chloronaphthalene	UG/KG	0	0%		0	0	85	37 UJ	15 U	15 U	39 UJ	39 UJ	40 U
2-Chlorophenol	UG/KG	0	0%		0	0	85	39 UJ	15 U	15 U	41 UJ	41 UJ	42 U
2-Methylnaphthalene	UG/KG	0	0%		0	0	85	33 UJ	15 U	15 U	35 UJ	34 UJ	36 U
2-Methylphenol	UG/KG	0	0%	330	0	0	85	29 UJ	15 U	15 U	31 UJ	30 UJ	31 U
2-Nitroaniline	UG/KG	0	0%		0	0	85	1200 UJ	15 U	15 U	1300 UJ	1300 UJ	1300 U
2-Nitrophenol	UG/KG	0	0%		0	0	85	28 UJ	15 U	15 U	30 UJ	29 UJ	30 U
3,3'-Dichlorobenzidine	UG/KG	0	0%		0	0	85	39 UJ	44 U	45 U	41 UJ	41 UJ	42 U
3-Nitroaniline	UG/KG	0	0%		0	0	85	820 UJ	44 U	45 U	860 UJ	850 UJ	890 U
4,6-Dinitro-2-methylphenol	UG/KG	0	0%		0	0	85	1500 UJ	190 U	190 U	1600 UJ	1600 UJ	1700 U
4-Bromophenyl phenyl ether	UG/KG	0	0%		0	0	85	41 UJ	15 U	15 U	44 UJ	43 UJ	45 U
4-Chloro-3-methylphenol	UG/KG	0	0%		0	0	85	39 UJ	15 U	15 U	41 UJ	41 UJ	42 U
4-Chloroaniline	UG/KG	0	0%		0	0	85	38 UJ	15 U	15 U	40 UJ	40 UJ	41 U
4-Chlorophenyl phenyl ether	UG/KG	0	0%		0	0	85	40 UJ	15 U	15 U	42 UJ	42 UJ	44 U
4-Methylphenol	UG/KG	0	0%	330	0	0	8		44 U	45 U			
4-Nitroaniline	UG/KG	0	0%		0	0	85	1300 UJ	15 U	15 U	1300 UJ	1300 UJ	1400 U
4-Nitrophenol	UG/KG	0	0%		0	0	85	1100 UJ	190 U	190 U	1200 UJ	1200 UJ	1200 U
Acenaphthene	UG/KG	0	0%	20000	0	0	85	40 UJ	15 U	15 U	42 UJ	42 UJ	44 U
Acenaphthylene	UG/KG	0	0%	100000	0	0	85	37 UJ	15 U	15 U	39 UJ	39 UJ	40 U
Anthracene	UG/KG	0	0%	100000	0	0	85	38 UJ	15 U	15 U	40 UJ	40 UJ	41 U
Benzo(a)anthracene	UG/KG	0	0%	1000	0	0	85	40 UJ	15 U	15 U	42 UJ	42 UJ	44 U
Benzo(a)pyrene	UG/KG	0	0%	1000	0	0	85	34 UJ	15 U	15 U	36 UJ	35 UJ	37 U
Benzo(b)fluoranthene	UG/KG	0	0%	1000	0	0	85	49 UJ	15 U	15 U	51 UJ	50 UJ	52 U
Benzo(ghi)perylene	UG/KG	0	0%	100000	0	0	85	92 UJ	44 U	45 U	96 UJ	95 UJ	99 U
Benzo(k)fluoranthene	UG/KG	0	0%	800	0	0	85	50 UJ	15 U	15 U	52 UJ	51 UJ	54 U
Benzyl alcohol	UG/KG	140	38%		0	32	85	47 J	15 U	15 U	68 J	38 J	140 J
Bis(2-Chloroethoxy)methane	UG/KG	0	0%		0	0	85	51 UJ	15 U	15 U	53 UJ	52 UJ	55 U
Bis(2-Chloroethyl)ether	UG/KG	0	0%		0	0	85	39 UJ	15 U	15 U	41 UJ	41 UJ	42 U
Bis(2-Chloroisopropyl)ether	UG/KG	0	0%		0	0	85	48 UJ	15 U	15 U	50 UJ	49 UJ	51 U
Bis(2-Ethylhexyl)phthalate	UG/KG	120	11%		0	9	85	57 UJ	15 U	15 U	60 UJ	59 UJ	61 U
Butylbenzylphthalate	UG/KG	0	0%		0	0	85	41 UJ	15 U	15 U	44 UJ	43 UJ	45 U
Carbazole	UG/KG	0	0%		0	0	85	56 UJ	15 U	15 U	59 UJ	58 UJ	60 U
Chrysene	UG/KG	0	0%	1000	0	0	85	41 UJ	15 U	15 U	44 UJ	43 UJ	45 U
Di-n-butylphthalate	UG/KG	0	0%		0	0	85	140 UJ	15 U	15 U	150 UJ	150 UJ	150 U
Di-n-octylphthalate	UG/KG	0	0%		0	0	85	34 UJ	15 U	15 U	36 UJ	35 UJ	37 U
Dibenz(a,h)anthracene	UG/KG	0	0%	330	0	0	85	39 UJ	44 U	45 U	41 UJ	41 UJ	42 U
Dibenzofuran	UG/KG	0	0%	7000	0	0	85	37 UJ	15 U	15 U	39 UJ	39 UJ	40 U
Diethyl phthalate	UG/KG	0	0%		0	0	85	40 UJ	15 U	15 U	42 UJ	42 UJ	44 U
Dimethylphthalate	UG/KG	86	7%		0	6	85	40 UJ	15 U	44 J	42 UJ	42 UJ	44 U
Fluoranthene	UG/KG	74	2%	100000	0	2	85	40 UJ	15 U	15 U	42 UJ	42 UJ	44 U
Fluorene	UG/KG	0	0%	30000	0	0	85	33 UJ	15 U	15 U	35 UJ	34 UJ	36 U
Hexachlorobenzene	UG/KG	0	0%	330	0	0	85	38 UJ	15 U	15 U	40 UJ	40 UJ	41 U
Hexachlorobutadiene	UG/KG	0	0%		0	0	85	39 UJ	44 U	45 U	41 UJ	41 UJ	42 U
Hexachlorocyclopentadiene	UG/KG	0	0%		0	0	85	36 UJ	370 U	370 U	38 UJ	38 UJ	39 U
Hexachloroethane	UG/KG	0	0%		0	0	85	32 UJ	44 U	45 U	34 UJ	33 UJ	35 U
Indeno(1,2,3-cd)pyrene	UG/KG	0	0%	500	0	0	85	37 UJ	44 U	45 U	39 UJ	39 UJ	40 U
Isophorone	UG/KG	0	0%		0	0	85	40 UJ	15 U	15 U	42 UJ	42 UJ	44 U
N-Nitrosodimethylamine	UG/KG	0	0%		0	0	85	58 UJ	44 U	45 U	61 UJ	60 UJ	62 U
N-Nitrosodiphenylamine	UG/KG	0	0%		0	0	85	45 UJ	15 U	15 U	47 UJ	46 UJ	48 U
N-Nitrosodipropylamine	UG/KG	0	0%		0	0	85	45 UJ	15 U	15 U	47 UJ	46 UJ	48 U

Table B-1C
SEAD-12 Complete Confirmatory Soil Sample Analytical Results
Compared to NYSDEC Unrestricted Use Levels
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION								SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12
LOCATION ID								S12EXPR-I-3-01	S12EXPR-I-3-04	S12EXPR-I-4-01	S12EXPR-J-2-01	S12EXPR-J-3-01	S12EXPR-J-3-02
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								S12EXPR-I-3-01	S12EXPR-I-3-04	S12EXPR-I-4-01	S12EXPR-J-2-01	S12EXPR-J-3-01	S12EXPR-J-3-02
TOP OF SAMPLE								0	0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								7/29/2009	10/15/2009	10/15/2009	7/29/2009	7/29/2009	8/5/2009
QC CODE								SA	SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA
AREA								Pit C2	Pit C2	Pit C2	Pit C2	Pit C2	Pit C2
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**NYSDEC Unrestricted Use Level**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Naphthalene	UG/KG	0	0%	12000	0	0	85	30 UJ	15 U	15 U	32 UJ	31 UJ	33 U
Nitrobenzene	UG/KG	0	0%		0	0	85	43 UJ	15 U	15 U	46 UJ	45 UJ	47 U
Pentachlorophenol	UG/KG	0	0%	800	0	0	85	1200 UJ	370 U	370 U	1200 UJ	1200 UJ	1300 U
Phenanthrene	UG/KG	52	2%	100000	0	2	85	41 UJ	15 U	15 U	44 UJ	43 UJ	45 U
Phenol	UG/KG	0	0%	330	0	0	85	39 UJ	15 U	15 U	41 UJ	41 UJ	42 U
Pyrene	UG/KG	64	2%	100000	0	2	85	36 UJ	15 U	15 U	38 UJ	38 UJ	39 U
PCBs													
Aroclor-1016	UG/KG	0	0%	100	0	0	87	18 UJ	2.43 U	2.46 U	19 UJ	19 UJ	19 U
Aroclor-1221	UG/KG	0	0%	100	0	0	87	39 UJ	2.47 U	2.49 U	41 UJ	41 UJ	42 U
Aroclor-1232	UG/KG	0	0%	100	0	0	87	18 UJ	1.5 U	1.52 U	19 UJ	19 UJ	19 U
Aroclor-1242	UG/KG	0	0%	100	0	0	87	27 UJ	2.03 U	2.05 U	28 UJ	28 UJ	29 U
Aroclor-1248	UG/KG	0	0%	100	0	0	87	18 UJ	3.97 U	4.01 U	19 UJ	19 UJ	19 U
Aroclor-1254	UG/KG	78	5%	100	0	4	87	18 UJ	5.27 U	5.32 U	19 UJ	19 UJ	19 U
Aroclor-1260	UG/KG	0	0%	100	0	0	87	31 UJ	2.22 U	2.24 U	33 UJ	32 UJ	34 U
Aroclor-1268	UG/KG	0	0%	100	0	0	87	18 UJ	3.27 U	3.3 U	19 UJ	19 UJ	19 U
Pesticides													
4,4'-DDD	UG/KG	6.9	1%	3.3	1	1	85	1.8 UJ	0.39 U	0.39 U	1.8 UJ	1.8 UJ	1.9 U
4,4'-DDE	UG/KG	5.9	4%	3.3	2	3	85	1.8 UJ	0.41 U	0.9 J	1.8 UJ	1.8 UJ	1.9 U
4,4'-DDT	UG/KG	9.8	4%	3.3	2	3	85	1.8 UJ	0.48 U	1.7 J	1.8 UJ	1.8 UJ	1.9 U
Aldrin	UG/KG	0	0%	5	0	0	85	0.86 UJ	0.44 U	0.45 U	0.91 UJ	0.89 UJ	0.93 U
Alpha-BHC	UG/KG	210	6%	20	2	5	85	2.6 J	0.37 U	0.37 U	0.91 UJ	0.89 UJ	0.93 U
Alpha-Chlordane	UG/KG	0	0%	94	0	0	85	0.86 UJ	0.39 U	0.39 U	0.91 UJ	0.89 UJ	0.93 U
Beta-BHC	UG/KG	63	1%	36	1	1	85	0.86 UJ	0.93 U	0.94 U	0.91 UJ	0.89 UJ	0.93 U
Chlordane (Alpha And Gamma Isomers)	UG/KG	0	0%	94	0	0	8		0.47 U	0.47 U			
Delta-BHC	UG/KG	61	4%	40	1	3	85	0.86 UJ	0.51 U	0.52 U	0.91 UJ	0.89 UJ	0.93 U
Dieldrin	UG/KG	0	0%	5	0	0	85	1.8 UJ	0.47 U	0.47 U	1.8 UJ	1.8 UJ	1.9 U
Endosulfan I	UG/KG	0	0%	2400	0	0	85	0.86 UJ	0.34 U	0.35 U	0.91 UJ	0.89 UJ	0.93 U
Endosulfan II	UG/KG	0	0%	2400	0	0	85	1.8 UJ	0.41 U	0.42 U	1.8 UJ	1.8 UJ	1.9 U
Endosulfan sulfate	UG/KG	0	0%	2400	0	0	85	1.8 UJ	0.69 U	0.7 U	1.8 UJ	1.8 UJ	1.9 U
Endrin	UG/KG	0	0%	14	0	0	85	1.8 UJ	0.72 U	0.73 U	1.8 UJ	1.8 UJ	1.9 U
Endrin aldehyde	UG/KG	0	0%		0	0	85	1.8 UJ	0.52 U	0.53 U	1.8 UJ	1.8 UJ	1.9 U
Endrin ketone	UG/KG	0	0%		0	0	85	1.8 UJ	1.1 U	1.1 U	1.8 UJ	1.8 UJ	1.9 U
Gamma-BHC/Lindane	UG/KG	0	0%	100	0	0	85	0.86 UJ	0.41 U	0.42 U	0.91 UJ	0.89 UJ	0.93 U
Gamma-Chlordane	UG/KG	0	0%		0	0	77	0.86 UJ			0.91 UJ	0.89 UJ	0.93 U
Heptachlor	UG/KG	0	0%	42	0	0	85	0.86 UJ	0.57 U	0.57 U	0.91 UJ	0.89 UJ	0.93 U
Heptachlor epoxide	UG/KG	0	0%		0	0	85	0.86 UJ	0.5 U	0.51 U	0.91 UJ	0.89 UJ	0.93 U
Methoxychlor	UG/KG	0	0%		0	0	85	8.6 UJ	0.49 U	0.49 U	9 UJ	8.9 UJ	9.3 U
Toxaphene	UG/KG	0	0%		0	0	85	18 UJ	7.4 U	7.5 U	18 UJ	18 UJ	19 U
Metals													
Aluminum	MG/KG	35100	100%		0	85	85	10400 J	8800 J	9800 J	9010 J	9200 J	9800
Antimony	MG/KG	0	0%		0	0	85	0.4 UJ	0.33 UJ	0.34 UJ	0.4 UJ	0.4 UJ	0.5 UJ
Arsenic	MG/KG	12.2	100%	13	0	85	85	4.4 J	4.1 J	3.8 J	4.2 J	3.6 J	3.3
Barium	MG/KG	304	100%	350	0	85	85	84.6 J	71 J	71 J	60.2 J	89.9 J	78
Beryllium	MG/KG	1.7	96%	7.2	0	82	85	0.59 J	0.46 J	0.49 J	0.55 J	0.51 J	0.55
Cadmium	MG/KG	2.5	34%	2.5	0	29	85	0.21 J	0.13 J	0.11 UJ	0.16 J	0.16 J	0.34 J
Calcium	MG/KG	186000	100%		0	85	85	90100 J	63000 J	75000 J	151000 J	105000 J	82600
Chromium	MG/KG	51.2	100%	30	2	85	85	16.6 J	17 J	16 J	13.7 J	14.3 J	16.2
Cobalt	MG/KG	29	100%		0	85	85	11.3 J	8.9 J	8.1 J	7.7 J	8.6 J	10
Copper	MG/KG	61.4	100%	50	1	85	85	23 J	21 J	23 J	19.2 J	19.6 J	23.6

Table B-1C
SEAD-12 Complete Confirmatory Soil Sample Analytical Results
Compared to NYSDEC Unrestricted Use Levels
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION							SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12
LOCATION ID							S12EXPR-I-3-01	S12EXPR-I-3-04	S12EXPR-I-4-01	S12EXPR-J-2-01	S12EXPR-J-3-01	S12EXPR-J-3-02
MATRIX							SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID							S12EXPR-I-3-01	S12EXPR-I-3-04	S12EXPR-I-4-01	S12EXPR-J-2-01	S12EXPR-J-3-01	S12EXPR-J-3-02
TOP OF SAMPLE							0	0	0	0	0	0
BOTTOM OF SAMPLE							0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE							7/29/2009	10/15/2009	10/15/2009	7/29/2009	7/29/2009	8/5/2009
QC CODE							SA	SA	SA	SA	SA	SA
STUDY ID							RA	RA	RA	RA	RA	RA
AREA							Pit C2	Pit C2	Pit C2	Pit C2	Pit C2	Pit C2
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**NYSDEC Unrestricted Use Level**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Cyanide	MG/KG	0	0%	27	0	0	85	0.42 UJ	0.2 UJ	0.2 UJ	0.42 UJ	0.42 UJ	0.42 U
Iron	MG/KG	56400	100%		0	85	85	22600 J	20000 J	20000 J	18000 J	19100 J	18600
Lead	MG/KG	33.3	100%	63	0	85	85	10.9 J	9.4 J	8.4 J	10.1 J	8.1 J	9.2 J
Magnesium	MG/KG	74400	100%		0	85	85	15600 J	12000 J	11000 J	11800 J	15300 J	15900 J
Manganese	MG/KG	1650	100%	1600	2	85	85	521 J	410 J	380 J	511 J	400 J	508
Mercury	MG/KG	0.05	95%	0.18	0	81	85	0.02 J	0.014 J	0.011 J	0.03 J	0.02 J	0.023 J
Nickel	MG/KG	75	100%	30	32	85	85	**30.3** J	26 J	28 J	24.1 J	25.4 J	29.5
Potassium	MG/KG	5330	100%		0	85	85	1790 J	1100 J	1300 J	1320 J	1760 J	1680 J
Selenium	MG/KG	2	18%	3.9	0	15	85	0.45 J	0.28 UJ	0.28 UJ	0.25 J	0.173 UJ	0.2 U
Silver	MG/KG	0	0%	2	0	0	85	0.0257 UJ	0.22 UJ	0.22 UJ	0.0257 UJ	0.0257 UJ	0.3 U
Sodium	MG/KG	390	100%		0	85	85	163 J	94 J	110 J	151 J	153 J	140
Thallium	MG/KG	0	0%		0	0	85	0.176 UJ	0.56 UJ	0.56 UJ	0.176 UJ	0.176 UJ	0.6 U
Vanadium	MG/KG	68	100%		0	85	85	18.2 J	20 J	17 J	16.2 J	16.2 J	18.5
Zinc	MG/KG	154	100%	109	2	85	85	54.1 J	59 J	52 J	36.4 J	44.1 J	49 J
TCLP													
TCLP 1,1-Dichloroethene	UG/L	0	0%		0	0	3						
TCLP 1,2-Dichloroethane	UG/L	0	0%		0	0	3						
TCLP Benzene	UG/L	0	0%		0	0	3						
TCLP Carbon tetrachloride	UG/L	0	0%		0	0	3						
TCLP Chlorobenzene	UG/L	0	0%		0	0	3						
TCLP Chloroform	UG/L	0	0%		0	0	3						
TCLP Methyl ethyl ketone	UG/L	0	0%		0	0	3						
TCLP Tetrachloroethene	UG/L	0	0%		0	0	3						
TCLP Trichloroethene	UG/L	0	0%		0	0	3						
TCLP Vinyl chloride	UG/L	0	0%		0	0	3						

Notes:
(1) The dataset of samples consists of the Inplace samples representing current site conditions
The overburden C1 samples were not included in this dataset.
(2) NYSDEC's Unrestricted Use Soil Cleanup Objective, 6 NYCRR Part 375-6.8(a).
(3) Sample/Duplicate pairs are evaluated as separate and discrete samples in this table
(4) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected; the associated reporting limit is approximate
R = the analytical result was rejected during data validation

Table B-1C
SEAD-12 Complete Confirmatory Soil Sample Analytical Results
Compared to NYSDEC Unrestricted Use Levels
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION								SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12
LOCATION ID								S12EXPR-J-4-01	S12EXPR-J-4-02	S12EXPR-J-4-03	S12EXPR-J-4-04	S12EXPR-J-5-01	S12EXPR-K-3-01
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								S12EXPR-J-4-01	S12EXPR-J-4-02	S12EXPR-J-4-03	S12EXPR-J-4-04	S12EXPR-J-5-01	S12EXPR-K-3-01
TOP OF SAMPLE								0	0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								7/29/2009	7/29/2009	7/29/2009	10/15/2009	7/29/2009	7/29/2009
QC CODE								SA	SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA
AREA								Pit C2	Pit C2	Pit C2	Pit C2	Pit C2	Pit C2
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**NYSDEC Unrestricted Use Level**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Volatile Organic Compounds													
1,1,1-Trichloroethane	UG/KG	0	0%	680	0	0	85	0.24 UJ	0.23 UJ	0.24 UJ	1 U	0.23 UJ	0.24 UJ
1,1,2,2-Tetrachloroethane	UG/KG	0	0%		0	0	85	0.36 UJ	0.35 UJ	0.36 UJ	0.52 U	0.35 UJ	0.36 UJ
1,1,2-Trichloroethane	UG/KG	0	0%		0	0	85	0.26 UJ	0.25 UJ	0.26 UJ	0.52 U	0.25 UJ	0.26 UJ
1,1-Dichloroethane	UG/KG	0	0%	270	0	0	85	0.18 UJ	0.18 UJ	0.18 UJ	1 U	0.18 UJ	0.18 UJ
1,1-Dichloroethene	UG/KG	0	0%	330	0	0	85	0.36 UJ	0.35 UJ	0.36 UJ	1 U	0.35 UJ	0.36 UJ
1,2-Dichloroethane	UG/KG	0	0%	20	0	0	85	0.3 UJ	0.28 UJ	0.29 UJ	1 U	0.29 UJ	0.3 UJ
1,2-Dichloropropane	UG/KG	0	0%		0	0	85	0.3 UJ	0.28 UJ	0.29 UJ	1 U	0.29 UJ	0.3 UJ
Acetone	UG/KG	9.6	13%	50	0	11	85	2.4 J	2.2 J	3.1 J	21 U	2.3 J	5.3 J
Benzene	UG/KG	0	0%	60	0	0	85	0.24 UJ	0.23 UJ	0.24 UJ	0.52 U	0.23 UJ	0.24 UJ
Bromodichloromethane	UG/KG	0	0%		0	0	85	0.24 UJ	0.23 UJ	0.24 UJ	1 U	0.23 UJ	0.24 UJ
Bromoform	UG/KG	0	0%		0	0	85	0.47 UJ	0.46 UJ	0.47 UJ	1 U	0.46 UJ	0.48 UJ
Carbon disulfide	UG/KG	2.5	2%		0	2	85	0.57 UJ	0.55 UJ	0.57 UJ	0.52 U	0.56 UJ	0.58 UJ
Carbon tetrachloride	UG/KG	0	0%	760	0	0	85	0.51 UJ	0.49 UJ	0.51 UJ	1 U	0.49 UJ	0.51 UJ
Chlorobenzene	UG/KG	0	0%	1100	0	0	85	0.25 UJ	0.24 UJ	0.25 UJ	1 U	0.24 UJ	0.25 UJ
Chlorodibromomethane	UG/KG	0	0%		0	0	85	0.37 UJ	0.36 UJ	0.37 UJ	0.52 U	0.36 UJ	0.37 UJ
Chloroethane	UG/KG	0	0%		0	0	85	0.49 UJ	0.47 UJ	0.48 UJ	1.6 U	0.47 UJ	0.49 UJ
Chloroform	UG/KG	0	0%	370	0	0	85	0.36 UJ	0.35 UJ	0.36 UJ	0.52 U	0.35 UJ	0.36 UJ
Cis-1,2-Dichloroethene	UG/KG	0.45	1%	250	0	1	85	0.25 UJ	0.24 UJ	0.25 UJ	0.52 U	0.24 UJ	0.25 UJ
Cis-1,3-Dichloropropene	UG/KG	0	0%		0	0	85	0.34 UJ	0.33 UJ	0.34 UJ	0.52 U	0.33 UJ	0.34 UJ
Ethyl benzene	UG/KG	2.7	1%	1000	0	1	85	0.99 UJ	0.95 UJ	0.99 UJ	0.52 U	0.96 UJ	0.99 UJ
Meta/Para Xylene	UG/KG	1.3	4%	260	0	3	85	0.71 UJ	0.75 J	0.71 UJ	1 U	0.69 UJ	0.71 UJ
Methyl bromide	UG/KG	0	0%		0	0	85	0.51 UJ	0.49 UJ	0.51 UJ	1.6 U	0.49 UJ	0.51 UJ
Methyl butyl ketone	UG/KG	0	0%		0	0	85	0.79 UJ	0.76 UJ	0.79 UJ	2.1 U	0.76 UJ	0.79 UJ
Methyl chloride	UG/KG	0	0%		0	0	85	0.34 UJ	0.33 UJ	0.34 UJ	0.52 U	0.33 UJ	0.34 UJ
Methyl ethyl ketone	UG/KG	1.6	5%	120	0	4	85	0.85 UJ	0.82 UJ	0.85 UJ	21 U	0.83 UJ	0.86 UJ
Methyl isobutyl ketone	UG/KG	0	0%		0	0	85	0.73 UJ	0.7 UJ	0.73 UJ	2.1 U	0.71 UJ	0.73 UJ
Methylene chloride	UG/KG	2.8	24%	50	0	20	85	0.43 UJ	0.47 J	0.43 UJ	0.52 U	0.42 UJ	0.43 UJ
Ortho Xylene	UG/KG	0	0%	260	0	0	85	0.71 UJ	0.68 UJ	0.71 UJ	0.52 U	0.69 UJ	0.71 UJ
Styrene	UG/KG	0.61	4%		0	3	85	0.32 UJ	0.31 UJ	0.32 UJ	0.52 U	0.31 UJ	0.32 UJ
Tetrachloroethene	UG/KG	0	0%	1300	0	0	85	0.55 UJ	0.53 UJ	0.55 UJ	1 U	0.54 UJ	0.55 UJ
Toluene	UG/KG	3.3	48%	700	0	41	85	0.36 UJ	1.1 J	1.5 J	0.52 U	0.63 J	0.97 J
Total Xylenes	UG/KG	0	0%	260	0	0	8				1.6 U		
Trans-1,2-Dichloroethene	UG/KG	0	0%	190	0	0	85	0.35 UJ	0.34 UJ	0.35 UJ	0.52 U	0.34 UJ	0.35 UJ
Trans-1,3-Dichloropropene	UG/KG	0	0%		0	0	85	0.41 UJ	0.39 UJ	0.41 UJ	0.52 UJ	0.4 UJ	0.41 UJ
Trichloroethene	UG/KG	1.2	16%	470	0	14	85	0.45 UJ	0.65 J	1 J	1 U	0.44 UJ	0.76 J
Vinyl chloride	UG/KG	0	0%	20	0	0	85	0.26 UJ	0.25 UJ	0.26 UJ	1 U	0.25 UJ	0.26 UJ
Semivolatile Organic Compounds													
1,2,4-Trichlorobenzene	UG/KG	0	0%		0	0	85	36 UJ	35 UJ	36 UJ	15 U	35 UJ	36 UJ
1,2-Dichlorobenzene	UG/KG	0	0%	1100	0	0	85	33 UJ	32 UJ	33 UJ	15 U	32 UJ	33 UJ
1,3-Dichlorobenzene	UG/KG	0	0%	2400	0	0	85	36 UJ	35 UJ	36 UJ	15 U	35 UJ	36 UJ
1,4-Dichlorobenzene	UG/KG	0	0%	1800	0	0	85	33 UJ	32 UJ	33 UJ	15 U	32 UJ	33 UJ
2,4,5-Trichlorophenol	UG/KG	0	0%		0	0	85	51 UJ	49 UJ	51 UJ	44 U	49 UJ	51 UJ
2,4,6-Trichlorophenol	UG/KG	0	0%		0	0	85	55 UJ	53 UJ	55 UJ	44 U	54 UJ	55 UJ
2,4-Dichlorophenol	UG/KG	0	0%		0	0	85	44 UJ	42 UJ	44 UJ	15 U	43 UJ	44 UJ
2,4-Dimethylphenol	UG/KG	0	0%		0	0	85	41 UJ	39 UJ	41 UJ	44 U	40 UJ	41 UJ
2,4-Dinitrophenol	UG/KG	0	0%		0	0	85	1100 UJ	1100 UJ	1100 UJ	730 U	1100 UJ	1100 UJ
2,4-Dinitrotoluene	UG/KG	0	0%		0	0	85	60 UJ	58 UJ	60 UJ	15 U	58 UJ	60 UJ
2,6-Dinitrotoluene	UG/KG	0	0%		0	0	85	45 UJ	44 UJ	45 UJ	15 U	44 UJ	45 UJ

Table B-1C
SEAD-12 Complete Confirmatory Soil Sample Analytical Results
Compared to NYSDEC Unrestricted Use Levels
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION								SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12
LOCATION ID								S12EXPR-J-4-01	S12EXPR-J-4-02	S12EXPR-J-4-03	S12EXPR-J-4-04	S12EXPR-J-5-01	S12EXPR-K-3-01
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								S12EXPR-J-4-01	S12EXPR-J-4-02	S12EXPR-J-4-03	S12EXPR-J-4-04	S12EXPR-J-5-01	S12EXPR-K-3-01
TOP OF SAMPLE								0	0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								7/29/2009	7/29/2009	7/29/2009	10/15/2009	7/29/2009	7/29/2009
QC CODE								SA	SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA
AREA								Pit C2	Pit C2	Pit C2	Pit C2	Pit C2	Pit C2
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**NYSDEC Unrestricted Use Level**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
2-Chloronaphthalene	UG/KG	0	0%		0	0	85	41 UJ	39 UJ	41 UJ	15 U	40 UJ	41 UJ
2-Chlorophenol	UG/KG	0	0%		0	0	85	43 UJ	41 UJ	43 UJ	15 U	42 UJ	43 UJ
2-Methylnaphthalene	UG/KG	0	0%		0	0	85	36 UJ	35 UJ	36 UJ	15 U	35 UJ	36 UJ
2-Methylphenol	UG/KG	0	0%	330	0	0	85	32 UJ	31 UJ	32 UJ	15 U	31 UJ	32 UJ
2-Nitroaniline	UG/KG	0	0%		0	0	85	1300 UJ	1300 UJ	1300 UJ	15 U	1300 UJ	1300 UJ
2-Nitrophenol	UG/KG	0	0%		0	0	85	31 UJ	30 UJ	31 UJ	15 U	30 UJ	31 UJ
3,3'-Dichlorobenzidine	UG/KG	0	0%		0	0	85	43 UJ	41 UJ	43 UJ	44 U	42 UJ	43 UJ
3-Nitroaniline	UG/KG	0	0%		0	0	85	900 UJ	870 UJ	900 UJ	44 U	870 UJ	900 UJ
4,6-Dinitro-2-methylphenol	UG/KG	0	0%		0	0	85	1700 UJ	1600 UJ	1700 UJ	190 U	1600 UJ	1700 UJ
4-Bromophenyl phenyl ether	UG/KG	0	0%		0	0	85	45 UJ	44 UJ	45 UJ	15 U	44 UJ	45 UJ
4-Chloro-3-methylphenol	UG/KG	0	0%		0	0	85	43 UJ	41 UJ	43 UJ	15 U	42 UJ	43 UJ
4-Chloroaniline	UG/KG	0	0%		0	0	85	42 UJ	40 UJ	42 UJ	15 U	41 UJ	42 UJ
4-Chlorophenyl phenyl ether	UG/KG	0	0%		0	0	85	44 UJ	42 UJ	44 UJ	15 U	43 UJ	44 UJ
4-Methylphenol	UG/KG	0	0%	330	0	0	8				44 U		
4-Nitroaniline	UG/KG	0	0%		0	0	85	1400 UJ	1300 UJ	1400 UJ	15 U	1300 UJ	1400 UJ
4-Nitrophenol	UG/KG	0	0%		0	0	85	1200 UJ	1200 UJ	1200 UJ	190 U	1200 UJ	1200 UJ
Acenaphthene	UG/KG	0	0%	20000	0	0	85	44 UJ	42 UJ	44 UJ	15 U	43 UJ	44 UJ
Acenaphthylene	UG/KG	0	0%	100000	0	0	85	41 UJ	39 UJ	41 UJ	15 U	40 UJ	41 UJ
Anthracene	UG/KG	0	0%	100000	0	0	85	42 UJ	40 UJ	42 UJ	15 U	41 UJ	42 UJ
Benzo(a)anthracene	UG/KG	0	0%	1000	0	0	85	44 UJ	42 UJ	44 UJ	15 U	43 UJ	44 UJ
Benzo(a)pyrene	UG/KG	0	0%	1000	0	0	85	37 UJ	36 UJ	37 UJ	15 U	36 UJ	37 UJ
Benzo(b)fluoranthene	UG/KG	0	0%	1000	0	0	85	53 UJ	51 UJ	53 UJ	15 U	51 UJ	53 UJ
Benzo(ghi)perylene	UG/KG	0	0%	100000	0	0	85	100 UJ	96 UJ	100 UJ	44 U	97 UJ	100 UJ
Benzo(k)fluoranthene	UG/KG	0	0%	800	0	0	85	54 UJ	52 UJ	54 UJ	15 U	53 UJ	54 UJ
Benzyl alcohol	UG/KG	140	38%		0	32	85	63 J	65 J	26 UJ	15 U	69 J	26 UJ
Bis(2-Chloroethoxy)methane	UG/KG	0	0%		0	0	85	55 UJ	53 UJ	55 UJ	15 U	54 UJ	55 UJ
Bis(2-Chloroethyl)ether	UG/KG	0	0%		0	0	85	43 UJ	41 UJ	43 UJ	15 U	42 UJ	43 UJ
Bis(2-Chloroisopropyl)ether	UG/KG	0	0%		0	0	85	52 UJ	50 UJ	52 UJ	15 U	50 UJ	52 UJ
Bis(2-Ethylhexyl)phthalate	UG/KG	120	11%		0	9	85	62 UJ	60 UJ	75 J	15 U	85 J	62 UJ
Butylbenzylphthalate	UG/KG	0	0%		0	0	85	45 UJ	44 UJ	45 UJ	15 U	44 UJ	45 UJ
Carbazole	UG/KG	0	0%		0	0	85	61 UJ	59 UJ	61 UJ	15 U	59 UJ	61 UJ
Chrysene	UG/KG	0	0%	1000	0	0	85	45 UJ	44 UJ	45 UJ	15 U	44 UJ	45 UJ
Di-n-butylphthalate	UG/KG	0	0%		0	0	85	160 UJ	150 UJ	160 UJ	15 U	150 UJ	160 UJ
Di-n-octylphthalate	UG/KG	0	0%		0	0	85	37 UJ	36 UJ	37 UJ	15 U	36 UJ	37 UJ
Dibenz(a,h)anthracene	UG/KG	0	0%	330	0	0	85	43 UJ	41 UJ	43 UJ	44 U	42 UJ	43 UJ
Dibenzofuran	UG/KG	0	0%	7000	0	0	85	41 UJ	39 UJ	41 UJ	15 U	40 UJ	41 UJ
Diethyl phthalate	UG/KG	0	0%		0	0	85	44 UJ	42 UJ	44 UJ	15 U	43 UJ	44 UJ
Dimethylphthalate	UG/KG	86	7%		0	6	85	44 UJ	42 UJ	44 UJ	15 U	43 UJ	44 UJ
Fluoranthene	UG/KG	74	2%	100000	0	2	85	44 UJ	42 UJ	44 UJ	15 U	43 UJ	44 UJ
Fluorene	UG/KG	0	0%	30000	0	0	85	36 UJ	35 UJ	36 UJ	15 U	35 UJ	36 UJ
Hexachlorobenzene	UG/KG	0	0%	330	0	0	85	42 UJ	40 UJ	42 UJ	15 U	41 UJ	42 UJ
Hexachlorobutadiene	UG/KG	0	0%		0	0	85	43 UJ	41 UJ	43 UJ	44 U	42 UJ	43 UJ
Hexachlorocyclopentadiene	UG/KG	0	0%		0	0	85	40 UJ	38 UJ	40 UJ	370 U	38 UJ	40 UJ
Hexachloroethane	UG/KG	0	0%		0	0	85	35 UJ	34 UJ	35 UJ	44 U	34 UJ	35 UJ
Indeno(1,2,3-cd)pyrene	UG/KG	0	0%	500	0	0	85	41 UJ	39 UJ	41 UJ	44 U	40 UJ	41 UJ
Isophorone	UG/KG	0	0%		0	0	85	44 UJ	42 UJ	44 UJ	15 U	43 UJ	44 UJ
N-Nitrosodimethylamine	UG/KG	0	0%		0	0	85	63 UJ	61 UJ	63 UJ	44 U	61 UJ	63 UJ
N-Nitrosodiphenylamine	UG/KG	0	0%		0	0	85	49 UJ	47 UJ	48 UJ	15 U	47 UJ	49 UJ
N-Nitrosodipropylamine	UG/KG	0	0%		0	0	85	49 UJ	47 UJ	48 UJ	15 U	47 UJ	49 UJ

Table B-1C
SEAD-12 Complete Confirmatory Soil Sample Analytical Results
Compared to NYSDEC Unrestricted Use Levels
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION								SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12
LOCATION ID								S12EXPR-J-4-01	S12EXPR-J-4-02	S12EXPR-J-4-03	S12EXPR-J-4-04	S12EXPR-J-5-01	S12EXPR-K-3-01
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								S12EXPR-J-4-01	S12EXPR-J-4-02	S12EXPR-J-4-03	S12EXPR-J-4-04	S12EXPR-J-5-01	S12EXPR-K-3-01
TOP OF SAMPLE								0	0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								7/29/2009	7/29/2009	7/29/2009	10/15/2009	7/29/2009	7/29/2009
QC CODE								SA	SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA
AREA								Pit C2	Pit C2	Pit C2	Pit C2	Pit C2	Pit C2
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**NYSDEC Unrestricted Use Level**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Naphthalene	UG/KG	0	0%	12000	0	0	85	33 UJ	32 UJ	33 UJ	15 U	32 UJ	33 UJ
Nitrobenzene	UG/KG	0	0%		0	0	85	47 UJ	46 UJ	47 UJ	15 U	46 UJ	48 UJ
Pentachlorophenol	UG/KG	0	0%	800	0	0	85	1300 UJ	1200 UJ	1300 UJ	370 U	1200 UJ	1300 UJ
Phenanthrene	UG/KG	52	2%	100000	0	2	85	45 UJ	44 UJ	45 UJ	15 U	44 UJ	45 UJ
Phenol	UG/KG	0	0%	330	0	0	85	43 UJ	41 UJ	43 UJ	15 U	42 UJ	43 UJ
Pyrene	UG/KG	64	2%	100000	0	2	85	40 UJ	38 UJ	40 UJ	15 U	38 UJ	40 UJ
PCBs													
Aroclor-1016	UG/KG	0	0%	100	0	0	87	19 UJ	19 UJ	19 UJ	2.43 U	19 UJ	20 UJ
Aroclor-1221	UG/KG	0	0%	100	0	0	87	43 UJ	41 UJ	43 UJ	2.47 U	42 UJ	43 UJ
Aroclor-1232	UG/KG	0	0%	100	0	0	87	19 UJ	19 UJ	19 UJ	1.5 U	19 UJ	20 UJ
Aroclor-1242	UG/KG	0	0%	100	0	0	87	30 UJ	28 UJ	29 UJ	2.03 U	29 UJ	30 UJ
Aroclor-1248	UG/KG	0	0%	100	0	0	87	19 UJ	19 UJ	19 UJ	3.97 U	19 UJ	20 UJ
Aroclor-1254	UG/KG	78	5%	100	0	4	87	53 J	19 UJ	19 UJ	5.27 U	19 UJ	20 UJ
Aroclor-1260	UG/KG	0	0%	100	0	0	87	34 UJ	33 UJ	34 UJ	2.22 U	33 UJ	34 UJ
Aroclor-1268	UG/KG	0	0%	100	0	0	87	19 UJ	19 UJ	19 UJ	3.27 U	19 UJ	20 UJ
Pesticides													
4,4'-DDD	UG/KG	6.9	1%	3.3	1	1	85	1.9 UJ	1.8 UJ	1.9 UJ	0.39 U	1.9 UJ	1.9 UJ
4,4'-DDE	UG/KG	5.9	4%	3.3	2	3	85	1.9 UJ	1.8 UJ	1.9 UJ	0.41 U	1.9 UJ	1.9 UJ
4,4'-DDT	UG/KG	9.8	4%	3.3	2	3	85	1.9 UJ	1.8 UJ	1.9 UJ	0.48 U	1.9 UJ	1.9 UJ
Aldrin	UG/KG	0	0%	5	0	0	85	0.94 UJ	0.91 UJ	0.94 UJ	0.44 U	0.92 UJ	0.95 UJ
Alpha-BHC	UG/KG	210	6%	20	2	5	85	0.94 UJ	0.91 UJ	0.94 UJ	0.37 U	0.92 UJ	0.95 UJ
Alpha-Chlordane	UG/KG	0	0%	94	0	0	85	0.94 UJ	0.91 UJ	0.94 UJ	0.39 U	0.92 UJ	0.95 UJ
Beta-BHC	UG/KG	63	1%	36	1	1	85	0.94 UJ	0.91 UJ	0.94 UJ	0.93 U	0.92 UJ	0.95 UJ
Chlordane (Alpha And Gamma Isomers)	UG/KG	0	0%	94	0	0	8				0.47 U		
Delta-BHC	UG/KG	61	4%	40	1	3	85	0.94 UJ	0.91 UJ	0.94 UJ	0.51 U	0.92 UJ	0.95 UJ
Dieldrin	UG/KG	0	0%	5	0	0	85	1.9 UJ	1.8 UJ	1.9 UJ	0.47 U	1.9 UJ	1.9 UJ
Endosulfan I	UG/KG	0	0%	2400	0	0	85	0.94 UJ	0.91 UJ	0.94 UJ	0.34 U	0.92 UJ	0.95 UJ
Endosulfan II	UG/KG	0	0%	2400	0	0	85	1.9 UJ	1.8 UJ	1.9 UJ	0.41 U	1.9 UJ	1.9 UJ
Endosulfan sulfate	UG/KG	0	0%	2400	0	0	85	1.9 UJ	1.8 UJ	1.9 UJ	0.69 U	1.9 UJ	1.9 UJ
Endrin	UG/KG	0	0%	14	0	0	85	1.9 UJ	1.8 UJ	1.9 UJ	0.72 U	1.9 UJ	1.9 UJ
Endrin aldehyde	UG/KG	0	0%		0	0	85	1.9 UJ	1.8 UJ	1.9 UJ	0.52 U	1.9 UJ	1.9 UJ
Endrin ketone	UG/KG	0	0%		0	0	85	1.9 UJ	1.8 UJ	1.9 UJ	1.1 U	1.9 UJ	1.9 UJ
Gamma-BHC/Lindane	UG/KG	0	0%	100	0	0	85	0.94 UJ	0.91 UJ	0.94 UJ	0.41 U	0.92 UJ	0.95 UJ
Gamma-Chlordane	UG/KG	0	0%		0	0	77	0.94 UJ	0.91 UJ	0.94 UJ		0.92 UJ	0.95 UJ
Heptachlor	UG/KG	0	0%	42	0	0	85	0.94 UJ	0.91 UJ	0.94 UJ	0.57 U	0.92 UJ	0.95 UJ
Heptachlor epoxide	UG/KG	0	0%		0	0	85	0.94 UJ	0.91 UJ	0.94 UJ	0.5 U	0.92 UJ	0.95 UJ
Methoxychlor	UG/KG	0	0%		0	0	85	9.4 UJ	9 UJ	9.3 UJ	0.49 U	9.1 UJ	9.4 UJ
Toxaphene	UG/KG	0	0%		0	0	85	19 UJ	18 UJ	19 UJ	7.4 U	19 UJ	19 UJ
Metals													
Aluminum	MG/KG	35100	100%		0	85	85	10000 J	11800 J	16700 J	9100 J	12900 J	12300 J
Antimony	MG/KG	0	0%		0	0	85	0.4 UJ	0.4 UJ	0.4 UJ	0.33 UJ	0.4 UJ	0.4 UJ
Arsenic	MG/KG	12.2	100%	13	0	85	85	3.5 J	4.6 J	6.8 J	8 J	4.8 J	4.6 J
Barium	MG/KG	304	100%	350	0	85	85	71.7 J	83.8 J	125 J	87 J	86 J	88.4 J
Beryllium	MG/KG	1.7	96%	7.2	0	82	85	0.52 J	0.64 J	0.96 J	0.5 J	0.77 J	0.7 J
Cadmium	MG/KG	2.5	34%	2.5	0	29	85	0.56 UJ	0.53 UJ	0.56 UJ	0.11 UJ	0.54 UJ	0.55 UJ
Calcium	MG/KG	186000	100%		0	85	85	84400 J	70500 J	3320 J	74000 J	14600 J	76100 J
Chromium	MG/KG	51.2	100%	30	2	85	85	14.7 J	17.9 J	25.9 J	14 J	19.6 J	19.8 J
Cobalt	MG/KG	29	100%		0	85	85	7.4 J	9.6 J	12.6 J	8.6 J	11.5 J	9.8 J
Copper	MG/KG	61.4	100%	50	1	85	85	19.5 J	26.5 J	29.3 J	35 J	22.9 J	28.5 J

Table B-1C
SEAD-12 Complete Confirmatory Soil Sample Analytical Results
Compared to NYSDEC Unrestricted Use Levels
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION								SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12
LOCATION ID								S12EXPR-J-4-01	S12EXPR-J-4-02	S12EXPR-J-4-03	S12EXPR-J-4-04	S12EXPR-J-5-01	S12EXPR-K-3-01
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								S12EXPR-J-4-01	S12EXPR-J-4-02	S12EXPR-J-4-03	S12EXPR-J-4-04	S12EXPR-J-5-01	S12EXPR-K-3-01
TOP OF SAMPLE								0	0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								7/29/2009	7/29/2009	7/29/2009	10/15/2009	7/29/2009	7/29/2009
QC CODE								SA	SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA
AREA								Pit C2	Pit C2	Pit C2	Pit C2	Pit C2	Pit C2
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**NYSDEC Unrestricted Use Level**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Cyanide	MG/KG	0	0%	27	0	0	85	0.5 UJ	0.42 UJ	0.42 UJ	0.2 UJ	0.5 UJ	0.5 UJ
Iron	MG/KG	56400	100%		0	85	85	18800 J	22700 J	33200 J	24000 J	26300 J	26200 J
Lead	MG/KG	33.3	100%	63	0	85	85	8.2 J	10.8 J	14.4 J	13 J	13.7 J	13.5 J
Magnesium	MG/KG	74400	100%		0	85	85	24700 J	12700 J	5260 J	12000 J	5520 J	18000 J
Manganese	MG/KG	1650	100%	1600	2	85	85	358 J	473 J	542 J	400 J	538 J	471 J
Mercury	MG/KG	0.05	95%	0.18	0	81	85	0.03 J	0.03 J	0.04 J	0.019 J	0.03 J	0.02 J
Nickel	MG/KG	75	100%	30	32	85	85	23.8 J	**30.5** J	**47** J	28 J	29.3 J	**33.1** J
Potassium	MG/KG	5330	100%		0	85	85	1420 J	1550 J	1740 J	1300 J	1420 J	1730 J
Selenium	MG/KG	2	18%	3.9	0	15	85	0.173 UJ	0.173 UJ	1.11 UJ	0.29 J	1.08 UJ	0.173 UJ
Silver	MG/KG	0	0%	2	0	0	85	0.0257 UJ	0.0257 UJ	0.0257 UJ	0.22 UJ	0.0257 UJ	0.0257 UJ
Sodium	MG/KG	390	100%		0	85	85	145 J	112 J	39.6 J	110 J	50.6 J	131 J
Thallium	MG/KG	0	0%		0	0	85	0.176 UJ	0.176 UJ	0.176 UJ	0.56 UJ	0.176 UJ	0.176 UJ
Vanadium	MG/KG	68	100%		0	85	85	17.1 J	19.6 J	28.4 J	19 J	23.1 J	21.4 J
Zinc	MG/KG	154	100%	109	2	85	85	55.6 J	53.8 J	70.3 J	65 J	51.6 J	79.9 J
TCLP													
TCLP 1,1-Dichloroethene	UG/L	0	0%		0	0	3						
TCLP 1,2-Dichloroethane	UG/L	0	0%		0	0	3						
TCLP Benzene	UG/L	0	0%		0	0	3						
TCLP Carbon tetrachloride	UG/L	0	0%		0	0	3						
TCLP Chlorobenzene	UG/L	0	0%		0	0	3						
TCLP Chloroform	UG/L	0	0%		0	0	3						
TCLP Methyl ethyl ketone	UG/L	0	0%		0	0	3						
TCLP Tetrachloroethene	UG/L	0	0%		0	0	3						
TCLP Trichloroethene	UG/L	0	0%		0	0	3						
TCLP Vinyl chloride	UG/L	0	0%		0	0	3						

Notes:
(1) The dataset of samples consists of the Inplace samples representing current site conditions
The overburden C1 samples were not included in this dataset.
(2) NYSDEC's Unrestricted Use Soil Cleanup Objective, 6 NYCRR Part 375-6.8(a).
(3) Sample/Duplicate pairs are evaluated as separate and discrete samples in this table
(4) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected; the associated reporting limit is approximate
R = the analytical result was rejected during data validation

Table B-1C
SEAD-12 Complete Confirmatory Soil Sample Analytical Results
Compared to NYSDEC Unrestricted Use Levels
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION								SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12
LOCATION ID								S12EXPR-K-4-01	S12EXSW-I-2-01	S12EXSW-I-2-02	S12EXSW-I-2-03	S12EXSW-I-3-01	S12EXSW-I-3-01
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								S12EXPR-K-4-01	S12EXSW-I-2-01	S12EXSW-I-2-02	S12EXSW-I-2-03	S12EXSW-I-3-01	S12EXSW-I-3-05
TOP OF SAMPLE								0	0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0	0.2	0.2	0	0.2
SAMPLE DATE								7/29/2009	8/5/2009	10/7/2009	10/7/2009	8/5/2009	10/5/2009
QC CODE								SA	SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA
AREA								Pit C2	Pit C2	Pit C2	Pit C2	Pit C2	Pit C2
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**NYSDEC Unrestricted Use Level**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Volatile Organic Compounds													
1,1,1-Trichloroethane	UG/KG	0	0%	680	0	0	85	0.22 UJ	0.25 U	0.27 U	0.27 U	0.24 U	0.24 U
1,1,2,2-Tetrachloroethane	UG/KG	0	0%		0	0	85	0.33 UJ	0.46 U	0.51 U	0.51 U	0.45 U	0.45 U
1,1,2-Trichloroethane	UG/KG	0	0%		0	0	85	0.24 UJ	0.67 U	0.73 U	0.73 U	0.65 U	0.66 U
1,1-Dichloroethane	UG/KG	0	0%	270	0	0	85	0.17 UJ	0.53 U	0.58 U	0.58 U	0.52 U	0.52 U
1,1-Dichloroethene	UG/KG	0	0%	330	0	0	85	0.33 UJ	0.43 U	0.47 U	0.47 U	0.42 U	0.42 U
1,2-Dichloroethane	UG/KG	0	0%	20	0	0	85	0.27 UJ	0.41 U	0.44 U	0.45 U	0.39 U	0.4 U
1,2-Dichloropropane	UG/KG	0	0%		0	0	85	0.27 UJ	0.45 U	0.49 U	0.5 U	0.44 U	0.44 U
Acetone	UG/KG	9.6	13%	50	0	11	85	9.6 J	23 UJ	1.9 UJ	1.9 UJ	22 UJ	1.7 UJ
Benzene	UG/KG	0	0%	60	0	0	85	0.22 UJ	0.53 U	0.58 U	0.58 U	0.52 U	0.52 U
Bromodichloromethane	UG/KG	0	0%		0	0	85	0.22 UJ	0.59 U	0.65 U	0.65 U	0.57 U	0.58 U
Bromoform	UG/KG	0	0%		0	0	85	0.44 UJ	0.49 U	0.53 U	0.53 U	0.47 U	0.48 U
Carbon disulfide	UG/KG	2.5	2%		0	2	85	0.53 UJ	0.59 U	0.65 U	0.65 U	0.57 U	0.58 U
Carbon tetrachloride	UG/KG	0	0%	760	0	0	85	0.47 UJ	0.52 U	0.57 U	0.57 U	0.51 U	0.51 U
Chlorobenzene	UG/KG	0	0%	1100	0	0	85	0.23 UJ	0.56 U	0.61 U	0.61 U	0.54 U	0.54 U
Chlorodibromomethane	UG/KG	0	0%		0	0	85	0.34 UJ	0.38 U	0.42 U	0.42 U	0.37 U	0.38 U
Chloroethane	UG/KG	0	0%		0	0	85	0.45 UJ	0.56 U	0.61 U	0.61 U	0.54 U	0.54 U
Chloroform	UG/KG	0	0%	370	0	0	85	0.33 UJ	0.5 U	0.55 U	0.55 U	0.48 U	0.49 U
Cis-1,2-Dichloroethene	UG/KG	0.45	1%	250	0	1	85	0.23 UJ	0.36 U	0.39 U	0.39 U	0.35 U	0.35 U
Cis-1,3-Dichloropropene	UG/KG	0	0%		0	0	85	0.31 UJ	0.39 U	0.43 U	0.43 U	0.38 U	0.39 U
Ethyl benzene	UG/KG	2.7	1%	1000	0	1	85	0.91 UJ	1.1 U	1.2 U	1.2 U	0.98 U	0.99 U
Meta/Para Xylene	UG/KG	1.3	4%	260	0	3	85	0.65 UJ	1.1 U	1.2 U	1.2 U	1.1 U	1.1 U
Methyl bromide	UG/KG	0	0%		0	0	85	0.47 UJ	0.9 UJ	0.98 UJ	0.99 UJ	0.87 UJ	0.88 U
Methyl butyl ketone	UG/KG	0	0%		0	0	85	0.72 UJ	0.82 U	0.9 U	0.9 U	0.79 U	0.8 U
Methyl chloride	UG/KG	0	0%		0	0	85	0.31 UJ	0.66 U	0.72 U	0.72 U	0.64 U	0.64 U
Methyl ethyl ketone	UG/KG	1.6	5%	120	0	4	85	1.6 J	0.88 U	0.96 U	0.96 U	0.85 U	0.86 U
Methyl isobutyl ketone	UG/KG	0	0%		0	0	85	0.67 UJ	0.75 U	0.82 U	0.82 U	0.73 U	0.73 UJ
Methylene chloride	UG/KG	2.8	24%	50	0	20	85	0.4 UJ	0.53 J	2.8 J	0.77 J	0.66 J	0.43 U
Ortho Xylene	UG/KG	0	0%	260	0	0	85	0.65 UJ	0.73 U	0.8 U	0.8 U	0.71 U	0.71 U
Styrene	UG/KG	0.61	4%		0	3	85	0.29 UJ	0.52 U	0.57 U	0.57 U	0.51 U	0.51 U
Tetrachloroethene	UG/KG	0	0%	1300	0	0	85	0.51 UJ	0.57 U	0.62 U	0.62 U	0.55 U	0.55 U
Toluene	UG/KG	3.3	48%	700	0	41	85	0.61 J	0.76 J	0.41 U	0.41 U	0.36 U	0.36 U
Total Xylenes	UG/KG	0	0%	260	0	0	8						
Trans-1,2-Dichloroethene	UG/KG	0	0%	190	0	0	85	0.32 UJ	0.6 U	0.66 U	0.66 U	0.58 U	0.59 U
Trans-1,3-Dichloropropene	UG/KG	0	0%		0	0	85	0.37 UJ	0.43 U	0.47 U	0.47 U	0.42 U	0.42 U
Trichloroethene	UG/KG	1.2	16%	470	0	14	85	0.42 UJ	0.46 U	0.51 U	0.51 U	0.45 U	0.45 U
Vinyl chloride	UG/KG	0	0%	20	0	0	85	0.24 UJ	0.54 U	0.6 U	0.6 U	0.53 U	0.53 U
Semivolatile Organic Compounds													
1,2,4-Trichlorobenzene	UG/KG	0	0%		0	0	85	33 UJ	37 U	41 U	41 U	36 U	36 U
1,2-Dichlorobenzene	UG/KG	0	0%	1100	0	0	85	30 UJ	34 U	37 U	37 U	33 U	33 U
1,3-Dichlorobenzene	UG/KG	0	0%	2400	0	0	85	33 UJ	37 U	41 U	41 U	36 U	36 U
1,4-Dichlorobenzene	UG/KG	0	0%	1800	0	0	85	30 UJ	34 U	37 U	37 U	33 U	33 U
2,4,5-Trichlorophenol	UG/KG	0	0%		0	0	85	47 UJ	52 U	57 U	57 U	51 U	51 U
2,4,6-Trichlorophenol	UG/KG	0	0%		0	0	85	51 UJ	57 U	62 U	62 U	55 U	55 U
2,4-Dichlorophenol	UG/KG	0	0%		0	0	85	41 UJ	45 U	49 U	50 U	44 U	44 U
2,4-Dimethylphenol	UG/KG	0	0%		0	0	85	37 UJ	42 U	46 U	46 U	41 U	41 U
2,4-Dinitrophenol	UG/KG	0	0%		0	0	85	1000 UJ	1200 UJ	1300 U	1300 U	1100 UJ	1100 U
2,4-Dinitrotoluene	UG/KG	0	0%		0	0	85	55 UJ	61 U	67 U	67 U	59 U	60 U
2,6-Dinitrotoluene	UG/KG	0	0%		0	0	85	42 UJ	46 U	51 U	51 U	45 U	45 U

Table B-1C
SEAD-12 Complete Confirmatory Soil Sample Analytical Results
Compared to NYSDEC Unrestricted Use Levels
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION								SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12
LOCATION ID								S12EXPR-K-4-01	S12EXSW-I-2-01	S12EXSW-I-2-02	S12EXSW-I-2-03	S12EXSW-I-3-01	S12EXSW-I-3-01
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								S12EXPR-K-4-01	S12EXSW-I-2-01	S12EXSW-I-2-02	S12EXSW-I-2-03	S12EXSW-I-3-01	S12EXSW-I-3-05
TOP OF SAMPLE								0	0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0	0.2	0.2	0	0.2
SAMPLE DATE								7/29/2009	8/5/2009	10/7/2009	10/7/2009	8/5/2009	10/5/2009
QC CODE								SA	SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA
AREA								Pit C2	Pit C2	Pit C2	Pit C2	Pit C2	Pit C2
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**NYSDEC Unrestricted Use Level**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
2-Chloronaphthalene	UG/KG	0	0%		0	0	85	37 UJ	42 U	46 U	46 U	41 U	41 U
2-Chlorophenol	UG/KG	0	0%		0	0	85	40 UJ	44 U	48 U	48 U	43 U	43 U
2-Methylnaphthalene	UG/KG	0	0%		0	0	85	33 UJ	37 U	41 U	41 U	36 U	36 U
2-Methylphenol	UG/KG	0	0%	330	0	0	85	29 UJ	33 U	36 U	36 U	32 U	32 U
2-Nitroaniline	UG/KG	0	0%		0	0	85	1200 UJ	1400 U	1500 U	1500 U	1300 U	1300 U
2-Nitrophenol	UG/KG	0	0%		0	0	85	28 UJ	31 U	34 U	34 U	31 U	31 U
3,3'-Dichlorobenzidine	UG/KG	0	0%		0	0	85	40 UJ	44 U	48 U	48 U	43 U	43 U
3-Nitroaniline	UG/KG	0	0%		0	0	85	830 UJ	920 U	1100 U	1100 U	890 U	900 U
4,6-Dinitro-2-methylphenol	UG/KG	0	0%		0	0	85	1500 UJ	1700 U	1900 U	1900 U	1700 U	1700 U
4-Bromophenyl phenyl ether	UG/KG	0	0%		0	0	85	42 UJ	46 U	51 U	51 U	45 U	45 U
4-Chloro-3-methylphenol	UG/KG	0	0%		0	0	85	40 UJ	44 U	48 U	48 U	43 U	43 U
4-Chloroaniline	UG/KG	0	0%		0	0	85	39 UJ	43 U	47 U	47 U	42 U	42 U
4-Chlorophenyl phenyl ether	UG/KG	0	0%		0	0	85	41 UJ	45 U	49 U	50 U	44 U	44 U
4-Methylphenol	UG/KG	0	0%	330	0	0	8						
4-Nitroaniline	UG/KG	0	0%		0	0	85	1300 UJ	1400 U	1500 U	1500 U	1400 U	1400 U
4-Nitrophenol	UG/KG	0	0%		0	0	85	1100 UJ	1300 U	1400 U	1400 U	1200 U	1200 U
Acenaphthene	UG/KG	0	0%	20000	0	0	85	41 UJ	45 U	49 U	50 U	44 U	44 U
Acenaphthylene	UG/KG	0	0%	100000	0	0	85	37 UJ	42 U	46 U	46 U	41 U	41 U
Anthracene	UG/KG	0	0%	100000	0	0	85	39 UJ	43 U	47 U	47 U	42 U	42 U
Benzo(a)anthracene	UG/KG	0	0%	1000	0	0	85	41 UJ	45 U	49 U	50 U	44 U	44 U
Benzo(a)pyrene	UG/KG	0	0%	1000	0	0	85	34 UJ	38 U	42 U	42 U	37 U	38 U
Benzo(b)fluoranthene	UG/KG	0	0%	1000	0	0	85	49 UJ	54 U	60 U	60 U	53 U	53 U
Benzo(ghi)perylene	UG/KG	0	0%	100000	0	0	85	92 UJ	110 U	120 U	120 U	99 U	100 U
Benzo(k)fluoranthene	UG/KG	0	0%	800	0	0	85	50 UJ	56 U	61 U	61 U	54 U	54 U
Benzyl alcohol	UG/KG	140	38%		0	32	85	24 UJ	48 J	410 U	420 U	40 J	26 U
Bis(2-Chloroethoxy)methane	UG/KG	0	0%		0	0	85	51 UJ	57 U	62 U	62 U	55 U	55 U
Bis(2-Chloroethyl)ether	UG/KG	0	0%		0	0	85	40 UJ	44 U	48 U	48 U	43 U	43 U
Bis(2-Chloroisopropyl)ether	UG/KG	0	0%		0	0	85	48 UJ	53 U	58 U	58 U	52 U	52 U
Bis(2-Ethylhexyl)phthalate	UG/KG	120	11%		0	9	85	57 UJ	64 U	70 U	70 U	62 U	62 U
Butylbenzylphthalate	UG/KG	0	0%		0	0	85	42 UJ	46 U	51 U	51 U	45 U	45 U
Carbazole	UG/KG	0	0%		0	0	85	56 UJ	62 U	68 U	68 U	61 U	61 U
Chrysene	UG/KG	0	0%	1000	0	0	85	42 UJ	46 U	51 U	51 U	45 U	45 U
Di-n-butylphthalate	UG/KG	0	0%		0	0	85	140 UJ	160 U	170 U	170 U	160 U	160 U
Di-n-octylphthalate	UG/KG	0	0%		0	0	85	34 UJ	38 U	42 U	42 U	37 U	38 U
Dibenz(a,h)anthracene	UG/KG	0	0%	330	0	0	85	40 UJ	44 U	48 U	48 U	43 U	43 U
Dibenzofuran	UG/KG	0	0%	7000	0	0	85	37 UJ	42 U	46 U	46 U	41 U	41 U
Diethyl phthalate	UG/KG	0	0%		0	0	85	41 UJ	45 U	49 U	50 U	44 U	44 U
Dimethylphthalate	UG/KG	86	7%		0	6	85	41 UJ	45 U	49 U	50 U	44 U	44 U
Fluoranthene	UG/KG	74	2%	100000	0	2	85	41 UJ	45 U	49 U	50 U	44 U	44 U
Fluorene	UG/KG	0	0%	30000	0	0	85	33 UJ	37 U	41 U	41 U	36 U	36 U
Hexachlorobenzene	UG/KG	0	0%	330	0	0	85	39 UJ	43 U	47 U	47 U	42 U	42 U
Hexachlorobutadiene	UG/KG	0	0%		0	0	85	40 UJ	44 U	48 U	48 U	43 U	43 U
Hexachlorocyclopentadiene	UG/KG	0	0%		0	0	85	36 UJ	41 U	44 U	45 U	39 U	40 U
Hexachloroethane	UG/KG	0	0%		0	0	85	32 UJ	36 U	39 U	39 U	35 U	35 U
Indeno(1,2,3-cd)pyrene	UG/KG	0	0%	500	0	0	85	37 UJ	42 U	46 U	46 U	41 U	41 U
Isophorone	UG/KG	0	0%		0	0	85	41 UJ	45 U	49 U	50 U	44 U	44 U
N-Nitrosodimethylamine	UG/KG	0	0%		0	0	85	58 UJ	65 U	71 U	71 U	63 U	63 U
N-Nitrosodiphenylamine	UG/KG	0	0%		0	0	85	45 UJ	50 U	55 U	55 U	48 U	49 U
N-Nitrosodipropylamine	UG/KG	0	0%		0	0	85	45 UJ	50 U	55 U	55 U	48 U	49 U

Table B-1C
SEAD-12 Complete Confirmatory Soil Sample Analytical Results
Compared to NYSDEC Unrestricted Use Levels
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION								SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12
LOCATION ID								S12EXPR-K-4-01	S12EXSW-I-2-01	S12EXSW-I-2-02	S12EXSW-I-2-03	S12EXSW-I-3-01	S12EXSW-I-3-01
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								S12EXPR-K-4-01	S12EXSW-I-2-01	S12EXSW-I-2-02	S12EXSW-I-2-03	S12EXSW-I-3-01	S12EXSW-I-3-05
TOP OF SAMPLE								0	0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0	0.2	0.2	0	0.2
SAMPLE DATE								7/29/2009	8/5/2009	10/7/2009	10/7/2009	8/5/2009	10/5/2009
QC CODE								SA	SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA
AREA								Pit C2	Pit C2	Pit C2	Pit C2	Pit C2	Pit C2
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**NYSDEC Unrestricted Use Level**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Naphthalene	UG/KG	0	0%	12000	0	0	85	30 UJ	34 U	37 U	37 U	33 U	33 U
Nitrobenzene	UG/KG	0	0%		0	0	85	44 UJ	49 U	53 U	53 U	47 U	48 U
Pentachlorophenol	UG/KG	0	0%	800	0	0	85	1200 UJ	1300 U	1400 U	1400 U	1300 U	1300 U
Phenanthrene	UG/KG	52	2%	100000	0	2	85	42 UJ	46 U	51 U	51 U	45 U	45 U
Phenol	UG/KG	0	0%	330	0	0	85	40 UJ	44 U	48 U	48 U	43 U	43 U
Pyrene	UG/KG	64	2%	100000	0	2	85	36 UJ	41 U	44 U	45 U	39 U	40 U
PCBs													
Aroclor-1016	UG/KG	0	0%	100	0	0	87	18 UJ	20 U	22 U	22 U	19 U	200 U
Aroclor-1221	UG/KG	0	0%	100	0	0	87	40 UJ	44 U	48 U	48 U	43 U	430 U
Aroclor-1232	UG/KG	0	0%	100	0	0	87	18 UJ	20 U	22 U	22 U	19 U	200 U
Aroclor-1242	UG/KG	0	0%	100	0	0	87	27 UJ	30 U	33 U	33 U	29 U	300 U
Aroclor-1248	UG/KG	0	0%	100	0	0	87	18 UJ	20 U	22 U	22 U	19 U	200 U
Aroclor-1254	UG/KG	78	5%	100	0	4	87	18 UJ	20 U	78	22 U	19 U	200 U
Aroclor-1260	UG/KG	0	0%	100	0	0	87	31 UJ	35 U	38 U	38 U	34 U	340 U
Aroclor-1268	UG/KG	0	0%	100	0	0	87	18 UJ	20 U	22 U	22 U	19 U	200 U
Pesticides													
4,4'-DDD	UG/KG	6.9	1%	3.3	1	1	85	1.8 UJ	2 U	2.1 U	2.2 U	1.9 U	19 U
4,4'-DDE	UG/KG	5.9	4%	3.3	2	3	85	1.8 UJ	2 U	2.1 U	2.2 U	1.9 U	19 U
4,4'-DDT	UG/KG	9.8	4%	3.3	2	3	85	1.8 UJ	2 U	2.1 U	2.2 U	1.9 U	19 U
Aldrin	UG/KG	0	0%	5	0	0	85	0.87 UJ	0.97 U	1.1 U	1.1 U	0.94 U	9.5 U
Alpha-BHC	UG/KG	210	6%	20	2	5	85	0.87 UJ	0.97 U	1.1 U	1.1 U	14	9.5 U
Alpha-Chlordane	UG/KG	0	0%	94	0	0	85	0.87 UJ	0.97 U	1.1 U	1.1 U	0.94 U	9.5 U
Beta-BHC	UG/KG	63	1%	36	1	1	85	0.87 UJ	0.97 U	1.1 U	1.1 U	0.94 U	**63**
Chlordane (Alpha And Gamma Isomers)	UG/KG	0	0%	94	0	0	8						
Delta-BHC	UG/KG	61	4%	40	1	3	85	0.87 UJ	0.97 U	1.1 U	1.1 U	3.3	9.5 U
Dieldrin	UG/KG	0	0%	5	0	0	85	1.8 UJ	2 U	2.1 U	2.2 U	1.9 U	19 U
Endosulfan I	UG/KG	0	0%	2400	0	0	85	0.87 UJ	0.97 U	1.1 U	1.1 U	0.94 U	9.5 U
Endosulfan II	UG/KG	0	0%	2400	0	0	85	1.8 UJ	2 U	2.1 U	2.2 U	1.9 U	19 U
Endosulfan sulfate	UG/KG	0	0%	2400	0	0	85	1.8 UJ	2 U	2.1 U	2.2 U	1.9 U	19 U
Endrin	UG/KG	0	0%	14	0	0	85	1.8 UJ	2 U	2.1 U	2.2 U	1.9 U	19 U
Endrin aldehyde	UG/KG	0	0%		0	0	85	1.8 UJ	2 U	2.1 U	2.2 U	1.9 U	19 U
Endrin ketone	UG/KG	0	0%		0	0	85	1.8 UJ	2 U	2.1 U	2.2 U	1.9 U	19 U
Gamma-BHC/Lindane	UG/KG	0	0%	100	0	0	85	0.87 UJ	0.97 U	1.1 U	1.1 U	0.94 U	9.5 U
Gamma-Chlordane	UG/KG	0	0%		0	0	77	0.87 UJ	0.97 U	1.1 U	1.1 U	0.94 U	9.5 U
Heptachlor	UG/KG	0	0%	42	0	0	85	0.87 UJ	0.97 U	1.1 U	1.1 U	0.94 U	9.5 U
Heptachlor epoxide	UG/KG	0	0%		0	0	85	0.87 UJ	0.97 U	1.1 U	1.1 U	0.94 U	9.5 U
Methoxychlor	UG/KG	0	0%		0	0	85	8.6 UJ	9.6 U	11 U	11 U	9.3 U	94 U
Toxaphene	UG/KG	0	0%		0	0	85	18 UJ	20 U	21 U	21 U	19 U	190 U
Metals													
Aluminum	MG/KG	35100	100%		0	85	85	16300 J	9190	15500 J	14400 J	10100	10700
Antimony	MG/KG	0	0%		0	0	85	0.4 UJ	0.5 UJ	0.498 UJ	0.503 UJ	0.5 UJ	0.449 U
Arsenic	MG/KG	12.2	100%	13	0	85	85	5 J	4.6	5.7 J	5.3 J	3.4	5.1
Barium	MG/KG	304	100%	350	0	85	85	116 J	95.2	110 J	107 J	79.7	80.9
Beryllium	MG/KG	1.7	96%	7.2	0	82	85	0.9 J	0.57 J	0.923 J	0.79 J	0.55 J	0.593
Cadmium	MG/KG	2.5	34%	2.5	0	29	85	0.5 UJ	0.57 U	0.622 U	0.629 U	0.55 U	0.561 UJ
Calcium	MG/KG	186000	100%		0	85	85	11600 J	91900	13400 J	48200 J	87200	85000
Chromium	MG/KG	51.2	100%	30	2	85	85	25.3 J	15.6	24.9 J	20.9 J	16	17.1
Cobalt	MG/KG	29	100%		0	85	85	15 J	7.8	11.1 J	10.2 J	8.7	12.7
Copper	MG/KG	61.4	100%	50	1	85	85	31.2 J	34.5	28 J	24 J	20.6	22.5

Table B-1C
SEAD-12 Complete Confirmatory Soil Sample Analytical Results
Compared to NYSDEC Unrestricted Use Levels
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION								SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12
LOCATION ID								S12EXPR-K-4-01	S12EXSW-I-2-01	S12EXSW-I-2-02	S12EXSW-I-2-03	S12EXSW-I-3-01	S12EXSW-I-3-01
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								S12EXPR-K-4-01	S12EXSW-I-2-01	S12EXSW-I-2-02	S12EXSW-I-2-03	S12EXSW-I-3-01	S12EXSW-I-3-05
TOP OF SAMPLE								0	0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0	0.2	0.2	0	0.2
SAMPLE DATE								7/29/2009	8/5/2009	10/7/2009	10/7/2009	8/5/2009	10/5/2009
QC CODE								SA	SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA
AREA								Pit C2	Pit C2	Pit C2	Pit C2	Pit C2	Pit C2
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**NYSDEC Unrestricted Use Level**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Cyanide	MG/KG	0	0%	27	0	0	85	0.42 UJ	0.42 U	0.42 U	0.42 U	0.42 U	0.5 U
Iron	MG/KG	56400	100%		0	85	85	33200 J	19600	28100 J	22900 J	18700	19700
Lead	MG/KG	33.3	100%	63	0	85	85	14.6 J	9.9	14 J	10.4 J	8.9	9.3
Magnesium	MG/KG	74400	100%		0	85	85	6710 J	13600	5890 J	9620 J	13100	14700
Manganese	MG/KG	1650	100%	1600	2	85	85	923 J	337	451 J	738 J	446	423
Mercury	MG/KG	0.05	95%	0.18	0	81	85	0.04 J	0.026 J	0.042	0.033 J	0.02 J	0.031 UJ
Nickel	MG/KG	75	100%	30	32	85	85	**48** J	27.1 J	**37.6** J	**30.5** J	26.9 J	27.7
Potassium	MG/KG	5330	100%		0	85	85	1470 J	1650 J	1630 J	2400 J	1630 J	1770
Selenium	MG/KG	2	18%	3.9	0	15	85	1.3 J	1.1 U	0.522 J	0.525 J	1.1 U	1.1 UJ
Silver	MG/KG	0	0%	2	0	0	85	0.0257 UJ	0.3 U	0.032 UJ	0.032 UJ	0.3 U	0.029 U
Sodium	MG/KG	390	100%		0	85	85	46 J	130	51.6 J	125 J	140	143
Thallium	MG/KG	0	0%		0	0	85	0.176 UJ	0.3 U	0.657 UJ	0.664 UJ	0.2 U	0.198 U
Vanadium	MG/KG	68	100%		0	85	85	26.7 J	21.9	26.4 J	24.8 J	17.8	19.5
Zinc	MG/KG	154	100%	109	2	85	85	67 J	48.6 J	62.4 J	57.6 J	49.4 J	64.6
TCLP													
TCLP 1,1-Dichloroethene	UG/L	0	0%		0	0	3			5.9 U	5.9 U		
TCLP 1,2-Dichloroethane	UG/L	0	0%		0	0	3			4.2 U	4.2 U		
TCLP Benzene	UG/L	0	0%		0	0	3			4.2 U	4.2 U		
TCLP Carbon tetrachloride	UG/L	0	0%		0	0	3			3.6 U	3.6 U		
TCLP Chlorobenzene	UG/L	0	0%		0	0	3			4.4 U	4.4 U		
TCLP Chloroform	UG/L	0	0%		0	0	3			1.8 U	1.8 U		
TCLP Methyl ethyl ketone	UG/L	0	0%		0	0	3			10 U	10 U		
TCLP Tetrachloroethene	UG/L	0	0%		0	0	3			4.3 U	4.3 U		
TCLP Trichloroethene	UG/L	0	0%		0	0	3			6.3 U	6.3 U		
TCLP Vinyl chloride	UG/L	0	0%		0	0	3			5.2 U	5.2 U		

Notes:
(1) The dataset of samples consists of the Inplace samples representing current site conditions
The overburden C1 samples were not included in this dataset.
(2) NYSDEC's Unrestricted Use Soil Cleanup Objective, 6 NYCRR Part 375-6.8(a).
(3) Sample/Duplicate pairs are evaluated as separate and discrete samples in this table
(4) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected; the associated reporting limit is approximate
R = the analytical result was rejected during data validation

Table B-1C
SEAD-12 Complete Confirmatory Soil Sample Analytical Results
Compared to NYSDEC Unrestricted Use Levels
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION								SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12
LOCATION ID								S12EXSW-I-3-02	S12EXSW-I-3-03	S12EXSW-I-3-04	S12EXSW-I-4-01	S12EXSW-J-2-01	S12EXSW-J-2-02
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								S12EXSW-I-3-02	S12EXSW-I-3-03	S12EXSW-I-3-04	S12EXSW-I-4-01	S12EXSW-J-2-01	S12EXSW-J-2-02
TOP OF SAMPLE								0	0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0	0.2
SAMPLE DATE								10/5/2009	10/5/2009	10/15/2009	10/15/2009	8/4/2009	10/7/2009
QC CODE								SA	DU	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA
AREA								Pit C2	Pit C2	Pit C2	Pit C2	Pit C2	Pit C2
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**NYSDEC Unrestricted Use Level**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Volatile Organic Compounds													
1,1,1-Trichloroethane	UG/KG	0	0%	680	0	0	85	0.24 U	0.24 U	1.1 U	1.1 U	0.24 U	0.25 U
1,1,2,2-Tetrachloroethane	UG/KG	0	0%		0	0	85	0.46 U	0.46 U	0.55 U	0.57 U	0.45 U	0.48 U
1,1,2-Trichloroethane	UG/KG	0	0%		0	0	85	0.66 U	0.67 U	0.55 U	0.57 U	0.65 U	0.69 U
1,1-Dichloroethane	UG/KG	0	0%	270	0	0	85	0.52 U	0.53 U	1.1 U	1.1 U	0.51 U	0.55 U
1,1-Dichloroethene	UG/KG	0	0%	330	0	0	85	0.42 U	0.43 U	1.1 U	1.1 U	0.42 U	0.44 U
1,2-Dichloroethane	UG/KG	0	0%	20	0	0	85	0.4 U	0.4 U	1.1 U	1.1 U	0.39 U	0.42 U
1,2-Dichloropropane	UG/KG	0	0%		0	0	85	0.45 U	0.45 U	1.1 U	1.1 U	0.44 U	0.46 U
Acetone	UG/KG	9.6	13%	50	0	11	85	1.7 UJ	1.8 UJ	22 U	23 U	22 UJ	1.8 UJ
Benzene	UG/KG	0	0%	60	0	0	85	0.52 U	0.53 U	0.55 U	0.57 U	0.51 U	0.55 U
Bromodichloromethane	UG/KG	0	0%		0	0	85	0.58 U	0.59 U	1.1 U	1.1 U	0.57 U	0.61 U
Bromoform	UG/KG	0	0%		0	0	85	0.48 U	0.48 U	1.1 U	1.1 U	0.47 U	0.5 U
Carbon disulfide	UG/KG	2.5	2%		0	2	85	0.58 U	0.59 U	0.55 U	0.57 U	0.57 U	0.61 U
Carbon tetrachloride	UG/KG	0	0%	760	0	0	85	0.51 U	0.52 U	1.1 U	1.1 U	0.5 U	0.54 U
Chlorobenzene	UG/KG	0	0%	1100	0	0	85	0.55 U	0.55 U	1.1 U	1.1 U	0.54 U	0.57 U
Chlorodibromomethane	UG/KG	0	0%		0	0	85	0.38 U	0.38 U	0.55 U	0.57 U	0.37 U	0.39 U
Chloroethane	UG/KG	0	0%		0	0	85	0.55 U	0.55 U	1.6 U	1.7 U	0.54 U	0.57 U
Chloroform	UG/KG	0	0%	370	0	0	85	0.49 U	0.49 U	0.55 U	0.57 U	0.48 U	0.51 U
Cis-1,2-Dichloroethene	UG/KG	0.45	1%	250	0	1	85	0.35 U	0.36 U	0.55 U	0.57 U	0.35 U	0.37 U
Cis-1,3-Dichloropropene	UG/KG	0	0%		0	0	85	0.39 U	0.39 U	0.55 U	0.57 U	0.38 U	0.41 U
Ethyl benzene	UG/KG	2.7	1%	1000	0	1	85	1 U	1.1 U	0.55 U	0.57 U	0.98 U	1.1 U
Meta/Para Xylene	UG/KG	1.3	4%	260	0	3	85	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
Methyl bromide	UG/KG	0	0%		0	0	85	0.89 U	0.89 U	1.6 U	1.7 U	0.87 UJ	0.92 UJ
Methyl butyl ketone	UG/KG	0	0%		0	0	85	0.81 UJ	0.81 U	2.2 U	2.3 U	0.79 U	0.84 U
Methyl chloride	UG/KG	0	0%		0	0	85	0.65 U	0.65 U	0.55 U	0.57 U	0.64 U	0.68 U
Methyl ethyl ketone	UG/KG	1.6	5%	120	0	4	85	0.86 U	0.87 U	22 U	23 U	0.85 U	0.9 U
Methyl isobutyl ketone	UG/KG	0	0%		0	0	85	0.74 UJ	0.75 UJ	2.2 U	2.3 U	0.73 U	0.77 U
Methylene chloride	UG/KG	2.8	24%	50	0	20	85	0.43 U	0.44 U	0.55 U	0.57 U	0.59 J	1.9 J
Ortho Xylene	UG/KG	0	0%	260	0	0	85	0.72 U	0.72 U	0.55 U	0.57 U	0.7 U	0.75 U
Styrene	UG/KG	0.61	4%		0	3	85	0.51 U	0.52 U	0.55 U	0.57 U	0.5 U	0.54 U
Tetrachloroethene	UG/KG	0	0%	1300	0	0	85	0.56 U	0.56 U	1.1 U	1.1 U	0.55 U	0.58 U
Toluene	UG/KG	3.3	48%	700	0	41	85	0.37 U	0.37 U	0.55 U	0.57 U	1.6 J	0.38 U
Total Xylenes	UG/KG	0	0%	260	0	0	8			1.6 U	1.7 U		
Trans-1,2-Dichloroethene	UG/KG	0	0%	190	0	0	85	0.59 U	0.6 U	0.55 U	0.57 U	0.58 U	0.62 U
Trans-1,3-Dichloropropene	UG/KG	0	0%		0	0	85	0.42 U	0.43 U	0.55 UJ	0.57 UJ	0.42 U	0.44 U
Trichloroethene	UG/KG	1.2	16%	470	0	14	85	0.46 U	0.46 U	1.1 U	1.1 U	0.45 U	0.48 U
Vinyl chloride	UG/KG	0	0%	20	0	0	85	0.54 U	0.54 U	1.1 U	1.1 U	0.53 U	0.56 U
Semivolatile Organic Compounds													
1,2,4-Trichlorobenzene	UG/KG	0	0%		0	0	85	190 U	190 U	15 U	15 U	36 U	38 U
1,2-Dichlorobenzene	UG/KG	0	0%	1100	0	0	85	170 U	170 U	15 U	15 U	33 U	35 U
1,3-Dichlorobenzene	UG/KG	0	0%	2400	0	0	85	190 U	190 U	15 U	15 U	36 U	38 U
1,4-Dichlorobenzene	UG/KG	0	0%	1800	0	0	85	170 U	170 U	15 U	15 U	33 U	35 U
2,4,5-Trichlorophenol	UG/KG	0	0%		0	0	85	260 U	260 U	44 U	46 U	50 U	54 U
2,4,6-Trichlorophenol	UG/KG	0	0%		0	0	85	280 U	280 U	44 U	46 U	55 U	58 U
2,4-Dichlorophenol	UG/KG	0	0%		0	0	85	230 U	230 U	15 U	15 U	44 U	46 U
2,4-Dimethylphenol	UG/KG	0	0%		0	0	85	210 U	210 U	44 U	46 U	40 U	43 U
2,4-Dinitrophenol	UG/KG	0	0%		0	0	85	5500 U	5600 U	720 U	750 U	1100 UJ	1200 U
2,4-Dinitrotoluene	UG/KG	0	0%		0	0	85	300 U	310 U	15 U	15 U	59 U	63 U
2,6-Dinitrotoluene	UG/KG	0	0%		0	0	85	230 U	230 U	15 U	15 U	45 U	48 U

Table B-1C
SEAD-12 Complete Confirmatory Soil Sample Analytical Results
Compared to NYSDEC Unrestricted Use Levels
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION								SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12
LOCATION ID								S12EXSW-I-3-02	S12EXSW-I-3-03	S12EXSW-I-3-04	S12EXSW-I-4-01	S12EXSW-J-2-01	S12EXSW-J-2-02
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								S12EXSW-I-3-02	S12EXSW-I-3-03	S12EXSW-I-3-04	S12EXSW-I-4-01	S12EXSW-J-2-01	S12EXSW-J-2-02
TOP OF SAMPLE								0	0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0	0.2
SAMPLE DATE								10/5/2009	10/5/2009	10/15/2009	10/15/2009	8/4/2009	10/7/2009
QC CODE								SA	DU	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA
AREA								Pit C2	Pit C2	Pit C2	Pit C2	Pit C2	Pit C2
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**NYSDEC Unrestricted Use Level**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
2-Chloronaphthalene	UG/KG	0	0%		0	0	85	210 U	210 U	15 U	15 U	40 U	43 U
2-Chlorophenol	UG/KG	0	0%		0	0	85	220 U	220 U	15 U	15 U	43 U	45 U
2-Methylnaphthalene	UG/KG	0	0%		0	0	85	190 U	190 U	15 U	15 U	36 U	38 U
2-Methylphenol	UG/KG	0	0%	330	0	0	85	160 U	160 U	15 U	15 U	32 U	33 U
2-Nitroaniline	UG/KG	0	0%		0	0	85	6500 U	6600 U	15 U	15 U	1300 U	1400 U
2-Nitrophenol	UG/KG	0	0%		0	0	85	160 U	160 U	15 U	15 U	30 U	32 U
3,3'-Dichlorobenzidine	UG/KG	0	0%		0	0	85	220 U	220 U	44 U	46 U	43 U	45 U
3-Nitroaniline	UG/KG	0	0%		0	0	85	4600 U	4600 U	44 U	46 U	890 U	950 U
4,6-Dinitro-2-methylphenol	UG/KG	0	0%		0	0	85	8300 U	8300 U	180 U	190 U	1700 U	1800 U
4-Bromophenyl phenyl ether	UG/KG	0	0%		0	0	85	230 U	230 U	15 U	15 U	45 U	48 U
4-Chloro-3-methylphenol	UG/KG	0	0%		0	0	85	220 U	220 U	15 U	15 U	43 U	45 U
4-Chloroaniline	UG/KG	0	0%		0	0	85	210 U	220 U	15 U	15 U	42 U	44 U
4-Chlorophenyl phenyl ether	UG/KG	0	0%		0	0	85	230 U	230 U	15 U	15 U	44 U	46 U
4-Methylphenol	UG/KG	0	0%	330	0	0	8			44 U	46 U		
4-Nitroaniline	UG/KG	0	0%		0	0	85	6700 U	6800 U	15 U	15 U	1400 U	1400 U
4-Nitrophenol	UG/KG	0	0%		0	0	85	6000 U	6000 U	180 U	190 U	1200 U	1300 U
Acenaphthene	UG/KG	0	0%	20000	0	0	85	230 U	230 U	15 U	15 U	44 U	46 U
Acenaphthylene	UG/KG	0	0%	100000	0	0	85	210 U	210 U	15 U	15 U	40 U	43 U
Anthracene	UG/KG	0	0%	100000	0	0	85	210 U	220 U	15 U	15 U	42 U	44 U
Benzo(a)anthracene	UG/KG	0	0%	1000	0	0	85	230 U	230 U	15 U	15 U	44 U	46 U
Benzo(a)pyrene	UG/KG	0	0%	1000	0	0	85	190 U	190 U	15 U	15 U	37 U	39 U
Benzo(b)fluoranthene	UG/KG	0	0%	1000	0	0	85	270 U	270 U	15 U	15 U	53 U	56 U
Benzo(ghi)perylene	UG/KG	0	0%	100000	0	0	85	510 U	510 U	44 U	46 U	99 U	110 U
Benzo(k)fluoranthene	UG/KG	0	0%	800	0	0	85	280 U	280 U	15 U	15 U	54 U	57 U
Benzyl alcohol	UG/KG	140	38%		0	32	85	130 U	140 U	15 U	15 U	42 J	390 U
Bis(2-Chloroethoxy)methane	UG/KG	0	0%		0	0	85	280 U	280 U	15 U	15 U	55 U	58 U
Bis(2-Chloroethyl)ether	UG/KG	0	0%		0	0	85	220 U	220 U	15 U	15 U	43 U	45 U
Bis(2-Chloroisopropyl)ether	UG/KG	0	0%		0	0	85	260 U	270 U	15 U	15 U	51 U	55 U
Bis(2-Ethylhexyl)phthalate	UG/KG	120	11%		0	9	85	320 U	320 U	15 U	15 U	61 U	65 U
Butylbenzylphthalate	UG/KG	0	0%		0	0	85	230 U	230 U	15 U	15 U	45 U	48 U
Carbazole	UG/KG	0	0%		0	0	85	310 U	310 U	15 U	15 U	60 U	64 U
Chrysene	UG/KG	0	0%	1000	0	0	85	230 U	230 U	15 U	15 U	45 U	48 U
Di-n-butylphthalate	UG/KG	0	0%		0	0	85	770 U	770 U	15 U	15 U	150 U	160 U
Di-n-octylphthalate	UG/KG	0	0%		0	0	85	190 U	190 U	15 U	15 U	37 U	39 U
Dibenz(a,h)anthracene	UG/KG	0	0%	330	0	0	85	220 U	220 U	44 U	46 U	43 U	45 U
Dibenzofuran	UG/KG	0	0%	7000	0	0	85	210 U	210 U	15 U	15 U	40 U	43 U
Diethyl phthalate	UG/KG	0	0%		0	0	85	230 U	230 U	15 U	15 U	370 U	46 U
Dimethylphthalate	UG/KG	86	7%		0	6	85	230 U	230 U	58 J	86 J	44 U	46 U
Fluoranthene	UG/KG	74	2%	100000	0	2	85	230 U	230 U	15 U	15 U	44 U	46 U
Fluorene	UG/KG	0	0%	30000	0	0	85	190 U	190 U	15 U	15 U	36 U	38 U
Hexachlorobenzene	UG/KG	0	0%	330	0	0	85	210 U	220 U	15 U	15 U	42 U	44 U
Hexachlorobutadiene	UG/KG	0	0%		0	0	85	220 U	220 U	44 U	46 U	43 U	45 U
Hexachlorocyclopentadiene	UG/KG	0	0%		0	0	85	200 U	200 U	360 U	380 U	39 U	42 U
Hexachloroethane	UG/KG	0	0%		0	0	85	180 U	180 U	44 U	46 U	35 U	37 U
Indeno(1,2,3-cd)pyrene	UG/KG	0	0%	500	0	0	85	210 U	210 U	44 U	46 U	40 U	43 U
Isophorone	UG/KG	0	0%		0	0	85	230 U	230 U	15 U	15 U	44 U	46 U
N-Nitrosodimethylamine	UG/KG	0	0%		0	0	85	320 U	320 U	44 U	46 U	63 U	66 U
N-Nitrosodiphenylamine	UG/KG	0	0%		0	0	85	250 U	250 U	15 U	15 U	48 U	51 U
N-Nitrosodipropylamine	UG/KG	0	0%		0	0	85	250 U	250 U	15 U	15 U	48 U	51 U

Table B-1C
SEAD-12 Complete Confirmatory Soil Sample Analytical Results
Compared to NYSDEC Unrestricted Use Levels
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION							SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12
LOCATION ID							S12EXSW-I-3-02	S12EXSW-I-3-03	S12EXSW-I-3-04	S12EXSW-I-4-01	S12EXSW-J-2-01	S12EXSW-J-2-02
MATRIX							SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID							S12EXSW-I-3-02	S12EXSW-I-3-03	S12EXSW-I-3-04	S12EXSW-I-4-01	S12EXSW-J-2-01	S12EXSW-J-2-02
TOP OF SAMPLE							0	0	0	0	0	0
BOTTOM OF SAMPLE							0.2	0.2	0.2	0.2	0	0.2
SAMPLE DATE							10/5/2009	10/5/2009	10/15/2009	10/15/2009	8/4/2009	10/7/2009
QC CODE							SA	DU	SA	SA	SA	SA
STUDY ID							RA	RA	RA	RA	RA	RA
AREA							Pit C2	Pit C2	Pit C2	Pit C2	Pit C2	Pit C2
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**NYSDEC Unrestricted Use Level**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Naphthalene	UG/KG	0	0%	12000	0	0	85	170 U	170 U	15 U	15 U	33 U	35 U
Nitrobenzene	UG/KG	0	0%		0	0	85	240 U	240 U	15 U	15 U	47 U	50 U
Pentachlorophenol	UG/KG	0	0%	800	0	0	85	6300 U	6300 U	360 U	380 U	1300 U	1300 U
Phenanthrene	UG/KG	52	2%	100000	0	2	85	230 U	230 U	15 U	15 U	45 U	48 U
Phenol	UG/KG	0	0%	330	0	0	85	220 U	220 U	15 U	15 U	43 U	45 U
Pyrene	UG/KG	64	2%	100000	0	2	85	200 U	200 U	15 U	15 U	39 U	42 U
PCBs													
Aroclor-1016	UG/KG	0	0%	100	0	0	87	200 U	200 U	2.4 U	2.5 U	19 U	21 U
Aroclor-1221	UG/KG	0	0%	100	0	0	87	430 U	440 U	2.43 U	2.53 U	43 U	45 U
Aroclor-1232	UG/KG	0	0%	100	0	0	87	200 U	200 U	1.48 U	1.54 U	19 U	21 U
Aroclor-1242	UG/KG	0	0%	100	0	0	87	300 U	300 U	2 U	2.09 U	29 U	31 U
Aroclor-1248	UG/KG	0	0%	100	0	0	87	200 U	200 U	3.91 U	4.08 U	19 U	21 U
Aroclor-1254	UG/KG	78	5%	100	0	4	87	200 U	200 U	5.19 U	5.41 U	19 U	21 U
Aroclor-1260	UG/KG	0	0%	100	0	0	87	340 U	350 U	2.19 U	2.28 U	34 U	36 U
Aroclor-1268	UG/KG	0	0%	100	0	0	87	200 U	200 U	3.22 U	3.36 U	19 U	21 U
Pesticides													
4,4'-DDD	UG/KG	6.9	1%	3.3	1	1	85	19 U	20 U	0.38 U	0.4 U	1.9 U	2 U
4,4'-DDE	UG/KG	5.9	4%	3.3	2	3	85	19 U	20 U	0.4 U	0.42 U	1.9 U	2 U
4,4'-DDT	UG/KG	9.8	4%	3.3	2	3	85	19 U	20 U	0.47 U	0.49 U	1.9 U	2 U
Aldrin	UG/KG	0	0%	5	0	0	85	9.5 U	9.6 U	0.44 U	0.46 U	0.94 U	0.99 U
Alpha-BHC	UG/KG	210	6%	20	2	5	85	**210**	**130**	0.36 U	0.38 U	0.94 U	0.99 U
Alpha-Chlordane	UG/KG	0	0%	94	0	0	85	9.5 U	9.6 U	0.38 U	0.4 U	0.94 U	0.99 U
Beta-BHC	UG/KG	63	1%	36	1	1	85	9.5 U	9.6 U	0.92 U	0.96 U	0.94 U	0.99 U
Chlordane (Alpha And Gamma Isomers)	UG/KG	0	0%	94	0	0	8			0.46 U	0.48 U		
Delta-BHC	UG/KG	61	4%	40	1	3	85	**61** J	38 J	0.5 U	0.53 U	0.94 U	0.99 U
Dieldrin	UG/KG	0	0%	5	0	0	85	19 U	20 U	0.46 U	0.48 U	1.9 U	2 U
Endosulfan I	UG/KG	0	0%	2400	0	0	85	9.5 U	9.6 U	0.34 U	0.35 U	0.94 U	0.99 U
Endosulfan II	UG/KG	0	0%	2400	0	0	85	19 U	20 U	0.4 U	0.42 U	1.9 U	2 U
Endosulfan sulfate	UG/KG	0	0%	2400	0	0	85	19 U	20 U	0.68 U	0.71 U	1.9 U	2 U
Endrin	UG/KG	0	0%	14	0	0	85	19 U	20 U	0.71 U	0.74 U	1.9 U	2 U
Endrin aldehyde	UG/KG	0	0%		0	0	85	19 U	20 U	0.51 U	0.54 U	1.9 U	2 U
Endrin ketone	UG/KG	0	0%		0	0	85	19 U	20 U	1.1 U	1.1 U	1.9 U	2 U
Gamma-BHC/Lindane	UG/KG	0	0%	100	0	0	85	9.5 U	9.6 U	0.4 U	0.42 U	0.94 U	0.99 U
Gamma-Chlordane	UG/KG	0	0%		0	0	77	9.5 U	9.6 U			0.94 U	0.99 U
Heptachlor	UG/KG	0	0%	42	0	0	85	9.5 U	9.6 U	0.56 U	0.58 U	0.94 U	0.99 U
Heptachlor epoxide	UG/KG	0	0%		0	0	85	9.5 U	9.6 U	0.49 U	0.51 U	0.94 U	0.99 U
Methoxychlor	UG/KG	0	0%		0	0	85	95 U	95 U	0.48 U	0.5 U	9.3 U	9.9 U
Toxaphene	UG/KG	0	0%		0	0	85	190 U	190 U	7.3 U	7.6 U	19 U	20 U
Metals													
Aluminum	MG/KG	35100	100%		0	85	85	10100	9840	5300 J	8900 J	9050	12500 J
Antimony	MG/KG	0	0%		0	0	85	0.451 U	0.447 U	0.33 UJ	0.34 UJ	0.5 UJ	0.471 UJ
Arsenic	MG/KG	12.2	100%	13	0	85	85	5.9	6.1	3.2 J	3.7 J	3.5	6.1 J
Barium	MG/KG	304	100%	350	0	85	85	80.2	79.7	53 J	78 J	81.9	88.6 J
Beryllium	MG/KG	1.7	96%	7.2	0	82	85	0.562 J	0.556 J	0.25 J	0.45 J	0.49 J	0.665 J
Cadmium	MG/KG	2.5	34%	2.5	0	29	85	0.564 UJ	0.664	0.11 UJ	0.12 J	0.54 U	0.589 U
Calcium	MG/KG	186000	100%		0	85	85	75600	87500	78000 J	89000 J	80100	51700 J
Chromium	MG/KG	51.2	100%	30	2	85	85	18	16.3	8.1 J	15 J	14.5	19.4 J
Cobalt	MG/KG	29	100%		0	85	85	11.4	7.8	4.3 J	7.8 J	9.3	8.6 J
Copper	MG/KG	61.4	100%	50	1	85	85	28.7	23.2	18 J	22 J	20.7	32.1 J

Table B-1C
SEAD-12 Complete Confirmatory Soil Sample Analytical Results
Compared to NYSDEC Unrestricted Use Levels
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION								SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12
LOCATION ID								S12EXSW-I-3-02	S12EXSW-I-3-03	S12EXSW-I-3-04	S12EXSW-I-4-01	S12EXSW-J-2-01	S12EXSW-J-2-02
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								S12EXSW-I-3-02	S12EXSW-I-3-03	S12EXSW-I-3-04	S12EXSW-I-4-01	S12EXSW-J-2-01	S12EXSW-J-2-02
TOP OF SAMPLE								0	0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0	0.2
SAMPLE DATE								10/5/2009	10/5/2009	10/15/2009	10/15/2009	8/4/2009	10/7/2009
QC CODE								SA	DU	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA
AREA								Pit C2	Pit C2	Pit C2	Pit C2	Pit C2	Pit C2
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**NYSDEC Unrestricted Use Level**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Cyanide	MG/KG	0	0%	27	0	0	85	0.42 U	0.5 U	0.2 UJ	0.21 UJ	0.5 U	0.42 U
Iron	MG/KG	56400	100%		0	85	85	20300	18900	12000 J	19000 J	18400	19800 J
Lead	MG/KG	33.3	100%	63	0	85	85	11.3	11.6	5.4 J	7.9 J	8.1	10.4 J
Magnesium	MG/KG	74400	100%		0	85	85	12900	21200	20000 J	16000 J	20200	12500 J
Manganese	MG/KG	1650	100%	1600	2	85	85	471	539	380 J	370 J	432	367 J
Mercury	MG/KG	0.05	95%	0.18	0	81	85	0.033 UJ	0.032 UJ	0.01 J	0.013 J	0.022 J	0.017 J
Nickel	MG/KG	75	100%	30	32	85	85	29.4	25.1	11 J	28 J	26.5 J	**31.7** J
Potassium	MG/KG	5330	100%		0	85	85	1700	1730	1100 J	1300 J	1700 J	1580 J
Selenium	MG/KG	2	18%	3.9	0	15	85	0.195 U	0.193 U	0.27 UJ	0.29 UJ	1.1 U	0.204 UJ
Silver	MG/KG	0	0%	2	0	0	85	0.029 U	0.029 U	0.22 UJ	0.23 UJ	0.3 U	0.03 UJ
Sodium	MG/KG	390	100%		0	85	85	131	151	77 J	120 J	140	84.3 J
Thallium	MG/KG	0	0%		0	0	85	0.199 U	0.197 U	0.55 UJ	0.57 UJ	0.2 U	0.207 UJ
Vanadium	MG/KG	68	100%		0	85	85	20	19.2	12 J	16 J	16.8	22.6 J
Zinc	MG/KG	154	100%	109	2	85	85	50.9	51.9	35 J	56 J	98.8 J	58.8 J
TCLP													
TCLP 1,1-Dichloroethene	UG/L	0	0%		0	0	3						5.9 U
TCLP 1,2-Dichloroethane	UG/L	0	0%		0	0	3						4.2 U
TCLP Benzene	UG/L	0	0%		0	0	3						4.2 U
TCLP Carbon tetrachloride	UG/L	0	0%		0	0	3						3.6 U
TCLP Chlorobenzene	UG/L	0	0%		0	0	3						4.4 U
TCLP Chloroform	UG/L	0	0%		0	0	3						1.8 U
TCLP Methyl ethyl ketone	UG/L	0	0%		0	0	3						10 U
TCLP Tetrachloroethene	UG/L	0	0%		0	0	3						4.3 U
TCLP Trichloroethene	UG/L	0	0%		0	0	3						6.3 U
TCLP Vinyl chloride	UG/L	0	0%		0	0	3						5.2 U

Notes:
(1) The dataset of samples consists of the Inplace samples representing current site conditions
The overburden C1 samples were not included in this dataset.
(2) NYSDEC's Unrestricted Use Soil Cleanup Objective, 6 NYCRR Part 375-6.8(a).
(3) Sample/Duplicate pairs are evaluated as separate and discrete samples in this table
(4) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected; the associated reporting limit is approximate
R = the analytical result was rejected during data validation

Table B-1C
SEAD-12 Complete Confirmatory Soil Sample Analytical Results
Compared to NYSDEC Unrestricted Use Levels
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION								SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12
LOCATION ID								S12EXSW-J-3-01	S12EXSW-J-3-02	S12EXSW-J-4-01	S12EXSW-J-4-02	S12EXSW-J-4-03	S12EXSW-J-4-04
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								S12EXSW-J-3-01	S12EXSW-J-3-02	S12EXSW-J-4-01	S12EXSW-J-4-02	S12EXSW-J-4-03	S12EXSW-J-4-04
TOP OF SAMPLE								0	0	0	0	0	0
BOTTOM OF SAMPLE								0	0	0	0	0	0.2
SAMPLE DATE								8/4/2009	8/4/2009	8/4/2009	8/4/2009	8/4/2009	10/15/2009
QC CODE								SA	SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA
AREA								Pit C2	Pit C2	Pit C2	Pit C2	Pit C2	Pit C2
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**NYSDEC Unrestricted Use Level**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Volatile Organic Compounds													
1,1,1-Trichloroethane	UG/KG	0	0%	680	0	0	85	0.26 U	0.24 U	0.24 U	0.24 U	0.23 U	1.1 U
1,1,2,2-Tetrachloroethane	UG/KG	0	0%		0	0	85	0.49 U	0.45 U	0.46 U	0.45 U	0.44 U	0.54 U
1,1,2-Trichloroethane	UG/KG	0	0%		0	0	85	0.71 U	0.65 U	0.67 U	0.65 U	0.63 U	0.54 U
1,1-Dichloroethane	UG/KG	0	0%	270	0	0	85	0.56 U	0.51 U	0.53 U	0.52 U	0.5 U	1.1 U
1,1-Dichloroethene	UG/KG	0	0%	330	0	0	85	0.45 U	0.41 U	0.43 U	0.42 U	0.4 U	1.1 U
1,2-Dichloroethane	UG/KG	0	0%	20	0	0	85	0.43 U	0.39 U	0.4 U	0.39 U	0.38 U	1.1 U
1,2-Dichloropropane	UG/KG	0	0%		0	0	85	0.48 U	0.44 U	0.45 U	0.44 U	0.43 U	1.1 U
Acetone	UG/KG	9.6	13%	50	0	11	85	24 UJ	22 UJ	23 UJ	1.7 UJ	22 UJ	22 U
Benzene	UG/KG	0	0%	60	0	0	85	0.56 U	0.51 U	0.53 U	0.52 U	0.5 U	0.54 U
Bromodichloromethane	UG/KG	0	0%		0	0	85	0.62 U	0.57 U	0.59 U	0.57 U	0.56 U	1.1 U
Bromoform	UG/KG	0	0%		0	0	85	0.52 U	0.47 U	0.48 U	0.47 U	0.46 U	1.1 U
Carbon disulfide	UG/KG	2.5	2%		0	2	85	0.62 U	0.57 U	0.59 U	0.57 U	0.56 U	0.54 U
Carbon tetrachloride	UG/KG	0	0%	760	0	0	85	0.55 U	0.5 U	0.52 U	0.51 U	0.49 U	1.1 U
Chlorobenzene	UG/KG	0	0%	1100	0	0	85	0.59 U	0.54 U	0.55 U	0.54 U	0.52 U	1.1 U
Chlorodibromomethane	UG/KG	0	0%		0	0	85	0.41 U	0.37 U	0.38 U	0.37 U	0.36 U	0.54 U
Chloroethane	UG/KG	0	0%		0	0	85	0.59 U	0.54 U	0.55 U	0.54 U	0.52 U	1.6 U
Chloroform	UG/KG	0	0%	370	0	0	85	0.53 U	0.48 U	0.5 U	0.48 U	0.47 U	0.54 U
Cis-1,2-Dichloroethene	UG/KG	0.45	1%	250	0	1	85	0.38 U	0.35 U	0.36 U	0.35 U	0.34 U	0.54 U
Cis-1,3-Dichloropropene	UG/KG	0	0%		0	0	85	0.42 U	0.38 U	0.39 U	0.38 U	0.37 U	0.54 U
Ethyl benzene	UG/KG	2.7	1%	1000	0	1	85	1.1 U	0.98 U	1.1 U	0.98 U	1 U	0.54 U
Meta/Para Xylene	UG/KG	1.3	4%	260	0	3	85	1.2 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
Methyl bromide	UG/KG	0	0%		0	0	85	0.95 UJ	0.87 UJ	0.89 UJ	0.87 UJ	0.85 UJ	1.6 U
Methyl butyl ketone	UG/KG	0	0%		0	0	85	0.87 U	0.79 U	0.81 U	0.8 U	0.77 U	2.2 U
Methyl chloride	UG/KG	0	0%		0	0	85	0.7 U	0.64 U	0.65 U	0.64 U	0.62 U	0.54 U
Methyl ethyl ketone	UG/KG	1.6	5%	120	0	4	85	0.93 U	0.85 U	0.87 U	0.85 U	0.83 U	22 U
Methyl isobutyl ketone	UG/KG	0	0%		0	0	85	0.79 U	0.72 U	0.75 U	0.73 U	0.71 U	2.2 U
Methylene chloride	UG/KG	2.8	24%	50	0	20	85	0.66 J	5.5 U	0.58 J	5.6 U	5.4 U	0.54 U
Ortho Xylene	UG/KG	0	0%	260	0	0	85	0.77 U	0.7 U	0.72 U	0.71 U	0.69 U	0.54 U
Styrene	UG/KG	0.61	4%		0	3	85	0.55 U	0.5 U	0.52 U	0.51 U	0.49 U	0.61 J
Tetrachloroethene	UG/KG	0	0%	1300	0	0	85	0.6 U	0.55 U	0.56 U	0.55 U	0.53 U	1.1 U
Toluene	UG/KG	3.3	48%	700	0	41	85	0.98 J	0.46 J	0.66 J	0.58 J	1.1 J	0.54 U
Total Xylenes	UG/KG	0	0%	260	0	0	8						1.6 U
Trans-1,2-Dichloroethene	UG/KG	0	0%	190	0	0	85	0.64 U	0.58 U	0.6 U	0.58 U	0.57 U	0.54 U
Trans-1,3-Dichloropropene	UG/KG	0	0%		0	0	85	0.45 U	0.41 U	0.43 U	0.42 U	0.4 U	0.54 UJ
Trichloroethene	UG/KG	1.2	16%	470	0	14	85	0.49 U	0.45 U	0.46 U	0.45 U	0.44 U	1.1 U
Vinyl chloride	UG/KG	0	0%	20	0	0	85	0.58 U	0.52 U	0.54 U	0.53 U	0.51 U	1.1 U
Semivolatile Organic Compounds													
1,2,4-Trichlorobenzene	UG/KG	0	0%		0	0	85	39 U	36 U	37 U	36 U	35 U	15 U
1,2-Dichlorobenzene	UG/KG	0	0%	1100	0	0	85	36 U	33 U	34 U	33 U	32 U	15 U
1,3-Dichlorobenzene	UG/KG	0	0%	2400	0	0	85	39 U	36 U	37 U	36 U	35 U	15 U
1,4-Dichlorobenzene	UG/KG	0	0%	1800	0	0	85	36 U	33 U	34 U	33 U	32 U	15 U
2,4,5-Trichlorophenol	UG/KG	0	0%		0	0	85	55 U	50 U	52 U	51 U	49 U	45 U
2,4,6-Trichlorophenol	UG/KG	0	0%		0	0	85	60 U	55 U	56 U	55 U	53 U	45 U
2,4-Dichlorophenol	UG/KG	0	0%		0	0	85	48 U	44 U	45 U	44 U	43 U	15 U
2,4-Dimethylphenol	UG/KG	0	0%		0	0	85	44 U	40 U	42 U	41 U	39 U	45 U
2,4-Dinitrophenol	UG/KG	0	0%		0	0	85	1200 UJ	1100 UJ	1200 UJ	1100 UJ	1100 UJ	740 U
2,4-Dinitrotoluene	UG/KG	0	0%		0	0	85	65 U	59 U	61 U	60 U	58 U	15 U
2,6-Dinitrotoluene	UG/KG	0	0%		0	0	85	49 U	45 U	46 U	45 U	44 U	15 U

Table B-1C
SEAD-12 Complete Confirmatory Soil Sample Analytical Results
Compared to NYSDEC Unrestricted Use Levels
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION								SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12
LOCATION ID								S12EXSW-J-3-01	S12EXSW-J-3-02	S12EXSW-J-4-01	S12EXSW-J-4-02	S12EXSW-J-4-03	S12EXSW-J-4-04
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								S12EXSW-J-3-01	S12EXSW-J-3-02	S12EXSW-J-4-01	S12EXSW-J-4-02	S12EXSW-J-4-03	S12EXSW-J-4-04
TOP OF SAMPLE								0	0	0	0	0	0
BOTTOM OF SAMPLE								0	0	0	0	0	0.2
SAMPLE DATE								8/4/2009	8/4/2009	8/4/2009	8/4/2009	8/4/2009	10/15/2009
QC CODE								SA	SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA
AREA								Pit C2	Pit C2	Pit C2	Pit C2	Pit C2	Pit C2
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**NYSDEC Unrestricted Use Level**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
2-Chloronaphthalene	UG/KG	0	0%		0	0	85	44 U	40 U	42 U	41 U	39 U	15 U
2-Chlorophenol	UG/KG	0	0%		0	0	85	47 U	43 U	44 U	43 U	42 U	15 U
2-Methylnaphthalene	UG/KG	0	0%		0	0	85	39 U	36 U	37 U	36 U	35 U	15 U
2-Methylphenol	UG/KG	0	0%	330	0	0	85	35 U	31 U	32 U	32 U	31 U	15 U
2-Nitroaniline	UG/KG	0	0%		0	0	85	1400 U	1300 U	1400 U	1300 U	1300 U	15 U
2-Nitrophenol	UG/KG	0	0%		0	0	85	33 U	30 U	31 U	31 U	30 U	15 U
3,3'-Dichlorobenzidine	UG/KG	0	0%		0	0	85	47 U	43 U	44 U	43 U	42 U	45 U
3-Nitroaniline	UG/KG	0	0%		0	0	85	980 U	890 U	920 U	890 U	870 U	45 U
4,6-Dinitro-2-methylphenol	UG/KG	0	0%		0	0	85	1800 U	1700 U	1700 U	1700 U	1600 U	190 U
4-Bromophenyl phenyl ether	UG/KG	0	0%		0	0	85	49 U	45 U	46 U	45 U	44 U	15 U
4-Chloro-3-methylphenol	UG/KG	0	0%		0	0	85	47 U	43 U	44 U	43 U	42 U	15 U
4-Chloroaniline	UG/KG	0	0%		0	0	85	45 U	41 U	43 U	42 U	40 U	15 U
4-Chlorophenyl phenyl ether	UG/KG	0	0%		0	0	85	48 U	44 U	45 U	44 U	43 U	15 U
4-Methylphenol	UG/KG	0	0%	330	0	0	8						45 U
4-Nitroaniline	UG/KG	0	0%		0	0	85	1500 U	1400 U	1400 U	1400 U	1300 U	15 U
4-Nitrophenol	UG/KG	0	0%		0	0	85	1300 U	1200 U	1200 U	1200 U	1200 U	190 U
Acenaphthene	UG/KG	0	0%	20000	0	0	85	48 U	44 U	45 U	44 U	43 U	15 U
Acenaphthylene	UG/KG	0	0%	100000	0	0	85	44 U	40 U	42 U	41 U	39 U	15 U
Anthracene	UG/KG	0	0%	100000	0	0	85	45 U	41 U	43 U	42 U	40 U	15 U
Benzo(a)anthracene	UG/KG	0	0%	1000	0	0	85	48 U	44 U	45 U	44 U	43 U	15 U
Benzo(a)pyrene	UG/KG	0	0%	1000	0	0	85	41 U	37 U	38 U	37 U	36 U	15 U
Benzo(b)fluoranthene	UG/KG	0	0%	1000	0	0	85	58 U	52 U	54 U	53 U	51 U	15 U
Benzo(ghi)perylene	UG/KG	0	0%	100000	0	0	85	110 U	99 U	110 U	100 U	97 U	45 U
Benzo(k)fluoranthene	UG/KG	0	0%	800	0	0	85	59 U	54 U	55 U	54 U	52 U	15 U
Benzyl alcohol	UG/KG	140	38%		0	32	85	50 J	26 U	50 J	49 J	95 J	15 U
Bis(2-Chloroethoxy)methane	UG/KG	0	0%		0	0	85	60 U	55 U	56 U	55 U	53 U	15 U
Bis(2-Chloroethyl)ether	UG/KG	0	0%		0	0	85	47 U	43 U	44 U	43 U	42 U	15 U
Bis(2-Chloroisopropyl)ether	UG/KG	0	0%		0	0	85	56 U	51 U	53 U	52 U	50 U	15 U
Bis(2-Ethylhexyl)phthalate	UG/KG	120	11%		0	9	85	67 U	61 U	63 U	62 U	60 U	15 U
Butylbenzylphthalate	UG/KG	0	0%		0	0	85	49 U	45 U	46 U	45 U	44 U	15 U
Carbazole	UG/KG	0	0%		0	0	85	66 U	60 U	62 U	61 U	59 U	15 U
Chrysene	UG/KG	0	0%	1000	0	0	85	49 U	45 U	46 U	45 U	44 U	15 U
Di-n-butylphthalate	UG/KG	0	0%		0	0	85	170 U	150 U	160 U	160 U	150 U	15 U
Di-n-octylphthalate	UG/KG	0	0%		0	0	85	41 U	37 U	38 U	37 U	36 U	15 U
Dibenz(a,h)anthracene	UG/KG	0	0%	330	0	0	85	47 U	43 U	44 U	43 U	42 U	45 U
Dibenzofuran	UG/KG	0	0%	7000	0	0	85	44 U	40 U	42 U	41 U	39 U	15 U
Diethyl phthalate	UG/KG	0	0%		0	0	85	48 U	44 U	45 U	44 U	43 U	15 U
Dimethylphthalate	UG/KG	86	7%		0	6	85	48 U	44 U	45 U	44 U	43 U	47 J
Fluoranthene	UG/KG	74	2%	100000	0	2	85	48 U	44 U	45 U	44 U	43 U	15 U
Fluorene	UG/KG	0	0%	30000	0	0	85	39 U	36 U	37 U	36 U	35 U	15 U
Hexachlorobenzene	UG/KG	0	0%	330	0	0	85	45 U	41 U	43 U	42 U	40 U	15 U
Hexachlorobutadiene	UG/KG	0	0%		0	0	85	47 U	43 U	44 U	43 U	42 U	45 U
Hexachlorocyclopentadiene	UG/KG	0	0%		0	0	85	43 U	39 U	40 U	39 U	38 U	370 U
Hexachloroethane	UG/KG	0	0%		0	0	85	38 U	35 U	36 U	35 U	34 U	45 U
Indeno(1,2,3-cd)pyrene	UG/KG	0	0%	500	0	0	85	44 U	40 U	42 U	41 U	39 U	45 U
Isophorone	UG/KG	0	0%		0	0	85	48 U	44 U	45 U	44 U	43 U	15 U
N-Nitrosodimethylamine	UG/KG	0	0%		0	0	85	69 U	62 U	64 U	63 U	61 U	45 U
N-Nitrosodiphenylamine	UG/KG	0	0%		0	0	85	53 U	48 U	50 U	48 U	47 U	15 U
N-Nitrosodipropylamine	UG/KG	0	0%		0	0	85	53 U	48 U	50 U	48 U	47 U	15 U

Table B-1C
SEAD-12 Complete Confirmatory Soil Sample Analytical Results
Compared to NYSDEC Unrestricted Use Levels
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION								SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12
LOCATION ID								S12EXSW-J-3-01	S12EXSW-J-3-02	S12EXSW-J-4-01	S12EXSW-J-4-02	S12EXSW-J-4-03	S12EXSW-J-4-04
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								S12EXSW-J-3-01	S12EXSW-J-3-02	S12EXSW-J-4-01	S12EXSW-J-4-02	S12EXSW-J-4-03	S12EXSW-J-4-04
TOP OF SAMPLE								0	0	0	0	0	0
BOTTOM OF SAMPLE								0	0	0	0	0	0.2
SAMPLE DATE								8/4/2009	8/4/2009	8/4/2009	8/4/2009	8/4/2009	10/15/2009
QC CODE								SA	SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA
AREA								Pit C2	Pit C2	Pit C2	Pit C2	Pit C2	Pit C2
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**NYSDEC Unrestricted Use Level**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Naphthalene	UG/KG	0	0%	12000	0	0	85	36 U	33 U	34 U	33 U	32 U	15 U
Nitrobenzene	UG/KG	0	0%		0	0	85	52 U	47 U	48 U	47 U	46 U	15 U
Pentachlorophenol	UG/KG	0	0%	800	0	0	85	1400 U	1300 U	1300 U	1300 U	1200 U	370 U
Phenanthrene	UG/KG	52	2%	100000	0	2	85	49 U	45 U	46 U	45 U	44 U	15 U
Phenol	UG/KG	0	0%	330	0	0	85	47 U	43 U	44 U	43 U	42 U	15 U
Pyrene	UG/KG	64	2%	100000	0	2	85	43 U	39 U	40 U	39 U	38 U	15 U
PCBs													
Aroclor-1016	UG/KG	0	0%	100	0	0	87	21 U	19 U	20 U	19 U	19 U	2.45 U
Aroclor-1221	UG/KG	0	0%	100	0	0	87	47 U	43 U	44 U	43 U	42 U	2.48 U
Aroclor-1232	UG/KG	0	0%	100	0	0	87	21 U	19 U	20 U	19 U	19 U	1.51 U
Aroclor-1242	UG/KG	0	0%	100	0	0	87	32 U	29 U	30 U	29 U	29 U	2.04 U
Aroclor-1248	UG/KG	0	0%	100	0	0	87	21 U	19 U	20 U	19 U	19 U	3.99 U
Aroclor-1254	UG/KG	78	5%	100	0	4	87	21 U	19 U	20 U	19 U	19 U	5.3 U
Aroclor-1260	UG/KG	0	0%	100	0	0	87	37 U	34 U	35 U	34 U	33 U	2.23 U
Aroclor-1268	UG/KG	0	0%	100	0	0	87	21 U	19 U	20 U	19 U	19 U	3.28 U
Pesticides													
4,4'-DDD	UG/KG	6.9	1%	3.3	1	1	85	2.1 U	1.9 U	2 U	1.9 U	1.9 U	0.39 U
4,4'-DDE	UG/KG	5.9	4%	3.3	2	3	85	2.1 U	1.9 U	2 U	1.9 U	1.9 U	0.41 U
4,4'-DDT	UG/KG	9.8	4%	3.3	2	3	85	2.1 U	1.9 U	2 U	1.9 U	1.9 U	0.48 U
Aldrin	UG/KG	0	0%	5	0	0	85	1.1 U	0.93 U	0.96 U	0.94 U	0.91 U	0.45 U
Alpha-BHC	UG/KG	210	6%	20	2	5	85	1.1 U	0.93 U	0.96 U	0.94 U	0.91 U	0.37 U
Alpha-Chlordane	UG/KG	0	0%	94	0	0	85	1.1 U	0.93 U	0.96 U	0.94 U	0.91 U	0.39 U
Beta-BHC	UG/KG	63	1%	36	1	1	85	1.1 U	0.93 U	0.96 U	0.94 U	0.91 U	0.94 U
Chlordane (Alpha And Gamma Isomers)	UG/KG	0	0%	94	0	0	8						0.47 U
Delta-BHC	UG/KG	61	4%	40	1	3	85	1.1 U	0.93 U	0.96 U	0.94 U	0.91 U	0.51 U
Dieldrin	UG/KG	0	0%	5	0	0	85	2.1 U	1.9 U	2 U	1.9 U	1.9 U	0.47 U
Endosulfan I	UG/KG	0	0%	2400	0	0	85	1.1 U	0.93 U	0.96 U	0.94 U	0.91 U	0.35 U
Endosulfan II	UG/KG	0	0%	2400	0	0	85	2.1 U	1.9 U	2 U	1.9 U	1.9 U	0.41 U
Endosulfan sulfate	UG/KG	0	0%	2400	0	0	85	2.1 U	1.9 U	2 U	1.9 U	1.9 U	0.69 U
Endrin	UG/KG	0	0%	14	0	0	85	2.1 U	1.9 U	2 U	1.9 U	1.9 U	0.73 U
Endrin aldehyde	UG/KG	0	0%		0	0	85	2.1 U	1.9 U	2 U	1.9 U	1.9 U	0.53 U
Endrin ketone	UG/KG	0	0%		0	0	85	2.1 U	1.9 U	2 U	1.9 U	1.9 U	1.1 U
Gamma-BHC/Lindane	UG/KG	0	0%	100	0	0	85	1.1 U	0.93 U	0.96 U	0.94 U	0.91 U	0.41 U
Gamma-Chlordane	UG/KG	0	0%		0	0	77	1.1 U	0.93 U	0.96 U	0.94 U	0.91 U	
Heptachlor	UG/KG	0	0%	42	0	0	85	1.1 U	0.93 U	0.96 U	0.94 U	0.91 U	0.57 U
Heptachlor epoxide	UG/KG	0	0%		0	0	85	1.1 U	0.93 U	0.96 U	0.94 U	0.91 U	0.5 U
Methoxychlor	UG/KG	0	0%		0	0	85	11 U	9.3 U	9.6 U	9.3 U	9.1 U	0.49 U
Toxaphene	UG/KG	0	0%		0	0	85	21 U	19 U	19 U	19 U	18 U	7.5 U
Metals													
Aluminum	MG/KG	35100	100%		0	85	85	13100	9710	10500	11600	9860	7400 J
Antimony	MG/KG	0	0%		0	0	85	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.34 UJ
Arsenic	MG/KG	12.2	100%	13	0	85	85	3	3.9	5.7	4	3	5.1 J
Barium	MG/KG	304	100%	350	0	85	85	101	79.4	71.4	90.5	84.4	82 J
Beryllium	MG/KG	1.7	96%	7.2	0	82	85	0.71	0.55	0.61	0.63	0.56	0.46 J
Cadmium	MG/KG	2.5	34%	2.5	0	29	85	0.59 U	0.54 U	1.25	0.55 U	0.54 U	0.13 J
Calcium	MG/KG	186000	100%		0	85	85	28200	78200	73900	67700	91500	100000 J
Chromium	MG/KG	51.2	100%	30	2	85	85	19.4	15.6	17	18.7	15.9	12 J
Cobalt	MG/KG	29	100%		0	85	85	9.8	9.7	10.4	10.9	9.4	8.1 J
Copper	MG/KG	61.4	100%	50	1	85	85	22.2	24.3	41.3	24.4	22.1	42 J

Table B-1C
SEAD-12 Complete Confirmatory Soil Sample Analytical Results
Compared to NYSDEC Unrestricted Use Levels
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION								SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12
LOCATION ID								S12EXSW-J-3-01	S12EXSW-J-3-02	S12EXSW-J-4-01	S12EXSW-J-4-02	S12EXSW-J-4-03	S12EXSW-J-4-04
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								S12EXSW-J-3-01	S12EXSW-J-3-02	S12EXSW-J-4-01	S12EXSW-J-4-02	S12EXSW-J-4-03	S12EXSW-J-4-04
TOP OF SAMPLE								0	0	0	0	0	0
BOTTOM OF SAMPLE								0	0	0	0	0	0.2
SAMPLE DATE								8/4/2009	8/4/2009	8/4/2009	8/4/2009	8/4/2009	10/15/2009
QC CODE								SA	SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA
AREA								Pit C2	Pit C2	Pit C2	Pit C2	Pit C2	Pit C2
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**NYSDEC Unrestricted Use Level**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Cyanide	MG/KG	0	0%	27	0	0	85	0.5 U	0.5 U	0.42 U	0.42 U	0.42 U	0.2 UJ
Iron	MG/KG	56400	100%		0	85	85	19900	19100	20800	21900	18300	18000 J
Lead	MG/KG	33.3	100%	63	0	85	85	11.8	10.1	13.9	10.9	8.1	8.9 J
Magnesium	MG/KG	74400	100%		0	85	85	6990	12700	12200	11900	13600	15000 J
Manganese	MG/KG	1650	100%	1600	2	85	85	802	422	409	557	433	390 J
Mercury	MG/KG	0.05	95%	0.18	0	81	85	0.036 J	0.021 J	0.034 J	0.021 J	0.016 J	0.019 J
Nickel	MG/KG	75	100%	30	32	85	85	28.1 J	27.5 J	**39** J	**33.1** J	27.5 J	30 J
Potassium	MG/KG	5330	100%		0	85	85	1480 J	1570 J	1480 J	1650 J	1670 J	1500 J
Selenium	MG/KG	2	18%	3.9	0	15	85	1.2 U	1.1 U	1.1 U	1.1 U	1.1 U	0.28 UJ
Silver	MG/KG	0	0%	2	0	0	85	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.22 UJ
Sodium	MG/KG	390	100%		0	85	85	70 J	130	110	130	160	140 J
Thallium	MG/KG	0	0%		0	0	85	1.1 U	0.2 U	0.3 U	0.6 U	0.2 U	0.56 UJ
Vanadium	MG/KG	68	100%		0	85	85	22.3	17.7	21.2	19.8	17.3	21 J
Zinc	MG/KG	154	100%	109	2	85	85	55.4 J	50.8 J	**118** J	54 J	46.9 J	61 J
TCLP													
TCLP 1,1-Dichloroethene	UG/L	0	0%		0	0	3						
TCLP 1,2-Dichloroethane	UG/L	0	0%		0	0	3						
TCLP Benzene	UG/L	0	0%		0	0	3						
TCLP Carbon tetrachloride	UG/L	0	0%		0	0	3						
TCLP Chlorobenzene	UG/L	0	0%		0	0	3						
TCLP Chloroform	UG/L	0	0%		0	0	3						
TCLP Methyl ethyl ketone	UG/L	0	0%		0	0	3						
TCLP Tetrachloroethene	UG/L	0	0%		0	0	3						
TCLP Trichloroethene	UG/L	0	0%		0	0	3						
TCLP Vinyl chloride	UG/L	0	0%		0	0	3						

Notes:
(1) The dataset of samples consists of the Inplace samples representing current site conditions
The overburden C1 samples were not included in this dataset.
(2) NYSDEC's Unrestricted Use Soil Cleanup Objective, 6 NYCRR Part 375-6.8(a).
(3) Sample/Duplicate pairs are evaluated as separate and discrete samples in this table
(4) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected; the associated reporting limit is approximate
R = the analytical result was rejected during data validation

Table B-1C
SEAD-12 Complete Confirmatory Soil Sample Analytical Results
Compared to NYSDEC Unrestricted Use Levels
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION								SEAD-12	SEAD-12	SEAD-12
LOCATION ID								S12EXSW-J-5-01	S12EXSW-K-3-01	S12EXSW-K-4-01
MATRIX								SOIL	SOIL	SOIL
SAMPLE ID								S12EXSW-J-5-01	S12EXSW-K-3-01	S12EXSW-K-4-01
TOP OF SAMPLE								0	0	0
BOTTOM OF SAMPLE								0	0	0
SAMPLE DATE								8/5/2009	8/5/2009	8/5/2009
QC CODE								SA	SA	SA
STUDY ID								RA	RA	RA
AREA								Pit C2	Pit C2	Pit C2
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**NYSDEC Unrestricted Use Level**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)
Volatile Organic Compounds										
1,1,1-Trichloroethane	UG/KG	0	0%	680	0	0	85	0.23 U	0.23 U	0.24 U
1,1,2,2-Tetrachloroethane	UG/KG	0	0%		0	0	85	0.44 U	0.44 U	0.46 U
1,1,2-Trichloroethane	UG/KG	0	0%		0	0	85	0.63 U	0.64 U	0.66 U
1,1-Dichloroethane	UG/KG	0	0%	270	0	0	85	0.5 U	0.51 U	0.53 U
1,1-Dichloroethene	UG/KG	0	0%	330	0	0	85	0.41 U	0.41 U	0.43 U
1,2-Dichloroethane	UG/KG	0	0%	20	0	0	85	0.39 U	0.39 U	0.4 U
1,2-Dichloropropane	UG/KG	0	0%		0	0	85	0.43 U	0.43 U	0.45 U
Acetone	UG/KG	9.6	13%	50	0	11	85	22 UJ	22 UJ	23 UJ
Benzene	UG/KG	0	0%	60	0	0	85	0.5 U	0.51 U	0.53 U
Bromodichloromethane	UG/KG	0	0%		0	0	85	0.56 U	0.56 U	0.59 U
Bromoform	UG/KG	0	0%		0	0	85	0.46 U	0.46 U	0.48 U
Carbon disulfide	UG/KG	2.5	2%		0	2	85	0.56 U	0.56 U	0.59 U
Carbon tetrachloride	UG/KG	0	0%	760	0	0	85	0.49 U	0.49 U	0.52 U
Chlorobenzene	UG/KG	0	0%	1100	0	0	85	0.53 U	0.53 U	0.55 U
Chlorodibromomethane	UG/KG	0	0%		0	0	85	0.36 U	0.36 U	0.38 U
Chloroethane	UG/KG	0	0%		0	0	85	0.53 U	0.53 U	0.55 U
Chloroform	UG/KG	0	0%	370	0	0	85	0.47 U	0.47 U	0.49 U
Cis-1,2-Dichloroethene	UG/KG	0.45	1%	250	0	1	85	0.34 U	0.34 U	0.36 U
Cis-1,3-Dichloropropene	UG/KG	0	0%		0	0	85	0.37 U	0.37 U	0.39 U
Ethyl benzene	UG/KG	2.7	1%	1000	0	1	85	0.96 U	0.96 U	1.1 U
Meta/Para Xylene	UG/KG	1.3	4%	260	0	3	85	1.1 U	1.1 U	1.1 U
Methyl bromide	UG/KG	0	0%		0	0	85	0.85 UJ	0.85 UJ	0.89 UJ
Methyl butyl ketone	UG/KG	0	0%		0	0	85	0.78 U	0.78 U	0.81 U
Methyl chloride	UG/KG	0	0%		0	0	85	0.62 U	0.63 U	0.65 U
Methyl ethyl ketone	UG/KG	1.6	5%	120	0	4	85	0.83 U	0.83 U	0.87 U
Methyl isobutyl ketone	UG/KG	0	0%		0	0	85	0.71 U	0.71 U	0.74 U
Methylene chloride	UG/KG	2.8	24%	50	0	20	85	5.4 U	5.4 U	5.7 U
Ortho Xylene	UG/KG	0	0%	260	0	0	85	0.69 U	0.69 U	0.72 U
Styrene	UG/KG	0.61	4%		0	3	85	0.49 U	0.49 U	0.52 U
Tetrachloroethene	UG/KG	0	0%	1300	0	0	85	0.54 U	0.54 U	0.56 U
Toluene	UG/KG	3.3	48%	700	0	41	85	0.58 J	1.5 J	0.42 J
Total Xylenes	UG/KG	0	0%	260	0	0	8			
Trans-1,2-Dichloroethene	UG/KG	0	0%	190	0	0	85	0.57 U	0.57 U	0.6 U
Trans-1,3-Dichloropropene	UG/KG	0	0%		0	0	85	0.41 U	0.41 U	0.43 U
Trichloroethene	UG/KG	1.2	16%	470	0	14	85	0.44 U	0.44 U	0.46 U
Vinyl chloride	UG/KG	0	0%	20	0	0	85	0.52 U	0.52 U	0.54 U
Semivolatile Organic Compounds										
1,2,4-Trichlorobenzene	UG/KG	0	0%		0	0	85	35 U	35 U	37 U
1,2-Dichlorobenzene	UG/KG	0	0%	1100	0	0	85	32 U	32 U	33 U
1,3-Dichlorobenzene	UG/KG	0	0%	2400	0	0	85	35 U	35 U	37 U
1,4-Dichlorobenzene	UG/KG	0	0%	1800	0	0	85	32 U	32 U	33 U
2,4,5-Trichlorophenol	UG/KG	0	0%		0	0	85	49 U	49 U	52 U
2,4,6-Trichlorophenol	UG/KG	0	0%		0	0	85	54 U	54 U	56 U
2,4-Dichlorophenol	UG/KG	0	0%		0	0	85	43 U	43 U	45 U
2,4-Dimethylpheno	UG/KG	0	0%		0	0	85	40 U	40 U	41 U
2,4-Dinitrophenol	UG/KG	0	0%		0	0	85	1100 UJ	1100 UJ	1100 UJ
2,4-Dinitrotoluene	UG/KG	0	0%		0	0	85	58 U	58 U	61 U
2,6-Dinitrotoluene	UG/KG	0	0%		0	0	85	44 U	44 U	46 U

Table B-1C
SEAD-12 Complete Confirmatory Soil Sample Analytical Results
Compared to NYSDEC Unrestricted Use Levels
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION							SEAD-12	SEAD-12	SEAD-12
LOCATION ID							S12EXSW-J-5-01	S12EXSW-K-3-01	S12EXSW-K-4-01
MATRIX							SOIL	SOIL	SOIL
SAMPLE ID							S12EXSW-J-5-01	S12EXSW-K-3-01	S12EXSW-K-4-01
TOP OF SAMPLE							0	0	0
BOTTOM OF SAMPLE							0	0	0
SAMPLE DATE							8/5/2009	8/5/2009	8/5/2009
QC CODE							SA	SA	SA
STUDY ID							RA	RA	RA
AREA							Pit C2	Pit C2	Pit C2
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**NYSDEC Unrestricted Use Level**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)
2-Chloronaphthalene	UG/KG	0	0%		0	0	85	40 U	40 U	41 U
2-Chlorophenol	UG/KG	0	0%		0	0	85	42 U	42 U	44 U
2-Methylnaphthalene	UG/KG	0	0%		0	0	85	35 U	35 U	37 U
2-Methylphenol	UG/KG	0	0%	330	0	0	85	31 U	31 U	32 U
2-Nitroaniline	UG/KG	0	0%		0	0	85	1300 U	1300 U	1400 U
2-Nitrophenol	UG/KG	0	0%		0	0	85	30 U	30 U	31 U
3,3'-Dichlorobenzidine	UG/KG	0	0%		0	0	85	42 U	42 U	44 U
3-Nitroaniline	UG/KG	0	0%		0	0	85	870 U	870 U	910 U
4,6-Dinitro-2-methylphenol	UG/KG	0	0%		0	0	85	1600 U	1600 U	1700 U
4-Bromophenyl phenyl ether	UG/KG	0	0%		0	0	85	44 U	44 U	46 U
4-Chloro-3-methylphenol	UG/KG	0	0%		0	0	85	42 U	42 U	44 U
4-Chloroaniline	UG/KG	0	0%		0	0	85	41 U	41 U	43 U
4-Chlorophenyl phenyl ether	UG/KG	0	0%		0	0	85	43 U	43 U	45 U
4-Methylphenol	UG/KG	0	0%	330	0	0	8			
4-Nitroaniline	UG/KG	0	0%		0	0	85	1300 U	1300 U	1400 U
4-Nitrophenol	UG/KG	0	0%		0	0	85	1200 U	1200 U	1200 U
Acenaphthene	UG/KG	0	0%	20000	0	0	85	43 U	43 U	45 U
Acenaphthylene	UG/KG	0	0%	100000	0	0	85	40 U	40 U	41 U
Anthracene	UG/KG	0	0%	100000	0	0	85	41 U	41 U	43 U
Benzo(a)anthracene	UG/KG	0	0%	1000	0	0	85	43 U	43 U	45 U
Benzo(a)pyrene	UG/KG	0	0%	1000	0	0	85	36 U	36 U	38 U
Benzo(b)fluoranthene	UG/KG	0	0%	1000	0	0	85	52 U	52 U	54 U
Benzo(ghi)perylene	UG/KG	0	0%	100000	0	0	85	97 U	97 U	110 U
Benzo(k)fluoranthene	UG/KG	0	0%	800	0	0	85	53 U	53 U	55 U
Benzyl alcohol	UG/KG	140	38%		0	32	85	120 J	94 J	130 J
Bis(2-Chloroethoxy)methane	UG/KG	0	0%		0	0	85	54 U	54 U	56 U
Bis(2-Chloroethyl)ether	UG/KG	0	0%		0	0	85	42 U	42 U	44 U
Bis(2-Chloroisopropyl)ether	UG/KG	0	0%		0	0	85	50 U	51 U	53 U
Bis(2-Ethylhexyl)phthalate	UG/KG	120	11%		0	9	85	60 U	60 U	63 U
Butylbenzylphthalate	UG/KG	0	0%		0	0	85	44 U	44 U	46 U
Carbazole	UG/KG	0	0%		0	0	85	59 U	59 U	62 U
Chrysene	UG/KG	0	0%	1000	0	0	85	44 U	44 U	46 U
Di-n-butylphthalate	UG/KG	0	0%		0	0	85	150 U	150 U	160 U
Di-n-octylphthalate	UG/KG	0	0%		0	0	85	36 U	36 U	38 U
Dibenz(a,h)anthracene	UG/KG	0	0%	330	0	0	85	42 U	42 U	44 U
Dibenzofuran	UG/KG	0	0%	7000	0	0	85	40 U	40 U	41 U
Diethyl phthalate	UG/KG	0	0%		0	0	85	43 U	43 U	45 U
Dimethylphthalate	UG/KG	86	7%		0	6	85	43 U	43 U	45 U
Fluoranthene	UG/KG	74	2%	100000	0	2	85	43 U	43 U	45 U
Fluorene	UG/KG	0	0%	30000	0	0	85	35 U	35 U	37 U
Hexachlorobenzene	UG/KG	0	0%	330	0	0	85	41 U	41 U	43 U
Hexachlorobutadiene	UG/KG	0	0%		0	0	85	42 U	42 U	44 U
Hexachlorocyclopentadiene	UG/KG	0	0%		0	0	85	39 U	39 U	40 U
Hexachloroethane	UG/KG	0	0%		0	0	85	34 U	34 U	36 U
Indeno(1,2,3-cd)pyrene	UG/KG	0	0%	500	0	0	85	40 U	40 U	41 U
Isophorone	UG/KG	0	0%		0	0	85	43 U	43 U	45 U
N-Nitrosodimethylamine	UG/KG	0	0%		0	0	85	61 U	61 U	64 U
N-Nitrosodiphenylamine	UG/KG	0	0%		0	0	85	47 U	47 U	49 U
N-Nitrosodipropylamine	UG/KG	0	0%		0	0	85	47 U	47 U	49 U

Table B-1C
SEAD-12 Complete Confirmatory Soil Sample Analytical Results
Compared to NYSDEC Unrestricted Use Levels
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION								SEAD-12	SEAD-12	SEAD-12
LOCATION ID								S12EXSW-J-5-01	S12EXSW-K-3-01	S12EXSW-K-4-01
MATRIX								SOIL	SOIL	SOIL
SAMPLE ID								S12EXSW-J-5-01	S12EXSW-K-3-01	S12EXSW-K-4-01
TOP OF SAMPLE								0	0	0
BOTTOM OF SAMPLE								0	0	0
SAMPLE DATE								8/5/2009	8/5/2009	8/5/2009
QC CODE								SA	SA	SA
STUDY ID								RA	RA	RA
AREA								Pit C2	Pit C2	Pit C2
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**NYSDEC Unrestricted Use Level**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)
Naphthalene	UG/KG	0	0%	12000	0	0	85	32 U	32 U	33 U
Nitrobenzene	UG/KG	0	0%		0	0	85	46 U	46 U	48 U
Pentachlorophenol	UG/KG	0	0%	800	0	0	85	1200 U	1200 U	1300 U
Phenanthrene	UG/KG	52	2%	100000	0	2	85	44 U	44 U	46 U
Phenol	UG/KG	0	0%	330	0	0	85	42 U	42 U	44 U
Pyrene	UG/KG	64	2%	100000	0	2	85	39 U	39 U	40 U
PCBs										
Aroclor-1016	UG/KG	0	0%	100	0	0	87	19 U	19 U	20 U
Aroclor-1221	UG/KG	0	0%	100	0	0	87	42 U	42 U	44 U
Aroclor-1232	UG/KG	0	0%	100	0	0	87	19 U	19 U	20 U
Aroclor-1242	UG/KG	0	0%	100	0	0	87	29 U	29 U	30 U
Aroclor-1248	UG/KG	0	0%	100	0	0	87	19 U	19 U	20 U
Aroclor-1254	UG/KG	78	5%	100	0	4	87	19 U	19 U	20 U
Aroclor-1260	UG/KG	0	0%	100	0	0	87	33 U	33 U	35 U
Aroclor-1268	UG/KG	0	0%	100	0	0	87	19 U	19 U	20 U
Pesticides										
4,4'-DDD	UG/KG	6.9	1%	3.3	1	1	85	1.9 U	1.9 U	1.9 U
4,4'-DDE	UG/KG	5.9	4%	3.3	2	3	85	1.9 U	1.9 U	1.9 U
4,4'-DDT	UG/KG	9.8	4%	3.3	2	3	85	1.9 U	1.9 U	1.9 U
Aldrin	UG/KG	0	0%	5	0	0	85	0.92 U	0.92 U	0.96 U
Alpha-BHC	UG/KG	210	6%	20	2	5	85	0.92 U	0.92 U	0.96 U
Alpha-Chlordane	UG/KG	0	0%	94	0	0	85	0.92 U	0.92 U	0.96 U
Beta-BHC	UG/KG	63	1%	36	1	1	85	0.92 U	0.92 U	0.96 U
Chlordane (Alpha And Gamma Isomers)	UG/KG	0	0%	94	0	0	8			
Delta-BHC	UG/KG	61	4%	40	1	3	85	0.92 U	0.92 U	0.96 U
Dieldrin	UG/KG	0	0%	5	0	0	85	1.9 U	1.9 U	1.9 U
Endosulfan I	UG/KG	0	0%	2400	0	0	85	0.92 U	0.92 U	0.96 U
Endosulfan II	UG/KG	0	0%	2400	0	0	85	1.9 U	1.9 U	1.9 U
Endosulfan sulfate	UG/KG	0	0%	2400	0	0	85	1.9 U	1.9 U	1.9 U
Endrin	UG/KG	0	0%	14	0	0	85	1.9 U	1.9 U	1.9 U
Endrin aldehyde	UG/KG	0	0%		0	0	85	1.9 U	1.9 U	1.9 U
Endrin ketone	UG/KG	0	0%		0	0	85	1.9 U	1.9 U	1.9 U
Gamma-BHC/Lindane	UG/KG	0	0%	100	0	0	85	0.92 U	0.92 U	0.96 U
Gamma-Chlordane	UG/KG	0	0%		0	0	77	0.92 U	0.92 U	0.96 U
Heptachlor	UG/KG	0	0%	42	0	0	85	0.92 U	0.92 U	0.96 U
Heptachlor epoxide	UG/KG	0	0%		0	0	85	0.92 U	0.92 U	0.96 U
Methoxychlor	UG/KG	0	0%		0	0	85	9.1 U	9.1 U	9.5 U
Toxaphene	UG/KG	0	0%		0	0	85	19 U	19 U	19 U
Metals										
Aluminum	MG/KG	35100	100%		0	85	85	12800	12400	10800
Antimony	MG/KG	0	0%		0	0	85	0.5 UJ	0.5 UJ	0.5 UJ
Arsenic	MG/KG	12.2	100%	13	0	85	85	4.3	3.3	2.7
Barium	MG/KG	304	100%	350	0	85	85	87.5	97.6	86.6
Beryllium	MG/KG	1.7	96%	7.2	0	82	85	0.69	0.68	0.57
Cadmium	MG/KG	2.5	34%	2.5	0	29	85	0.54 U	0.54 U	0.55 U
Calcium	MG/KG	186000	100%		0	85	85	46100	53600	91200
Chromium	MG/KG	51.2	100%	30	2	85	85	19.9	21.1	18.3
Cobalt	MG/KG	29	100%		0	85	85	9.4	11.1	9.2
Copper	MG/KG	61.4	100%	50	1	85	85	23	24.2	20.1

Table B-1C
SEAD-12 Complete Confirmatory Soil Sample Analytical Results
Compared to NYSDEC Unrestricted Use Levels
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION								SEAD-12	SEAD-12	SEAD-12
LOCATION ID								S12EXSW-J-5-01	S12EXSW-K-3-01	S12EXSW-K-4-01
MATRIX								SOIL	SOIL	SOIL
SAMPLE ID								S12EXSW-J-5-01	S12EXSW-K-3-01	S12EXSW-K-4-01
TOP OF SAMPLE								0	0	0
BOTTOM OF SAMPLE								0	0	0
SAMPLE DATE								8/5/2009	8/5/2009	8/5/2009
QC CODE								SA	SA	SA
STUDY ID								RA	RA	RA
AREA								Pit C2	Pit C2	Pit C2
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**NYSDEC Unrestricted Use Level**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)
Cyanide	MG/KG	0	0%	27	0	0	85	0.5 U	0.42 U	0.5 U
Iron	MG/KG	56400	100%		0	85	85	21800	21800	20000
Lead	MG/KG	33.3	100%	63	0	85	85	11.4 J	10.3 J	8.8 J
Magnesium	MG/KG	74400	100%		0	85	85	8930 J	10600 J	10600 J
Manganese	MG/KG	1650	100%	1600	2	85	85	582	466	480
Mercury	MG/KG	0.05	95%	0.18	0	81	85	0.025 J	0.025 J	0.016 J
Nickel	MG/KG	75	100%	30	32	85	85	29.7	**34.8**	**30.1**
Potassium	MG/KG	5330	100%		0	85	85	1640 J	1710 J	1720 J
Selenium	MG/KG	2	18%	3.9	0	15	85	1.1 U	0.2 U	0.2 U
Silver	MG/KG	0	0%	2	0	0	85	0.3 U	0.3 U	0.3 U
Sodium	MG/KG	390	100%		0	85	85	100 J	110	160
Thallium	MG/KG	0	0%		0	0	85	0.6 U	0.6 U	0.6 U
Vanadium	MG/KG	68	100%		0	85	85	23.1	20.7	18.1
Zinc	MG/KG	154	100%	109	2	85	85	53.7 J	58.2 J	44.7 J
TCLP										
TCLP 1,1-Dichloroethene	UG/L	0	0%		0	0	3			
TCLP 1,2-Dichloroethane	UG/L	0	0%		0	0	3			
TCLP Benzene	UG/L	0	0%		0	0	3			
TCLP Carbon tetrachloride	UG/L	0	0%		0	0	3			
TCLP Chlorobenzene	UG/L	0	0%		0	0	3			
TCLP Chloroform	UG/L	0	0%		0	0	3			
TCLP Methyl ethyl ketone	UG/L	0	0%		0	0	3			
TCLP Tetrachloroethene	UG/L	0	0%		0	0	3			
TCLP Trichloroethene	UG/L	0	0%		0	0	3			
TCLP Vinyl chloride	UG/L	0	0%		0	0	3			

Notes:
(1) The dataset of samples consists of the Inplace samples representing current site conditions
The overburden C1 samples were not included in this dataset.
(2) NYSDEC's Unrestricted Use Soil Cleanup Objective, 6 NYCRR Part 375-6.8(a).
(3) Sample/Duplicate pairs are evaluated as separate and discrete samples in this table
(4) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected; the associated reporting limit is approximate
R = the analytical result was rejected during data validation

Table B-1R
SEAD-12 Complete Radiological Soil Sample Results
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID		S12EXFL-N-9-01		S12EXFL-N-9-02		S12EXFL-O-10-01		S12EXFL-O-10-03B		S12EXSW-N-10-01		S12EXSW-N-10-02	
MATRIX		SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
SAMPLE ID		S12EXFL-N-9-01		S12EXFL-N-9-02		S12EXFL-O-10-01		S12EXFL-O-10-03B		S12EXSW-N-10-01		S12EXSW-N-10-02	
TOP OF SAMPLE		0		0		0		0		0		0	
BOTTOM OF SAMPLE		0.2		0.2		0.2		0.2		0.2		0.2	
SAMPLE DATE		9/29/2009		9/29/2009		9/29/2009		9/29/2009		9/29/2009		9/29/2009	
QC CODE		SA		SA		SA		SA		SA		SA	
STUDY ID		RA		RA		RA		RA		RA		RA	
AREA		PIT A		PIT A		PIT A		PIT A		PIT A		PIT A	
Parameter	**Units**	Value (Q)	(U)	Value (Q)	(U)	Value (Q)	(U)	Value (Q)	(U)	Value (Q)	(U)	Value (Q)	(U)
Actinium-228	PCI/G	1.07	0.27	1.02	0.32	0.722	0.28	0.812	0.24	0.955	0.24	0.609 UI	0.43
Americium-241	PCI/G												
Bismuth-211	PCI/G	0.309 UI	0.51	0.288 UI	0.53	0.32 UI	0.82	0.286 UI	0.33	0.275 UI	0.4	0.431 UI	0.53
Bismuth-212	PCI/G	0.603 UI	0.4	0.689 UI	0.43	0.628 U	0.33	0.462 U	0.3	0.534 U	0.34	0.793 U	0.44
Bismuth-214	PCI/G	1.01	0.18	0.74	0.19	1.92	0.25	0.564	0.12	0.868	0.15	0.352 UI	0.26
Cesium-137	PCI/G	0.0695 U	0.04	0.0912 U	0.05	0.0561 U	0.04	0.0479 U	0.03	0.0567 UI	0.07	0.0968 U	0.05
Cobalt-60	PCI/G												
Gross Alpha	PCI/G	10.4	2.25	8.5	2.89	15.8	3.16	9.29	3.95	5.41	2.66	6.86	4.11
Gross Beta	PCI/G	23.8	2.42	25	2.85	21.9	2.45	19	3.52	16.8	2.79	21.5	4.95
Lead-211	PCI/G	1.51 U	1.16	1.41 U	1.04	1.64 U	0.97	1.17 U	0.71	1.38 U	0.9	2.03 U	1.25
Lead-212	PCI/G	0.973	0.12	1.11	0.16	0.713	0.11	0.675	0.09	0.779	0.12	0.976	0.15
Lead-214	PCI/G	1.09	0.19	1.09	0.19	2.66	0.32	0.648	0.12	0.937	0.15	0.743	0.19
Potassium-40	PCI/G	24.1	2.44	24.5	2.79	19.4	2.35	18.9	2.05	19.7	2.1	22.5	2.8
Protactinium-234	PCI/G	0.563 U	0.32	0.602 U	0.37	0.539 U	0.33	0.487 U	0.27	0.404 U	0.26	0.721 U	0.44
Radium-226	PCI/G	1.01	0.18	0.74	0.19	1.92	0.25	0.564	0.12	0.868	0.15	0.352 UI	0.26
Thallium-208	PCI/G	0.325	0.08	0.33	0.08	0.205	0.07	0.219	0.06	0.233	0.07	0.299	0.08
Thorium-230	PCI/G	1.01	0.18	0.74	0.19	1.92	0.25	0.564	0.12	0.868	0.15	0.352 UI	0.26
Thorium-234	PCI/G	0.893 U	0.67	1.31	0.57	1 U	0.73	1.3	0.89	0.927 UI	0.66	0.846 U	0.57
Uranium-235	PCI/G	0.343 U	0.22	0.295 U	0.18	0.346 U	0.22	0.295 U	0.17	0.311 U	0.18	0.374 U	0.22

Note:
(Q) = Qualifer
(U) = Uncertainty
U = Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI = Gamma Spectroscopy − Uncertain identification
Americium-241 and Cobalt-60 were not analyzed for these samples, but were presented to allow for cross comparison.

Table B-1R
SEAD-12 Complete Radiological Soil Sample Results
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID		S12EXSW-N-9-01		S12EXSW-N-9-02		S12EXSW-O-10-01		S12EXSW-O-9-01		S12EXPR-N-10-01		S12EXPR-N-10-02	
MATRIX		SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
SAMPLE ID		S12EXSW-N-9-01		S12EXSW-N-9-02		S12EXSW-O-10-01		S12EXSW-O-9-01		S12EXPR-N-10-01		S12EXPR-N-10-02	
TOP OF SAMPLE		0		0		0		0		0		0	
BOTTOM OF SAMPLE		0.2		0.2		0.2		0.2		0.2		0.2	
SAMPLE DATE		9/29/2009		9/29/2009		9/29/2009		9/29/2009		9/29/2009		9/29/2009	
QC CODE		SA		SA		SA		SA		SA		SA	
STUDY ID		RA		RA		RA		RA		RA		RA	
AREA		PIT A		PIT A		PIT A		PIT A		PIT A		PIT A	
Parameter	**Units**	Value (Q)	(U)	Value (Q)	(U)	Value (Q)	(U)	Value (Q)	(U)	Value (Q)	(U)	Value (Q)	(U)
Actinium-228	PCI/G	0.882	0.26	0.936	0.3	0.81	0.29	0.805	0.32	0.875	0.21	0.428 UI	0.26
Americium-241	PCI/G												
Bismuth-211	PCI/G	0.369 UI	0.5	0.348 UI	0.44	0.3 UI	0.45	0.258 UI	0.39	0.219 UI	0.37	0.348 UI	0.53
Bismuth-212	PCI/G	0.661 U	0.35	0.548 UI	0.3	0.585 U	0.32	0.555 U	0.31	0.461 U	0.36	0.651 U	0.36
Bismuth-214	PCI/G	0.674	0.17	0.716	0.18	0.672	0.16	0.701	0.15	0.627	0.13	0.822	0.16
Cesium-137	PCI/G	0.0666 U	0.04	0.0644 U	0.04	0.0526 U	0.04	0.0461 U	0.03	0.0397 U	0.03	0.179	0.06
Cobalt-60	PCI/G												
Gross Alpha	PCI/G	13.5	6.17	13.7	3.45	6.84	3.67	6.81	4.27	8.23	2.8	12.1	2.71
Gross Beta	PCI/G	19.7	4.42	24.6	2.63	21.7	4.7	21.4	4.29	17.1	2.65	22.9	3.07
Lead-211	PCI/G	1.73 U	1.33	1.49 U	0.88	1.4 U	0.88	1.46 U	0.87	1.17 U	0.68	1.42 U	1
Lead-212	PCI/G	0.969	0.13	0.879	0.14	0.818	0.12	0.788	0.11	0.765	0.09	0.835	0.12
Lead-214	PCI/G	0.877	0.18	0.871	0.16	0.742	0.16	0.709	0.14	0.704	0.13	0.864	0.19
Potassium-40	PCI/G	23.4	2.35	21.2	2.18	18.6	2.09	17.9	2.02	19.3	1.86	18.3	2.3
Protactinium-234	PCI/G	0.575 U	0.35	0.42 U	0.29	0.651 U	0.38	0.487 U	0.27	0.378 U	0.23	0.511 U	0.3
Radium-226	PCI/G	0.674	0.17	0.716	0.18	0.672	0.16	0.701	0.15	0.627	0.13	0.822	0.16
Thallium-208	PCI/G	0.281	0.08	0.278	0.07	0.225	0.08	0.3	0.06	0.213	0.06	0.244	0.07
Thorium-230	PCI/G	0.674	0.17	0.716	0.18	0.672	0.16	0.701	0.15	0.627	0.13	0.822	0.16
Thorium-234	PCI/G	1.09 U	0.74	0.957 UI	0.76	1.26	0.55	0.888 UI	0.64	0.836 U	0.69	1.02 U	0.9
Uranium-235	PCI/G	0.387 U	0.25	0.32 U	0.19	0.308 U	0.18	0.273 U	0.16	0.283 U	0.17	0.351 U	0.21

Note:
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Americium-241 and Cobalt-60 were not analyzed for these samples, but were presented to allow for cross comparison.

Table B-1R
SEAD-12 Complete Radiological Soil Sample Results
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID		S12EXPR-N-9-01		S12EXPR-O-10-01		S12EXPR-O-9-01		S12EXFL-O-8-01		S12EXFL-O-8-02		S12EXSW-O-7-01	
MATRIX		SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
SAMPLE ID		S12EXPR-N-9-01		S12EXPR-O-10-01		S12EXPR-O-9-01		S12EXFL-O-8-01		S12EXFL-O-8-02B		S12EXSW-O-7-01	
TOP OF SAMPLE		0		0		0		0		0		0	
BOTTOM OF SAMPLE		0.2		0.2		0.2		0.2		0.2		0.2	
SAMPLE DATE		9/29/2009		10/2/2009		9/29/2009		10/1/2009		10/7/2009		10/1/2009	
QC CODE		SA		SA		SA		SA		SA		SA	
STUDY ID		RA		RA		RA		RA		RA		RA	
AREA		PIT A		PIT A		PIT A		PIT B		PIT B		PIT B	
Parameter	**Units**	Value (Q)	(U)	Value (Q)	(U)	Value (Q)	(U)	Value (Q)	(U)	Value (Q)	(U)	Value (Q)	(U)
Actinium-228	PCI/G	0.858	0.28	0.92	0.25	0.673	0.24	0.895	0.31	1.13	0.27	0.541 UI	0.45
Americium-241	PCI/G												
Bismuth-211	PCI/G	0.288 UI	0.46	0.311 UI	0.36	0.258 UI	0.43	0.265 UI	0.42	0.292 UI	0.49	0.396 UI	0.62
Bismuth-212	PCI/G	0.582 U	0.3	0.622 UI	0.48	0.562 UI	0.37	0.598 UI	0.47	0.65 UI	0.47	0.874 UI	0.46
Bismuth-214	PCI/G	0.869	0.17	0.841	0.16	0.787	0.16	0.611	0.15	0.881	0.18	0.849	0.23
Cesium-137	PCI/G	0.067 U	0.04	0.0721 U	0.04	0.0544 U	0.03	0.0606 U	0.03	0.108	0.06	0.172	0.08
Cobalt-60	PCI/G												
Gross Alpha	PCI/G	14.2	3.08	10.8	2.89	11.4	2.9	11	3.22	10.9	4.83	13.1	5.05
Gross Beta	PCI/G	26	2.73	18.3	2.7	22.4	2.81	20.2	2.72	65.8	7.16	28.1	4.71
Lead-211	PCI/G	1.36 U	1.1	1.34 U	1.06	1.26 U	0.75	1.23 U	1.05	1.55 U	0.98	2.04 U	1.24
Lead-212	PCI/G	0.876	0.12	0.766	0.1	0.854	0.12	0.792	0.11	0.776	0.14	1.03	0.15
Lead-214	PCI/G	0.969	0.17	0.835	0.13	0.885	0.16	0.919	0.16	1.02	0.18	0.889	0.22
Potassium-40	PCI/G	23.1	2.4	19.7	2.08	20.2	2.24	21.2	2.38	21.5	2.12	21.9	2.86
Protactinium-234	PCI/G	0.559 U	0.35	0.485 U	0.28	0.432 U	0.25	0.48 U	0.32	0.558 U	0.32	0.735 U	0.42
Radium-226	PCI/G	0.869	0.17	0.841	0.16	0.787	0.16	0.611	0.15	0.881	0.18	0.849	0.23
Thallium-208	PCI/G	0.399	0.1	0.237	0.07	0.244	0.06	0.105 UI	0.08	0.314	0.08	0.248	0.1
Thorium-230	PCI/G	0.869	0.17	0.841	0.16	0.787	0.16	0.611	0.15	0.881	0.18	0.849	0.23
Thorium-234	PCI/G	1.01 U	0.57	1.61	0.86	0.859	0.62	1.02 UI	0.83	1.41	0.62	0.806 UI	0.6
Uranium-235	PCI/G	0.34 U	0.2	0.323 U	0.19	0.281 U	0.17	0.297 U	0.18	0.343 U	0.2	0.352 U	0.21

Note:
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(U) = Uncertainty
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UI = Gamma Spectroscopy − Uncertain identification
Americium-241 and Cobalt-60 were not analyzed for these samples, but were presented to allow for cross comparison.

Table B-1R
SEAD-12 Complete Radiological Soil Sample Results
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID		S12EXSW-O-8-02		S12EXSW-O-8-03		S12EXSW-O-8-03		S12EXSW-O-8-03		S12EXSW-O-8-06		S12EXPR-O-7-01	
MATRIX		SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
SAMPLE ID		S12EXSW-O-8-02		S12EXSW-O-8-03		S12EXSW-O-8-03RE		S12EXSW-O-8-03RE2		S12EXSW-O-8-05R		S12EXPR-O-7-01	
TOP OF SAMPLE		0		0		0		0		0		0	
BOTTOM OF SAMPLE		0.2		0.2		0.2		0.2		0.2		0.2	
SAMPLE DATE		10/1/2009		10/1/2009		10/7/2009		10/9/2009		10/1/2009		10/1/2009	
QC CODE		SA		SA		SA		SA		SA		SA	
STUDY ID		RA		RA		RA		RA		RA		RA	
AREA		PIT B		PIT B		PIT B		PIT B		PIT B		PIT B	
Parameter	**Units**	Value (Q)	(U)	Value (Q)	(U)	Value (Q)	(U)	Value (Q)	(U)	Value (Q)	(U)	Value (Q)	(U)
Actinium-228	PCI/G	0.855	0.3	0.652	0.14	1.18	0.3	1.32	0.31	0.908	0.34	0.968	0.33
Americium-241	PCI/G												
Bismuth-211	PCI/G	0.28 UI	0.45	0.142 UI	0.21	0.285 UI	0.43	0.266 UI	0.51	0.37 UI	0.56	0.414 UI	0.6
Bismuth-212	PCI/G	0.546 UI	0.46	0.255 UI	0.15	0.54 U	0.3	0.607 U	0.44	0.839 UI	0.45	0.693 U	0.47
Bismuth-214	PCI/G	0.698	0.14	0.574	0.09	0.625	0.16	0.897	0.18	0.773	0.2	0.882	0.2
Cesium-137	PCI/G	0.0561 U	0.03	0.0273 U	0.02	0.0523 U	0.03	0.0652 U	0.07	0.0823 U	0.05	0.164	0.06
Cobalt-60	PCI/G												
Gross Alpha	PCI/G	5.25	2.62	11	5.94	12.6	5.11	9.61	4.93	12.1	5.07	10.8	4.81
Gross Beta	PCI/G	24.9	3.2	22.4	4.69	24.1	5.01	27.6	4.78	30.2	5.16	30.4	4.84
Lead-211	PCI/G	1.22 U	0.84	0.639 U	0.43	1.38 U	0.81	1.44 U	0.85	1.93 U	1.25	1.9 U	1.22
Lead-212	PCI/G	0.821	0.1	0.683	0.08	0.976	0.13	1.09	0.15	1.04	0.16	0.988	0.15
Lead-214	PCI/G	0.771	0.16	0.567	0.08	0.696	0.15	1.12	0.19	1.01	0.2	0.991	0.22
Potassium-40	PCI/G	21.3	2.21	18.3	1.32	25.3	2.69	25.3	2.72	23.2	2.48	24.4	2.67
Protactinium-234	PCI/G	0.418 U	0.25	0.224 U	0.13	0.494 U	0.3	0.495 U	0.32	0.658 U	0.42	0.693 U	0.4
Radium-226	PCI/G	0.698	0.14	0.574	0.09	0.625	0.16	0.897	0.18	0.773	0.2	0.882	0.2
Thallium-208	PCI/G	0.276	0.07	0.213	0.04	0.287	0.07	0.298	0.09	0.339	0.12	0.343	0.1
Thorium-230	PCI/G	0.698	0.14	0.574	0.09	0.625	0.16	0.897	0.18	0.773	0.2	0.882	0.2
Thorium-234	PCI/G	1.57	0.71	0.901	0.29	0.918	0.51	1.25	0.51	1.55	0.81	1 UI	1.39
Uranium-235	PCI/G	0.296 U	0.19	0.137 U	0.09	0.289 U	0.19	0.26 U	0.15	0.421 U	0.26	0.441 U	0.28

Note:
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Americium-241 and Cobalt-60 were not analyzed for these samples, but were presented to allow for cross comparison.

Table B-1R
SEAD-12 Complete Radiological Soil Sample Results
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID		S12EXPR-O-8-02		S12EXPR-O-8-03		S12EXPR-O-8-06		S12EXFL-B-1-01		S12EXFL-B-1-01		S12EXFL-B-2-01	
MATRIX		SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
SAMPLE ID		S12EXPR-O-8-02		S12EXPR-O-8-03		S12EXPR-O-8-05R		S12EXFL-B-1-02		S12EXFL-B-1-02D		S12EXFL-B-2-01	
TOP OF SAMPLE		0		0		0		0		0		0	
BOTTOM OF SAMPLE		0.2		0.2		0.2		0.2		0.2		0.2	
SAMPLE DATE		10/1/2009		10/1/2009		10/1/2009		9/29/2009		9/30/2009		9/30/2009	
QC CODE		SA		SA		SA		SA		SA		SA	
STUDY ID		RA		RA		RA		RA		RA		RA	
AREA		PIT B		PIT B		PIT B		PIT C1		PIT C1		PIT C1	
Parameter	**Units**	Value (Q)	(U)	Value (Q)	(U)	Value (Q)	(U)	Value (Q)	(U)	Value (Q)	(U)	Value (Q)	(U)
Actinium-228	PCI/G	0.825	0.28	0.787	0.32	0.782	0.26	0.982	0.33	0.425 UI	0.32	0.802	0.23
Americium-241	PCI/G												
Bismuth-211	PCI/G	0.365 UI	0.45	0.392 UI	0.47	0.317 UI	0.46	0.375 UI	0.57	0.35 UI	0.47	0.26 UI	0.34
Bismuth-212	PCI/G	0.655 U	0.37	0.694 U	0.38	0.608 UI	0.47	0.75 U	0.4	0.609 U	0.34	0.451 UI	0.3
Bismuth-214	PCI/G	0.686	0.16	0.899	0.17	0.693	0.15	0.89	0.24	0.703	0.2	0.624	0.13
Cesium-137	PCI/G	0.0709 U	0.04	0.114	0.06	0.0544 U	0.03	0.0705 U	0.04	0.144	0.06	0.0532 U	0.03
Cobalt-60	PCI/G												
Gross Alpha	PCI/G	11.4	3.66	10.2	3.87	13.4	5.17	7.47	3.87	8.53	3.49	6.97	4.66
Gross Beta	PCI/G	19.3	3.07	22.1	3.86	29.4	4.68	19.1	4.59	20.6	3.91	16.3	4.53
Lead-211	PCI/G	1.59 U	0.94	1.79 U	1.06	1.57 U	0.94	2.01 U	1.21	1.34 U	0.9	1.23 U	0.79
Lead-212	PCI/G	0.806	0.13	0.862	0.12	0.903	0.13	1.01	0.15	0.84	0.11	0.745	0.09
Lead-214	PCI/G	0.79	0.16	0.9	0.17	0.781	0.16	0.905	0.2	0.818	0.17	0.672	0.12
Potassium-40	PCI/G	20.4	2.06	18.9	2.13	21.9	2.45	23.2	2.87	17.9	2.15	19.1	1.79
Protactinium-234	PCI/G	0.522 U	0.33	0.575 U	0.34	0.524 U	0.29	0.659 U	0.4	0.575 U	0.35	0.389 U	0.24
Radium-226	PCI/G	0.686	0.16	0.899	0.17	0.693	0.15	0.89	0.24	0.703	0.2	0.624	0.13
Thallium-208	PCI/G	0.279	0.07	0.273	0.08	0.261	0.08	0.278	0.1	0.266	0.08	0.256	0.06
Thorium-230	PCI/G	0.686	0.16	0.899	0.17	0.693	0.15	0.89	0.24	0.703	0.2	0.624	0.13
Thorium-234	PCI/G	0.889	0.61	1.07	0.77	0.887 UI	0.89	0.855	0.55	0.945 UI	0.77	0.753	0.46
Uranium-235	PCI/G	0.349 U	0.21	0.395 U	0.26	0.322 U	0.19	0.352 U	0.21	0.311 U	0.18	0.285 U	0.17

Note:
(Q) = Qualifer
(U) = Uncertainty
U = Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI = Gamma Spectroscopy − Uncertain identification
Americium-241 and Cobalt-60 were not analyzed for these samples, but were presented to allow for cross comparison.

Table B-1R
SEAD-12 Complete Radiological Soil Sample Results
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID		S12EXFL-B-2-01		S12EXFL-C-2-01		S12EXFL-E-1-01		S12EXSW-A-2-01		S12EXSW-B-1-01		S12EXSW-B-2-01	
MATRIX		SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
SAMPLE ID		S12EXFL-B-2-01D		S12EXFL-C-2-01		S12EXFL-E-1-01		S12EXSW-A-2-01		S12EXSW-B-1-01		S12EXSW-B-2-01	
TOP OF SAMPLE		0		0		0		0		0		0	
BOTTOM OF SAMPLE		0.2		0.2		0.2		0.2		0.2		0.2	
SAMPLE DATE		10/2/2009		9/29/2009		9/29/2009		9/30/2009		9/30/2009		9/30/2009	
QC CODE		SA		SA		SA		SA		SA		SA	
STUDY ID		RA		RA		RA		RA		RA		RA	
AREA		PIT C1		PIT C1		PIT C1		PIT C1		PIT C1		PIT C1	
Parameter	**Units**	Value (Q)	(U)	Value (Q)	(U)	Value (Q)	(U)	Value (Q)	(U)	Value (Q)	(U)	Value (Q)	(U)
Actinium-228	PCI/G	0.876	0.26	0.946	0.44	0.797	0.26	0.92	0.27	0.894	0.27	0.555	0.23
Americium-241	PCI/G												
Bismuth-211	PCI/G	0.321 UI	0.37	0.498 UI	0.69	0.262 UI	0.39	0.333 UI	0.49	0.341 UI	0.5	0.311 UI	0.41
Bismuth-212	PCI/G	0.567 UI	0.32	0.841 UI	0.58	0.435 U	0.4	0.628 U	0.39	0.661 UI	0.64	0.614 U	0.34
Bismuth-214	PCI/G	0.903	0.17	1.24	0.23	0.742	0.14	0.785	0.16	0.666	0.16	0.694	0.16
Cesium-137	PCI/G	0.0604 U	0.04	0.0994 U	0.06	0.0558 U	0.03	0.0958	0.05	0.06 U	0.04	0.0611 U	0.04
Cobalt-60	PCI/G												
Gross Alpha	PCI/G	6.88	3.82	5.9	4.09	9.58	4.89	15.1	2.92	7.11	4.26	10.4	3.17
Gross Beta	PCI/G	20.3	4.7	21.3	4.78	15.7	4.31	27	2.48	20.5	4.38	18.8	2.51
Lead-211	PCI/G	1.42 U	0.91	2.07 U	1.58	1.24 U	0.72	1.55 U	1.27	1.71 U	1.09	1.47 U	0.9
Lead-212	PCI/G	0.819	0.11	0.277 UI	0.17	0.731	0.11	1.02	0.13	0.846	0.12	0.797	0.12
Lead-214	PCI/G	0.793	0.14	1.3	0.25	0.866	0.14	0.822	0.17	0.738	0.18	0.775	0.15
Potassium-40	PCI/G	19.9	1.99	23.9	2.7	20.8	1.98	23.1	2.31	20.6	2.26	19.6	1.96
Protactinium-234	PCI/G	0.505 U	0.29	0.662 U	0.4	0.388 U	0.24	0.542 U	0.33	0.519 U	0.34	0.535 U	0.33
Radium-226	PCI/G	0.903	0.17	1.24	0.23	0.742	0.14	0.785	0.16	0.666	0.16	0.694	0.16
Thallium-208	PCI/G	0.299	0.06	0.303	0.09	0.213	0.05	0.301	0.08	0.32	0.08	0.214	0.07
Thorium-230	PCI/G	0.903	0.17	1.24	0.23	0.742	0.14	0.785	0.16	0.666	0.16	0.694	0.16
Thorium-234	PCI/G	1.32	0.79	1.48 UI	1.51	0.884 U	0.8	1.17	0.68	1.17 UI	0.88	0.872	0.72
Uranium-235	PCI/G	0.315 U	0.19	0.479 U	0.3	0.283 U	0.17	0.355 U	0.22	0.376 U	0.22	0.324 U	0.19

Note:
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Americium-241 and Cobalt-60 were not analyzed for these samples, but were presented to allow for cross comparison.

Table B-1R
SEAD-12 Complete Radiological Soil Sample Results
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID		S12EXSW-C-1-01		S12EXSW-C-2-01		S12EXSW-D-1-01		S12EXSW-D-2-01		S12EXSW-E-1-01		S12EXPR-A-2-01	
MATRIX		SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
SAMPLE ID		S12EXSW-C-1-01		S12EXSW-C-2-01		S12EXSW-D-1-01		S12EXSW-D-2-01		S12EXSW-E-1-01		S12EXPR-A-2-01	
TOP OF SAMPLE		0		0		0		0		0		0	
BOTTOM OF SAMPLE		0.2		0.2		0.2		0.2		0.2		0.2	
SAMPLE DATE		9/30/2009		9/30/2009		9/29/2009		9/30/2009		9/29/2009		9/30/2009	
QC CODE		SA		SA		SA		SA		SA		SA	
STUDY ID		RA		RA		RA		RA		RA		RA	
AREA		PIT C1		PIT C1		PIT C1		PIT C1		PIT C1		PIT C1	
Parameter	**Units**	Value (Q)	(U)	Value (Q)	(U)	Value (Q)	(U)	Value (Q)	(U)	Value (Q)	(U)	Value (Q)	(U)
Actinium-228	PCI/G	0.836	0.22	0.55 UI	0.43	1	0.25	0.857	0.25	1.04	0.31	0.84	0.32
Americium-241	PCI/G												
Bismuth-211	PCI/G	0.323 UI	0.41	0.359 UI	0.51	0.312 UI	0.51	0.302 UI	0.45	0.354 UI	0.51	0.389 UI	0.53
Bismuth-212	PCI/G	0.571 UI	0.43	0.791 UI	0.68	0.622 UI	0.4	0.513 UI	0.33	0.722 UI	0.56	0.691 UI	0.43
Bismuth-214	PCI/G	0.914	0.15	0.83	0.19	0.931	0.18	0.643	0.15	0.929	0.17	0.783	0.18
Cesium-137	PCI/G	0.0592 U	0.04	0.0754 U	0.05	0.187	0.07	0.0674 U	0.04	0.158	0.07	0.13	0.06
Cobalt-60	PCI/G												
Gross Alpha	PCI/G	11.4	4	8.2	4.01	10.9	3.38	13.8	4.07	19.9	6.14	18.8	6.32
Gross Beta	PCI/G	20.1	4.08	21.1	4.06	29.5	3.38	22.8	3.24	26.9	4.62	36.2	5.47
Lead-211	PCI/G	1.33 U	0.83	1.67 U	1.1	1.44 U	0.86	1.19 U	0.83	1.66 U	1.11	1.76 U	1.07
Lead-212	PCI/G	0.743	0.1	0.781	0.14	0.962	0.14	0.702	0.1	1	0.13	0.933	0.14
Lead-214	PCI/G	1.08	0.15	0.865	0.18	0.938	0.18	0.722	0.16	1.06	0.18	1.01	0.19
Potassium-40	PCI/G	19.3	2.22	17.9	2.17	22.2	2.47	19.5	2.02	22.6	2.47	21.3	2.37
Protactinium-234	PCI/G	0.441 U	0.28	0.662 U	0.41	0.431 U	0.29	0.397 U	0.26	0.573 U	0.39	0.576 U	0.35
Radium-226	PCI/G	0.914	0.15	0.83	0.19	0.931	0.18	0.643	0.15	0.929	0.17	0.783	0.18
Thallium-208	PCI/G	0.228	0.06	0.139 UI	0.08	0.329	0.07	0.24	0.06	0.395	0.08	0.225	0.09
Thorium-230	PCI/G	0.914	0.15	0.83	0.19	0.931	0.18	0.643	0.15	0.929	0.17	0.783	0.18
Thorium-234	PCI/G	1.28	0.71	0.967	0.57	1.57	0.53	0.888 UI	0.83	1.17 UI	0.96	0.951 U	1.25
Uranium-235	PCI/G	0.339 U	0.2	0.335 U	0.2	0.275 U	0.16	0.287 U	0.17	0.374 U	0.23	0.417 U	0.25

Note:
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U = Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI = Gamma Spectroscopy − Uncertain identification
Americium-241 and Cobalt-60 were not analyzed for these samples, but were presented to allow for cross comparison.

Table B-1R
SEAD-12 Complete Radiological Soil Sample Results
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID		S12EXPR-B-1-01		S12EXPR-B-2-01		S12EXPR-C-1-01		S12EXPR-C-2-01		S12EXPR-D-1-01		S12EXPR-D-2-01	
MATRIX		SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
SAMPLE ID		S12EXPR-B-1-01		S12EXPR-B-2-01		S12EXPR-C-1-01		S12EXPR-C-2-01		S12EXPR-D-1-01		S12EXPR-D-2-01	
TOP OF SAMPLE		0		0		0		0		0		0	
BOTTOM OF SAMPLE		0.2		0.2		0.2		0.2		0.2		0.2	
SAMPLE DATE		9/30/2009		9/30/2009		10/7/2009		9/30/2009		9/29/2009		9/30/2009	
QC CODE		SA		SA		SA		SA		SA		SA	
STUDY ID		RA		RA		RA		RA		RA		RA	
AREA		PIT C1		PIT C1		PIT C1		PIT C1		PIT C1		PIT C1	
Parameter	**Units**	Value (Q)	(U)	Value (Q)	(U)	Value (Q)	(U)	Value (Q)	(U)	Value (Q)	(U)	Value (Q)	(U)
Actinium-228	PCI/G	0.513 UI	0.35	0.832	0.21	1.03	0.27	0.825	0.23	1.52	0.38	0.873	0.24
Americium-241	PCI/G												
Bismuth-211	PCI/G	0.363 UI	0.53	0.231 UI	0.34	0.311 UI	0.41	0.258 UI	0.35	0.322 UI	0.62	0.25 UI	0.43
Bismuth-212	PCI/G	0.836 UI	0.43	0.419 UI	0.32	0.586 U	0.41	0.508 UI	0.3	0.756 UI	0.57	0.511 U	0.29
Bismuth-214	PCI/G	0.317 UI	0.21	0.947	0.15	0.717	0.14	0.529	0.15	1.28	0.24	0.643	0.13
Cesium-137	PCI/G	0.0886 U	0.05	0.0498 U	0.03	0.152	0.07	0.0539 U	0.03	0.0771 U	0.05	0.0542 UI	0.09
Cobalt-60	PCI/G												
Gross Alpha	PCI/G	8.78	2.14	11.6	4.91	13.9	5.21	5.81	3.43	8.39	4.03	7.02	4.32
Gross Beta	PCI/G	25.1	2.32	20.9	4.35	22.6	4.61	34.6	5.04	24.3	5.2	17.4	4.35
Lead-211	PCI/G	1.81 U	1.26	1.02 U	0.75	1.4 U	0.85	1.13 U	0.77	1.66 U	1.23	1.26 U	0.79
Lead-212	PCI/G	0.965	0.14	0.867	0.11	1.01	0.12	0.882	0.12	1.36	0.16	0.703	0.11
Lead-214	PCI/G	0.913	0.19	0.869	0.13	0.852	0.15	0.62	0.13	1.54	0.23	0.81	0.16
Potassium-40	PCI/G	21	2.65	20.3	1.54	21.7	2.22	20	2.2	29.9	3.16	18.5	2.01
Protactinium-234	PCI/G	0.73 U	0.42	0.398 U	0.23	0.495 U	0.28	0.386 U	0.24	0.663 U	0.41	0.465 U	0.28
Radium-226	PCI/G	0.317 UI	0.21	0.947	0.15	0.717	0.14	0.529	0.15	1.28	0.24	0.643	0.13
Thallium-208	PCI/G	0.348	0.11	0.278	0.06	0.211	0.08	0.219	0.06	0.447	0.09	0.256	0.06
Thorium-230	PCI/G	0.317 UI	0.21	0.947	0.15	0.717	0.14	0.529	0.15	1.28	0.24	0.643	0.13
Thorium-234	PCI/G	1.08	0.74	1.39	0.56	0.953 UI	0.72	0.667 UI	0.61	2.03	0.58	0.615 UI	0.6
Uranium-235	PCI/G	0.315 U	0.19	0.193 U	0.23	0.304 U	0.18	0.275 U	0.16	0.304 U	0.19	0.257 U	0.15

Note:
(Q) = Qualifer
(U) = Uncertainty
U = Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI = Gamma Spectroscopy − Uncertain identification
Americium-241 and Cobalt-60 were not analyzed for these samples, but were presented to allow for cross comparison.

Table B-1R
SEAD-12 Complete Radiological Soil Sample Results
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID		S12EXPR-E-1-01		S12EXFL-I-3-01		S12EXFL-I-4-01		S12EXFL-J-2-01		S12EXFL-J-4-01		S12EXFL-K-3-01	
MATRIX		SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
SAMPLE ID		S12EXPR-E-1-01		S12EXFL-I-3-01		S12EXFL-I-4-01		S12EXFL-J-2-01		S12EXFL-J-4-01		S12EXFL-K-3-01	
TOP OF SAMPLE		0		0		0		0		0		0	
BOTTOM OF SAMPLE		0.2		0.2		0.2		0.2		0.2		0.2	
SAMPLE DATE		9/29/2009		9/30/2009		10/15/2009		10/7/2009		9/30/2009		9/30/2009	
QC CODE		SA		SA		SA		SA		SA		SA	
STUDY ID		RA		RA		RA		RA		RA		RA	
AREA		PIT C1		PIT C2		PIT C2		PIT C2		PIT C2		PIT C2	
Parameter	**Units**	Value (Q)	(U)	Value (Q)	(U)	Value (Q)	(U)	Value (Q)	(U)	Value (Q)	(U)	Value (Q)	(U)
Actinium-228	PCI/G	0.992	0.39	0.92	0.29	0.396 UI	0.26	0.738	0.26	0.74	0.28	0.602	0.34
Americium-241	PCI/G												
Bismuth-211	PCI/G	0.416 UI	0.65	0.318 UI	0.37	0.258 UI	0.4	0.261 UI	0.39	0.311 UI	0.48	0.389 UI	2.02
Bismuth-212	PCI/G	0.925 UI	0.54	0.616 U	0.6	0.562 UI	0.29	0.533 U	0.33	0.592 U	0.42	0.602	0.51
Bismuth-214	PCI/G	1.01	0.22	0.748	0.16	0.611	0.13	0.72	0.15	0.548	0.14	5.49	0.72
Cesium-137	PCI/G	0.326	0.09	0.0669 U	0.04	0.0569 U	0.03	0.0516 U	0.03	0.0561 U	0.03	0.0836 U	0.07
Cobalt-60	PCI/G												
Gross Alpha	PCI/G	5.66	3.21	10.5	3.83	12.5	5.14	8.3	4.37	8.14	3.37	14	5.64
Gross Beta	PCI/G	22.4	4.1	31.1	4.29	33.3	5.13	55.3	6.53	24.6	3.38	32	5.23
Lead-211	PCI/G	2.13 U	1.27	1.4 U	0.86	1.45 U	0.86	1.41 U	0.86	1.34 U	0.83	1.98 U	1.27
Lead-212	PCI/G	1.06	0.18	1.05	0.12	0.802	0.1	0.817	0.1	0.899	0.12	1	0.15
Lead-214	PCI/G	1.2	0.24	0.868	0.14	0.71	0.14	0.802	0.14	0.844	0.17	6.23	0.77
Potassium-40	PCI/G	25.5	2.68	26	2.74	19.4	2.04	20.6	1.99	20.2	2.36	22.6	2.59
Protactinium-234	PCI/G	0.839 U	0.49	0.57 U	0.33	0.46 U	0.28	0.416 U	0.25	0.423 U	0.28	0.708 U	0.42
Radium-226	PCI/G	1.01	0.22	0.748	0.16	0.611	0.13	0.72	0.15	0.548	0.14	5.49	0.72
Thallium-208	PCI/G	0.414	0.12	0.295	0.07	0.303	0.07	0.283	0.06	0.319	0.08	0.126 UI	0.09
Thorium-230	PCI/G	1.01	0.22	0.748	0.16	0.611	0.13	0.72	0.15	0.548	0.14	5.49	0.72
Thorium-234	PCI/G	1.04	0.79	1.58	0.72	1.78 U	1.41	1.15	0.6	0.931 UI	1.02	1.08	0.59
Uranium-235	PCI/G	0.382 U	0.23	0.346 U	0.21	0.319 U	0.19	0.324 U	0.19	0.336 U	0.2	0.379 U	0.22

Note:
(Q) = Qualifer
(U) = Uncertainty
U = Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI = Gamma Spectroscopy − Uncertain identification
Americium-241 and Cobalt-60 were not analyzed for these samples, but were presented to allow for cross comparison.

Table B-1R
SEAD-12 Complete Radiological Soil Sample Results
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID		S12EXFL-K-3-01		S12EXFL-K-3-02		S12EXSW-I-2-01		S12EXSW-I-2-02V		S12EXSW-I-2-03		S12EXSW-I-3-01	
MATRIX		SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
SAMPLE ID		S12EXFL-K-3-01RE		S12EXFL-K-3-02		S12EXSW-I-2-01		S12EXSW-I-2-02		S12EXSW-I-2-03		S12EXSW-I-3-01	
TOP OF SAMPLE		0		0		0		0		0		0	
BOTTOM OF SAMPLE		0.2		0.2		0.2		0.2		0.2		0.2	
SAMPLE DATE		9/30/2009		10/27/2009		9/30/2009		10/7/2009		10/7/2009		9/30/2009	
QC CODE		SA		SA		SA		SA		SA		SA	
STUDY ID		RA		RA		RA		RA		RA		RA	
AREA		PIT C2		PIT C2		PIT C2		PIT C2		PIT C2		PIT C2	
Parameter	**Units**	Value (Q)	(U)	Value (Q)	(U)	Value (Q)	(U)	Value (Q)	(U)	Value (Q)	(U)	Value (Q)	(U)
Actinium-228	PCI/G	1.2	0.32	1	0.24	0.674	0.22	0.424 UI	0.27	0.744	0.27	0.65	0.26
Americium-241	PCI/G												
Bismuth-211	PCI/G	0.309 UI	0.5	0.257 UI	0.39	0.24 UI	0.33	0.296 UI	0.45	0.386 UI	0.47	0.276 UI	0.47
Bismuth-212	PCI/G	0.582 U	0.4	0.479 UI	0.37	0.474 UI	0.29	0.6 UI	0.42	0.71 UI	0.43	0.552 UI	0.29
Bismuth-214	PCI/G	0.652	0.17	0.678	0.13	0.67	0.14	0.94	0.16	0.623	0.19	0.649	0.14
Cesium-137	PCI/G	0.0689 U	0.04	0.0488 U	0.03	0.0475 U	0.03	0.0664 U	0.04	0.0696 U	0.05	0.0465 U	0.03
Cobalt-60	PCI/G												
Gross Alpha	PCI/G	14	4.96	10	5.49	6.95	4.01	8.9	4.3	8.08	3.58	16	5.83
Gross Beta	PCI/G	29.1	4.62	22.7	3.88	27.5	4.55	46	5.96	22	3.89	23.4	4.58
Lead-211	PCI/G	1.48 U	0.89	1.2 U	0.74	1.13 U	0.66	1.47 U	0.88	1.87 U	1.15	1.28 U	0.86
Lead-212	PCI/G	1.05	0.13	0.889	0.1	0.798	0.1	0.813	0.11	0.911	0.14	0.8	0.12
Lead-214	PCI/G	0.99	0.18	0.91	0.14	0.826	0.12	0.924	0.16	0.938	0.17	0.796	0.17
Potassium-40	PCI/G	23.6	2.62	21.1	1.94	21.7	2.05	23.3	2.6	22	2.42	19.5	2.21
Protactinium-234	PCI/G	0.448 U	0.29	0.4 U	0.24	0.364 U	0.23	0.507 U	0.31	0.547 U	0.33	0.416 U	0.24
Radium-226	PCI/G	0.652	0.17	0.678	0.13	0.67	0.14	0.94	0.16	0.623	0.19	0.649	0.14
Thallium-208	PCI/G	0.345	0.08	0.266	0.06	0.288	0.07	0.296	0.07	0.306	0.09	0.255	0.07
Thorium-230	PCI/G	0.652	0.17	0.678	0.13	0.67	0.14	0.94	0.16	0.623	0.19	0.649	0.14
Thorium-234	PCI/G	1.13 UI	1.04	1.65 U	1.57	0.884 UI	0.58	1.03 UI	0.82	1.28 U	0.77	0.757 U	0.67
Uranium-235	PCI/G	0.318 U	0.2	0.274 U	0.17	0.264 U	0.17	0.294 U	0.27	0.447 U	0.27	0.293 U	0.19

Note:
(Q) = Qualifer
(U) = Uncertainty
U = Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI = Gamma Spectroscopy − Uncertain identification
Americium-241 and Cobalt-60 were not analyzed for these samples, but were presented to allow for cross comparison.

Table B-1R
SEAD-12 Complete Radiological Soil Sample Results
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID		S12EXSW-I-3-01R2		S12EXSW-I-3-02		S12EXSW-I-3-04		S12EXSW-I-4-01		S12EXSW-J-2-01		S12EXSW-J-2-02	
MATRIX		SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
SAMPLE ID		S12EXSW-I-3-05		S12EXSW-I-3-02		S12EXSW-I-3-04		S12EXSW-I-4-01		S12EXSW-J-2-01		S12EXSW-J-2-02	
TOP OF SAMPLE		0		0		0		0		0		0	
BOTTOM OF SAMPLE		0.2		0.2		0.2		0.2		0.2		0.2	
SAMPLE DATE		10/5/2009		10/5/2009		10/15/2009		10/15/2009		9/30/2009		10/7/2009	
QC CODE		SA		SA		SA		SA		SA		SA	
STUDY ID		RA		RA		RA		RA		RA		RA	
AREA		PIT C2		PIT C2		PIT C2		PIT C2		PIT C2		PIT C2	
Parameter	**Units**	Value (Q)	(U)	Value (Q)	(U)	Value (Q)	(U)	Value (Q)	(U)	Value (Q)	(U)	Value (Q)	(U)
Actinium-228	PCI/G	0.841	0.26	0.709	0.26	0.659	0.18	0.799	0.23	0.952	0.33	0.756	0.27
Americium-241	PCI/G												
Bismuth-211	PCI/G	0.26 UI	0.39	0.36 UI	0.43	0.243 UI	0.32	0.294 UI	0.34	0.336 UI	0.49	0.306 UI	0.41
Bismuth-212	PCI/G	0.52 UI	0.34	0.621 U	0.35	0.478 U	0.29	0.511 UI	0.36	0.647 UI	0.46	0.562 U	0.4
Bismuth-214	PCI/G	0.666	0.13	0.581	0.17	0.423	0.12	0.6	0.12	0.822	0.17	0.715	0.15
Cesium-137	PCI/G	0.0542 U	0.03	0.129	0.05	0.0427 U	0.03	0.0551 U	0.03	0.0672 U	0.04	0.0584 U	0.03
Cobalt-60	PCI/G												
Gross Alpha	PCI/G	10.5	4.6	11.1	4.64	6.43	3.25	19.2	6.35	11.1	4.96	14.2	5.54
Gross Beta	PCI/G	22.5	4.3	35.9	5.69	14	2.96	34.4	5.67	34.6	5.59	27.3	4.69
Lead-211	PCI/G	1.15 U	0.67	1.72 U	1.08	1.18 U	0.68	1.33 U	0.83	1.63 U	1.05	1.49 U	0.88
Lead-212	PCI/G	0.767	0.1	0.829	0.13	0.578	0.08	0.832	0.1	1.27	0.16	0.746	0.1
Lead-214	PCI/G	0.743	0.14	0.748	0.16	0.568	0.12	0.718	0.12	1.09	0.18	0.761	0.15
Potassium-40	PCI/G	19.5	2.14	19	2.12	17.3	1.89	19.5	1.9	34.4	3.53	20.8	2.15
Protactinium-234	PCI/G	0.403 U	0.25	0.54 U	0.32	0.335 U	0.2	0.43 U	0.26	0.532 U	0.31	0.524 U	0.32
Radium-226	PCI/G	0.666	0.13	0.581	0.17	0.423	0.12	0.6	0.12	0.822	0.17	0.715	0.15
Thallium-208	PCI/G	0.242	0.07	0.211	0.08	0.145	0.05	0.204	0.06	0.348	0.07	0.279	0.08
Thorium-230	PCI/G	0.666	0.13	0.581	0.17	0.423	0.12	0.6	0.12	0.822	0.17	0.715	0.15
Thorium-234	PCI/G	0.872 UI	0.79	1.22 U	0.98	1.6 U	1.32	1.75	1.22	1.07 U	0.79	0.968 UI	0.76
Uranium-235	PCI/G	0.273 U	0.16	0.403 U	0.24	0.289 U	0.17	0.311 U	0.18	0.369 U	0.22	0.307 U	0.19

Note:
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Americium-241 and Cobalt-60 were not analyzed for these samples, but were presented to allow for cross comparison.

Table B-1R
SEAD-12 Complete Radiological Soil Sample Results
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION	SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12
LOCATION ID	S12EXSW-J-3-01	S12EXSW-J-3-02	S12EXSW-J-3-02	S12EXSW-J-4-01	S12EXSW-J-4-02	S12EXSW-J-4-03
MATRIX	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID	S12EXSW-J-3-01	S12EXSW-J-3-02	S12EXSW-J-3-02RE	S12EXSW-J-4-01	S12EXSW-J-4-02	S12EXSW-J-4-03
TOP OF SAMPLE	0	0	0	0	0	0
BOTTOM OF SAMPLE	0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE	9/29/2009	10/7/2009	10/9/2009	9/29/2009	9/29/2009	9/30/2009
QC CODE	SA	SA	SA	SA	SA	SA
STUDY ID	RA	RA	RA	RA	RA	RA
AREA	PIT C2	PIT C2	PIT C2	PIT C2	PIT C2	PIT C2

Parameter	**Units**	Value (Q)	(U)	Value (Q)	(U)	Value (Q)	(U)	Value (Q)	(U)	Value (Q)	(U)	Value (Q)	(U)
Actinium-228	PCI/G	0.61	0.24	0.661	0.26	1.12	0.29	0.761	0.25	0.64	0.27	1.7	0.44
Americium-241	PCI/G												
Bismuth-211	PCI/G	0.329 UI	0.48	0.341 UI	0.44	0.36 UI	0.48	0.307 UI	0.4	0.318 UI	0.44	0.413 UI	0.63
Bismuth-212	PCI/G	0.605 U	0.52	0.638 UI	0.43	0.643 UI	0.46	0.534 U	0.47	0.622 U	0.35	0.802 UI	0.7
Bismuth-214	PCI/G	0.817	0.16	0.994	0.16	0.752	0.16	0.627	0.15	0.832	0.17	1.05	0.23
Cesium-137	PCI/G	0.0621 U	0.04	0.322	0.07	0.217	0.07	0.059 U	0.04	0.0702 U	0.04	0.093 U	0.05
Cobalt-60	PCI/G												
Gross Alpha	PCI/G	11.2	5.38	20.2	6.11	16.9	5.82	8.15	5.24	6.78	3.77	16.9	5.73
Gross Beta	PCI/G	23.5	4.54	29.1	5.33	24.9	4.57	20	4.34	18.9	4.61	28.4	4.82
Lead-211	PCI/G	1.49 U	0.88	1.41 U	1.32	1.77 U	1.05	1.32 U	1.51	1.5 U	0.88	1.95 U	1.45
Lead-212	PCI/G	0.963	0.13	0.913	0.12	0.961	0.13	0.681	0.1	0.805	0.12	1.35	0.19
Lead-214	PCI/G	0.893	0.17	0.986	0.16	0.908	0.17	0.833	0.15	0.772	0.16	1.05	0.23
Potassium-40	PCI/G	17.3	1.91	19.9	2.07	22.7	2.3	18.7	2.08	18.3	2.08	31.1	3.05
Protactinium-234	PCI/G	0.54 U	0.31	0.494 U	0.31	0.486 U	0.3	0.489 U	0.3	0.549 U	0.33	0.657 U	0.43
Radium-226	PCI/G	0.817	0.16	0.994	0.16	0.752	0.16	0.627	0.15	0.832	0.17	1.05	0.23
Thallium-208	PCI/G	0.294	0.06	0.312	0.08	0.302	0.08	0.27	0.08	0.216	0.07	0.376	0.12
Thorium-230	PCI/G	0.817	0.16	0.994	0.16	0.752	0.16	0.627	0.15	0.832	0.17	1.05	0.23
Thorium-234	PCI/G	0.786 U	0.9	1.02 U	0.56	1.18 U	0.69	0.953 U	0.95	0.991	0.58	2.5	0.93
Uranium-235	PCI/G	0.34 U	0.2	0.356 U	0.2	0.371 U	0.23	0.322 U	0.2	0.318 U	0.19	0.434 U	0.27

Note:
(Q) = Qualifer
(U) = Uncertainty
U = Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI = Gamma Spectroscopy − Uncertain identification
Americium-241 and Cobalt-60 were not analyzed for these samples, but were presented to allow for cross comparison.

Table B-1R
SEAD-12 Complete Radiological Soil Sample Results
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID		S12EXSW-J-4-04		S12EXSW-J-5-01		S12EXSW-K-3-01		S12EXSW-K-4-01		S12EXPR-I-2-01		S12EXPR-I-2-02		S12EXPR-I-3-01	
MATRIX		SOIL		SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
SAMPLE ID		S12EXSW-J-4-04		S12EXSW-J-5-01		S12EXSW-K-3-01		S12EXSW-K-4-01		S12EXPR-I-2-01		S12EXPR-I-2-02		S12EXPR-I-3-01	
TOP OF SAMPLE		0		0		0		0		0		0		0	
BOTTOM OF SAMPLE		0.2		0.2		0.2		0.2		0.2		0.2		0.2	
SAMPLE DATE		10/15/2009		9/29/2009		9/30/2009		9/30/2009		9/30/2009		10/7/2009		9/30/2009	
QC CODE		SA		SA		SA		SA		SA		SA		SA	
STUDY ID		RA		RA		RA		RA		RA		RA		RA	
AREA		PIT C2		PIT C2		PIT C2		PIT C2		PIT C2		PIT C2		PIT C2	
Parameter	**Units**	Value (Q)	(U)	Value (Q)	(U)	Value (Q)	(U)	Value (Q)	(U)	Value (Q)	(U)	Value (Q)	(U)	Value (Q)	(U)
Actinium-228	PCI/G	0.521	0.27	1.01	0.29	1.09	0.27	0.821	0.3	0.715	0.29	1.1	0.25	0.63	0.23
Americium-241	PCI/G														
Bismuth-211	PCI/G	0.272 UI	0.37	0.297 UI	0.51	0.31 UI	0.4	0.391 UI	0.6	0.301 UI	0.44	0.282 UI	0.41	0.25 UI	0.41
Bismuth-212	PCI/G	0.505 U	0.42	0.596 UI	0.38	0.896	0.54	0.706 U	0.39	0.626 U	0.46	0.6 UI	0.43	0.477 UI	0.33
Bismuth-214	PCI/G	0.648	0.15	0.907	0.18	0.902	0.17	0.595	0.18	0.737	0.16	0.802	0.14	0.693	0.13
Cesium-137	PCI/G	0.0518 U	0.03	0.0802 U	0.04	0.06 U	0.04	0.0703 U	0.04	0.068 U	0.04	0.0835	0.07	0.0441 U	0.03
Cobalt-60	PCI/G														
Gross Alpha	PCI/G	12.2	4.92	11.8	4.85	7.37	2.96	11.7	5.23	6.94	3.62	18.5	5.48	7.86	3.8
Gross Beta	PCI/G	34.4	5.54	28	5.28	26.8	3.35	26.1	4.66	29.6	4.85	37	4.88	17.1	4.39
Lead-211	PCI/G	1.14 U	0.88	1.49 U	0.95	1.54 U	0.99	1.77 U	1.04	1.48 U	0.86	1.46 U	0.9	1.19 U	0.9
Lead-212	PCI/G	0.611	0.09	0.858	0.13	1.05	0.12	0.887	0.12	0.88	0.12	0.894	0.11	0.706	0.09
Lead-214	PCI/G	0.796	0.13	1.03	0.19	1.01	0.15	0.838	0.21	1.09	0.16	0.873	0.15	0.703	0.15
Potassium-40	PCI/G	17.4	2.07	22.1	2.31	26.9	2.59	21.9	2.43	24.4	2.42	21	2.33	19.5	1.95
Protactinium-234	PCI/G	0.384 U	0.24	0.476 U	0.31	0.535 U	0.31	0.584 U	0.35	0.527 U	0.32	0.471 U	0.3	0.455 U	0.26
Radium-226	PCI/G	0.648	0.15	0.907	0.18	0.902	0.17	0.595	0.18	0.737	0.16	0.802	0.14	0.693	0.13
Thallium-208	PCI/G	0.152	0.07	0.309	0.07	0.358	0.07	0.351	0.08	0.23	0.08	0.333	0.07	0.266	0.06
Thorium-230	PCI/G	0.648	0.15	0.907	0.18	0.902	0.17	0.595	0.18	0.737	0.16	0.802	0.14	0.693	0.13
Thorium-234	PCI/G	1.65 U	1.25	1 UI	0.79	1.26	0.71	1.08 U	0.72	1.03 U	0.84	1.2	0.7	0.787 UI	0.56
Uranium-235	PCI/G	0.263 U	0.15	0.346 U	0.2	0.325 U	0.2	0.428 U	0.26	0.353 U	0.22	0.335 U	0.29	0.275 U	0.16

Note:
(Q) = Qualifer
(U) = Uncertainty
U = Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI = Gamma Spectroscopy − Uncertain identification
Americium-241 and Cobalt-60 were not analyzed for these samples, but were presented to allow for cross comparison.

Table B-1R
SEAD-12 Complete Radiological Soil Sample Results
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID		S12EXPR-I-3-04		S12EXPR-I-4-01		S12EXPR-J-2-01		S12EXPR-J-3-01		S12EXPR-J-4-01		S12EXPR-J-4-02		S12EXPR-J-4-03	
MATRIX		SOIL		SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
SAMPLE ID		S12EXPR-I-3-04		S12EXPR-I-4-01		S12EXPR-J-2-01		S12EXPR-J-3-01		S12EXPR-J-4-01		S12EXPR-J-4-02		S12EXPR-J-4-03	
TOP OF SAMPLE		0		0		0		0		0		0		0	
BOTTOM OF SAMPLE		0.2		0.2		0.2		0.2		0.2		0.2		0.2	
SAMPLE DATE		10/15/2009		10/15/2009		9/30/2009		9/29/2009		10/2/2009		9/29/2009		10/7/2009	
QC CODE		SA		SA		SA		SA		SA		SA		SA	
STUDY ID		RA		RA		RA		RA		RA		RA		RA	
AREA		PIT C2		PIT C2		PIT C2		PIT C2		PIT C2		PIT C2		PIT C2	
Parameter	**Units**	Value (Q)	(U)	Value (Q)	(U)	Value (Q)	(U)	Value (Q)	(U)	Value (Q)	(U)	Value (Q)	(U)	Value (Q)	(U)
Actinium-228	PCI/G	0.472 UI	0.34	0.831	0.27	0.58	0.26	0.952	0.3	1.09	0.41	0.792	0.25	0.837	0.3
Americium-241	PCI/G														
Bismuth-211	PCI/G	0.353 UI	0.43	0.309 UI	0.4	0.292 UI	0.45	0.427 UI	0.56	0.48 UI	0.58	0.235 UI	0.34	0.347 UI	0.51
Bismuth-212	PCI/G	0.665 U	0.39	0.557 UI	0.46	0.707	0.39	0.753 UI	0.53	0.905 U	0.52	0.469 UI	0.32	0.73 UI	0.51
Bismuth-214	PCI/G	0.53	0.2	0.721	0.13	0.685	0.16	0.978	0.19	1.18	0.3	0.659	0.12	0.759	0.16
Cesium-137	PCI/G	0.07 U	0.04	0.0563 U	0.03	0.0656 U	0.04	0.0702 U	0.05	0.103 U	0.06	0.0453 U	0.03	0.217	0.09
Cobalt-60	PCI/G														
Gross Alpha	PCI/G	11.5	4.93	18.4	6.61	10.9	6.04	7.97	4.29	9.25	4.04	8.75	3.73	8.07	3.86
Gross Beta	PCI/G	38.8	5.56	28.1	5.11	22	4.9	19.7	4.26	26.5	5.1	17.5	3.62	19.5	4.25
Lead-211	PCI/G	1.66 U	1.03	1.28 U	0.84	1.24 U	0.95	2.18 U	1.31	2.21 U	1.42	1.02 U	0.77	1.57 U	1.28
Lead-212	PCI/G	0.877	0.13	0.706	0.12	1.01	0.12	1.12	0.16	0.859	0.16	0.841	0.1	0.816	0.13
Lead-214	PCI/G	0.777	0.15	0.797	0.15	0.896	0.16	1.06	0.2	0.985	0.21	0.769	0.12	0.908	0.18
Potassium-40	PCI/G	19.2	1.89	20.6	2.36	23	2.27	24.8	2.66	22.2	2.36	21.2	2.02	20.8	2.42
Protactinium-234	PCI/G	0.56 U	0.36	0.493 U	0.3	0.459 U	0.27	0.58 U	0.35	0.893 U	0.52	0.356 U	0.22	0.558 U	0.31
Radium-226	PCI/G	0.53	0.2	0.721	0.13	0.685	0.16	0.978	0.19	1.18	0.3	0.659	0.12	0.759	0.16
Thallium-208	PCI/G	0.268	0.07	0.296	0.06	0.266	0.07	0.239	0.11	0.279	0.1	0.228	0.06	0.32	0.08
Thorium-230	PCI/G	0.53	0.2	0.721	0.13	0.685	0.16	0.978	0.19	1.18	0.3	0.659	0.12	0.759	0.16
Thorium-234	PCI/G	0.92 U	0.92	2.69 U	1.55	0.865 U	0.57	1.43 UI	1.15	0.802 UI	1.13	0.84 U	0.71	1.02 UI	0.88
Uranium-235	PCI/G	0.34 U	0.21	0.307 U	0.19	0.296 U	0.17	0.47 U	0.29	0.442 U	0.28	0.258 U	0.16	0.292 U	0.19

Note:
(Q) = Qualifer
(U) = Uncertainty
U = Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI = Gamma Spectroscopy − Uncertain identification
Americium-241 and Cobalt-60 were not analyzed for these samples, but were presented to allow for cross comparison.

Table B-1R
SEAD-12 Complete Radiological Soil Sample Results
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID		S12EXPR-J-4-04		S12EXPR-J-5-01		S12EXPR-K-3-01		S12EXPR-K-4-01	
MATRIX		SOIL		SOIL		SOIL		SOIL	
SAMPLE ID		S12EXPR-J-4-04		S12EXPR-J-5-01		S12EXPR-K-3-01		S12EXPR-K-4-01	
TOP OF SAMPLE		0		0		0		0	
BOTTOM OF SAMPLE		0.2		0.2		0.2		0.2	
SAMPLE DATE		10/15/2009		10/7/2009		9/30/2009		9/30/2009	
QC CODE		SA		SA		SA		SA	
STUDY ID		RA		RA		RA		RA	
AREA		PIT C2		PIT C2		PIT C2		PIT C2	
Parameter	**Units**	Value (Q)	(U)	Value (Q)	(U)	Value (Q)	(U)	Value (Q)	(U)
Actinium-228	PCI/G	0.816	0.25	0.757	0.34	1.06	0.27	1.08	0.39
Americium-241	PCI/G								
Bismuth-211	PCI/G	0.312 UI	0.41	0.384 UI	0.5	0.296 UI	0.48	0.317 UI	0.44
Bismuth-212	PCI/G	0.571 UI	0.38	0.658 U	0.46	0.578 U	0.47	0.63 U	0.43
Bismuth-214	PCI/G	0.568	0.15	0.875	0.17	0.584	0.17	0.767	0.17
Cesium-137	PCI/G	0.0537 U	0.03	0.267	0.08	0.056 U	0.03	0.0739 U	0.04
Cobalt-60	PCI/G								
Gross Alpha	PCI/G	13.2	5.63	13.1	5.19	8.73	4.05	6.07	4.01
Gross Beta	PCI/G	23.8	5.47	26.3	5.49	153	8.67	20.1	4.1
Lead-211	PCI/G	1.32 U	0.93	1.8 U	1.08	1.22 U	1.09	1.46 U	0.99
Lead-212	PCI/G	0.885	0.12	0.942	0.14	1.08	0.15	0.899	0.11
Lead-214	PCI/G	0.706	0.15	0.883	0.18	0.808	0.17	0.922	0.16
Potassium-40	PCI/G	18.9	2.18	21.4	2.39	25	2.7	22.2	2.29
Protactinium-234	PCI/G	0.497 U	0.29	0.539 U	0.34	0.46 U	0.28	0.551 U	0.33
Radium-226	PCI/G	0.568	0.15	0.875	0.17	0.584	0.17	0.767	0.17
Thallium-208	PCI/G	0.331	0.08	0.407	0.1	0.314	0.07	0.285	0.08
Thorium-230	PCI/G	0.568	0.15	0.875	0.17	0.584	0.17	0.767	0.17
Thorium-234	PCI/G	1.23 U	1.05	1.11	0.85	0.689 U	0.65	1.84	0.82
Uranium-235	PCI/G	0.299 U	0.18	0.404 U	0.24	0.318 U	0.2	0.335 U	0.2

Note:
(Q) = Qualifer
(U) = Uncertainty
U = Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI = Gamma Spectroscopy − Uncertain identification
Americium-241 and Cobalt-60 were not analyzed for these samples, but were presented to allow for cross comparison.

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Table B-2
SEAD-12 Excavated Confirmatory Soil Sample Analytical Results
Compared to NYSDEC Unrestricted Use Levels
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION							SEAD-12	SEAD-12	SEAD-12	SEAD-12
LOCATION ID							S12EXPR-O-8-01	S12EXPR-O-8-05	S12EXSW-O-8-01	S12EXSW-O-8-05
MATRIX							SOIL	SOIL	SOIL	SOIL
SAMPLE ID							S12EXPR-O-8-01	S12EXPR-O-8-14	S12EXSW-O-8-01	S12EXSW-O-8-14
TOP OF SAMPLE							0	0	0	0
BOTTOM OF SAMPLE							0.2	0.2	0	0.2
SAMPLE DATE							7/30/2009	9/30/2009	8/5/2009	9/30/2009
QC CODE							SA	SA	SA	SA
STUDY ID							RA	RA	RA	RA
AREA							Pit B	Pit B	Pit B	Pit B
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**NYSDEC Unrestricted Use Level**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Volatile Organic Compounds											
1,1,1-Trichloroethane	UG/KG	0	0%	680	0	0	2	0.25 U		0.25 U	
1,1,2,2-Tetrachloroethane	UG/KG	0	0%		0	0	2	0.38 U		0.46 U	
1,1,2-Trichloroethane	UG/KG	0	0%		0	0	2	0.27 U		0.67 U	
1,1-Dichloroethane	UG/KG	0	0%	270	0	0	2	0.19 U		0.53 U	
1,1-Dichloroethene	UG/KG	0	0%	330	0	0	2	0.38 U		0.43 U	
1,2-Dichloroethane	UG/KG	0	0%	20	0	0	2	0.31 U		0.41 U	
1,2-Dichloropropane	UG/KG	0	0%		0	0	2	0.31 U		0.45 U	
Acetone	UG/KG	0	0%	50	0	0	2	23 U		23 UJ	
Benzene	UG/KG	0	0%	60	0	0	2	0.25 U		0.53 U	
Bromodichloromethane	UG/KG	0	0%		0	0	2	0.25 U		0.59 U	
Bromoform	UG/KG	0	0%		0	0	2	0.5 U		0.49 U	
Carbon disulfide	UG/KG	0	0%		0	0	2	0.6 U		0.59 U	
Carbon tetrachloride	UG/KG	0	0%	760	0	0	2	0.53 U		0.52 U	
Chlorobenzene	UG/KG	0	0%	1100	0	0	2	0.26 U		0.55 U	
Chlorodibromomethane	UG/KG	0	0%		0	0	2	0.39 U		0.38 U	
Chloroethane	UG/KG	0	0%		0	0	2	0.51 U		0.55 U	
Chloroform	UG/KG	0	0%	370	0	0	2	0.38 U		0.5 U	
Cis-1,2-Dichloroethene	UG/KG	0	0%	250	0	0	2	0.26 U		0.36 U	
Cis-1,3-Dichloropropene	UG/KG	0	0%		0	0	2	0.36 U		0.39 U	
Ethyl benzene	UG/KG	0	0%	1000	0	0	2	1.1 U		1.1 U	
Meta/Para Xylene	UG/KG	0	0%	260	0	0	2	0.74 U		1.1 U	
Methyl bromide	UG/KG	0	0%		0	0	2	0.53 U		0.9 UJ	
Methyl butyl ketone	UG/KG	0	0%		0	0	2	0.82 U		0.82 U	
Methyl chloride	UG/KG	0	0%		0	0	2	0.36 U		0.66 U	
Methyl ethyl ketone	UG/KG	0	0%	120	0	0	2	0.89 U		0.87 U	
Methyl isobutyl ketone	UG/KG	0	0%		0	0	2	0.76 U		0.75 U	
Methylene chloride	UG/KG	0	0%	50	0	0	2	0.45 U		5.7 U	
Ortho Xylene	UG/KG	0	0%	260	0	0	2	0.74 U		0.73 U	
Styrene	UG/KG	0	0%		0	0	2	0.33 U		0.52 U	
Tetrachloroethene	UG/KG	0	0%	1300	0	0	2	0.58 U		0.57 U	
Toluene	UG/KG	0.65	100%	700	0	2	2	0.47 J		0.65 J	
Trans-1,2-Dichloroethene	UG/KG	0	0%	190	0	0	2	0.37 U		0.6 U	
Trans-1,3-Dichloropropene	UG/KG	0	0%		0	0	2	0.43 U		0.43 U	
Trichloroethene	UG/KG	0.84	50%	470	0	1	2	0.84 J		0.46 U	
Vinyl chloride	UG/KG	0	0%	20	0	0	2	0.27 U		0.54 U	
Semivolatile Organic Compounds											
1,2,4-Trichlorobenzene	UG/KG	0	0%		0	0	2	38 U		37 U	
1,2-Dichlorobenzene	UG/KG	0	0%	1100	0	0	2	34 U		34 U	
1,3-Dichlorobenzene	UG/KG	0	0%	2400	0	0	2	38 U		37 U	

Table B-2
SEAD-12 Excavated Confirmatory Soil Sample Analytical Results
Compared to NYSDEC Unrestricted Use Levels
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION								SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID								S12EXPR-O-8-01		S12EXPR-O-8-05		S12EXSW-O-8-01		S12EXSW-O-8-05	
MATRIX								SOIL		SOIL		SOIL		SOIL	
SAMPLE ID								S12EXPR-O-8-01		S12EXPR-O-8-14		S12EXSW-O-8-01		S12EXSW-O-8-14	
TOP OF SAMPLE								0		0		0		0	
BOTTOM OF SAMPLE								0.2		0.2		0		0.2	
SAMPLE DATE								7/30/2009		9/30/2009		8/5/2009		9/30/2009	
QC CODE								SA		SA		SA		SA	
STUDY ID								RA		RA		RA		RA	
AREA								Pit B		Pit B		Pit B		Pit B	
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**NYSDEC Unrestricted Use Level**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)
1,4-Dichlorobenzene	UG/KG	0	0%	1800	0	0	2	34	U			34	U		
2,4,5-Trichlorophenol	UG/KG	0	0%		0	0	2	53	U			52	U		
2,4,6-Trichlorophenol	UG/KG	0	0%		0	0	2	58	U			57	U		
2,4-Dichlorophenol	UG/KG	0	0%		0	0	2	46	U			45	U		
2,4-Dimethylphenol	UG/KG	0	0%		0	0	2	43	U			42	U		
2,4-Dinitrophenol	UG/KG	0	0%		0	0	2	1200	U			1200	UJ		
2,4-Dinitrotoluene	UG/KG	0	0%		0	0	2	62	U			61	U		
2,6-Dinitrotoluene	UG/KG	0	0%		0	0	2	47	U			46	U		
2-Chloronaphthalene	UG/KG	0	0%		0	0	2	43	U			42	U		
2-Chlorophenol	UG/KG	0	0%		0	0	2	45	U			44	U		
2-Methylnaphthalene	UG/KG	0	0%		0	0	2	38	U			37	U		
2-Methylphenol	UG/KG	0	0%	330	0	0	2	33	U			33	U		
2-Nitroaniline	UG/KG	0	0%		0	0	2	1400	U			1400	U		
2-Nitrophenol	UG/KG	0	0%		0	0	2	32	U			31	U		
3,3'-Dichlorobenzidine	UG/KG	0	0%		0	0	2	45	U			44	U		
3-Nitroaniline	UG/KG	0	0%		0	0	2	940	U			920	U		
4,6-Dinitro-2-methylpheno	UG/KG	0	0%		0	0	2	1700	U			1700	U		
4-Bromophenyl phenyl ethe	UG/KG	0	0%		0	0	2	47	U			46	U		
4-Chloro-3-methylphenol	UG/KG	0	0%		0	0	2	45	U			44	U		
4-Chloroaniline	UG/KG	0	0%		0	0	2	44	U			43	U		
4-Chlorophenyl phenyl ethe	UG/KG	0	0%		0	0	2	46	U			45	U		
4-Nitroaniline	UG/KG	0	0%		0	0	2	1400	U			1400	U		
4-Nitrophenol	UG/KG	0	0%		0	0	2	1300	U			1200	U		
Acenaphthene	UG/KG	0	0%	20000	0	0	2	46	U			45	U		
Acenaphthylene	UG/KG	0	0%	100000	0	0	2	43	U			42	U		
Anthracene	UG/KG	0	0%	100000	0	0	2	44	U			43	U		
Benzo(a)anthracene	UG/KG	0	0%	1000	0	0	2	46	U			45	U		
Benzo(a)pyrene	UG/KG	0	0%	1000	0	0	2	39	U			38	U		
Benzo(b)fluoranthene	UG/KG	0	0%	1000	0	0	2	55	U			54	U		
Benzo(ghi)perylene	UG/KG	0	0%	100000	0	0	2	110	U			110	U		
Benzo(k)fluoranthene	UG/KG	0	0%	800	0	0	2	57	U			55	U		
Benzyl alcohol	UG/KG	0	0%		0	0	2	27	U			380	U		
Bis(2-Chloroethoxy)methane	UG/KG	0	0%		0	0	2	58	U			57	U		
Bis(2-Chloroethyl)ether	UG/KG	0	0%		0	0	2	45	U			44	U		
Bis(2-Chloroisopropyl)ether	UG/KG	0	0%		0	0	2	54	U			53	U		
Bis(2-Ethylhexyl)phthalate	UG/KG	0	0%		0	0	2	65	U			63	U		
Butylbenzylphthalate	UG/KG	0	0%		0	0	2	47	U			46	U		
Carbazole	UG/KG	0	0%		0	0	2	64	U			62	U		
Chrysene	UG/KG	0	0%	1000	0	0	2	47	U			46	U		
Di-n-butylphthalate	UG/KG	0	0%		0	0	2	160	U			160	U		

Table B-2
SEAD-12 Excavated Confirmatory Soil Sample Analytical Results
Compared to NYSDEC Unrestricted Use Levels
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION							SEAD-12	SEAD-12	SEAD-12	SEAD-12
LOCATION ID							S12EXPR-O-8-01	S12EXPR-O-8-05	S12EXSW-O-8-01	S12EXSW-O-8-05
MATRIX							SOIL	SOIL	SOIL	SOIL
SAMPLE ID							S12EXPR-O-8-01	S12EXPR-O-8-14	S12EXSW-O-8-01	S12EXSW-O-8-14
TOP OF SAMPLE							0	0	0	0
BOTTOM OF SAMPLE							0.2	0.2	0	0.2
SAMPLE DATE							7/30/2009	9/30/2009	8/5/2009	9/30/2009
QC CODE							SA	SA	SA	SA
STUDY ID							RA	RA	RA	RA
AREA							Pit B	Pit B	Pit B	Pit B
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**NYSDEC Unrestricted Use Level**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Di-n-octylphthalate	UG/KG	0	0%		0	0	2	39 U		38 U	
Dibenz(a,h)anthracene	UG/KG	0	0%	330	0	0	2	45 U		44 U	
Dibenzofuran	UG/KG	0	0%	7000	0	0	2	43 U		42 U	
Diethyl phthalate	UG/KG	0	0%		0	0	2	46 U		45 U	
Dimethylphthalate	UG/KG	0	0%		0	0	2	46 U		45 U	
Fluoranthene	UG/KG	0	0%	100000	0	0	2	46 U		45 U	
Fluorene	UG/KG	0	0%	30000	0	0	2	38 U		37 U	
Hexachlorobenzene	UG/KG	0	0%	330	0	0	2	44 U		43 U	
Hexachlorobutadiene	UG/KG	0	0%		0	0	2	45 U		44 U	
Hexachlorocyclopentadiene	UG/KG	0	0%		0	0	2	41 U		41 U	
Hexachloroethane	UG/KG	0	0%		0	0	2	37 U		36 U	
Indeno(1,2,3-cd)pyrene	UG/KG	0	0%	500	0	0	2	43 U		42 U	
Isophorone	UG/KG	0	0%		0	0	2	46 U		45 U	
N-Nitrosodimethylamine	UG/KG	0	0%		0	0	2	66 U		65 U	
N-Nitrosodiphenylamine	UG/KG	0	0%		0	0	2	51 U		50 U	
N-Nitrosodipropylamine	UG/KG	0	0%		0	0	2	51 U		50 U	
Naphthalene	UG/KG	0	0%	12000	0	0	2	34 U		34 U	
Nitrobenzene	UG/KG	0	0%		0	0	2	50 U		49 U	
Pentachlorophenol	UG/KG	0	0%	800	0	0	2	1300 U		1300 U	
Phenanthrene	UG/KG	0	0%	100000	0	0	2	47 U		46 U	
Phenol	UG/KG	0	0%	330	0	0	2	45 U		44 U	
Pyrene	UG/KG	0	0%	100000	0	0	2	41 U		41 U	
PCBs											
Aroclor-1016	UG/KG	0	0%	100	0	0	4	20 U	33 U	20 U	33 U
Aroclor-1221	UG/KG	0	0%	100	0	0	4	45 U	67 U	44 U	67 U
Aroclor-1232	UG/KG	0	0%	100	0	0	4	20 U	33 U	20 U	33 U
Aroclor-1242	UG/KG	0	0%	100	0	0	4	31 U	33 U	30 U	33 U
Aroclor-1248	UG/KG	0	0%	100	0	0	4	20 U	33 U	20 U	33 U
Aroclor-1254	UG/KG	1000	75%	100	3	3	4	**1000**	**180**	**370**	33 U
Aroclor-1260	UG/KG	0	0%	100	0	0	4	36 U	33 U	35 U	33 U
Aroclor-1268	UG/KG	0	0%	100	0	0	4	20 U	33 U	20 U	33 U
Pesticides											
4,4'-DDD	UG/KG	0	0%	3.3	0	0	2	2 U		2 U	
4,4'-DDE	UG/KG	16	100%	3.3	2	2	2	**16**		**6.1**	
4,4'-DDT	UG/KG	38	50%	3.3	1	1	2	**38**		2 U	
Aldrin	UG/KG	0	0%	5	0	0	2	0.99 U		0.97 U	
Alpha-BHC	UG/KG	0	0%	20	0	0	2	0.99 U		0.97 U	
Alpha-Chlordane	UG/KG	0	0%	94	0	0	2	0.99 U		0.97 U	
Beta-BHC	UG/KG	0	0%	36	0	0	2	0.99 U		0.97 U	
Delta-BHC	UG/KG	0	0%	40	0	0	2	0.99 U		0.97 U	

Table B-2
SEAD-12 Excavated Confirmatory Soil Sample Analytical Results
Compared to NYSDEC Unrestricted Use Levels
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION								SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID								S12EXPR-O-8-01		S12EXPR-O-8-05		S12EXSW-O-8-01		S12EXSW-O-8-05	
MATRIX								SOIL		SOIL		SOIL		SOIL	
SAMPLE ID								S12EXPR-O-8-01		S12EXPR-O-8-14		S12EXSW-O-8-01		S12EXSW-O-8-14	
TOP OF SAMPLE								0		0		0		0	
BOTTOM OF SAMPLE								0.2		0.2		0		0.2	
SAMPLE DATE								7/30/2009		9/30/2009		8/5/2009		9/30/2009	
QC CODE								SA		SA		SA		SA	
STUDY ID								RA		RA		RA		RA	
AREA								Pit B		Pit B		Pit B		Pit B	
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**NYSDEC Unrestricted Use Level**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)
Dieldrin	UG/KG	0	0%	5	0	0	2	2	U			2	U		
Endosulfan I	UG/KG	0	0%	2400	0	0	2	0.99	U			0.97	U		
Endosulfan II	UG/KG	0	0%	2400	0	0	2	2	U			2	U		
Endosulfan sulfate	UG/KG	0	0%	2400	0	0	2	2	U			2	U		
Endrin	UG/KG	0	0%	14	0	0	2	2	U			2	U		
Endrin aldehyde	UG/KG	0	0%		0	0	2	2	U			2	U		
Endrin ketone	UG/KG	0	0%		0	0	2	2	U			2	U		
Gamma-BHC/Lindane	UG/KG	0	0%	100	0	0	2	0.99	U			0.97	U		
Gamma-Chlordane	UG/KG	0	0%		0	0	2	0.99	U			0.97	U		
Heptachlor	UG/KG	0	0%	42	0	0	2	0.99	U			0.97	U		
Heptachlor epoxide	UG/KG	0	0%		0	0	2	0.99	U			0.97	U		
Methoxychlor	UG/KG	0	0%		0	0	2	9.8	U			9.6	U		
Toxaphene	UG/KG	0	0%		0	0	2	20	U			20	U		
Metals															
Aluminum	MG/KG	14300	100%		0	2	2	14300				12000			
Antimony	MG/KG	0	0%		0	0	2	0.467	U			0.5	UJ		
Arsenic	MG/KG	5.7	100%	13	0	2	2	5.7				3.9			
Barium	MG/KG	79	100%	350	0	2	2	79				68.4			
Beryllium	MG/KG	0.741	100%	7.2	0	2	2	0.741				0.61			
Cadmium	MG/KG	0	0%	2.5	0	0	2	0.584	U			0.57	U		
Calcium	MG/KG	54000	100%		0	2	2	2690				54000			
Chromium	MG/KG	20.6	100%	30	0	2	2	20.6				19.6			
Cobalt	MG/KG	11.1	100%		0	2	2	11.1				10.5			
Copper	MG/KG	25.6	100%	50	0	2	2	22.2				25.6			
Cyanide	MG/KG	0	0%	27	0	0	2	0.42	U			0.42	U		
Iron	MG/KG	23900	100%		0	2	2	23900				22000			
Lead	MG/KG	13.6	100%	63	0	2	2	13.6				11	J		
Magnesium	MG/KG	11300	100%		0	2	2	4200				11300	J		
Manganese	MG/KG	571	100%	1600	0	2	2	571				481			
Mercury	MG/KG	0.035	100%	0.18	0	2	2	0.035	J			0.021	J		
Nickel	MG/KG	31.9	100%	30	1	2	2	28.2				**31.9**			
Potassium	MG/KG	1790	100%		0	2	2	1420				1790	J		
Selenium	MG/KG	1.8	50%	3.9	0	1	2	1.8				1.1	U		
Silver	MG/KG	0	0%	2	0	0	2	0.03	U			0.3	U		
Sodium	MG/KG	110	100%		0	2	2	37.2	J			110			
Thallium	MG/KG	0	0%		0	0	2	0.617	U			0.7	U		
Vanadium	MG/KG	24.4	100%		0	2	2	24.4				21			
Zinc	MG/KG	56.7	100%	109	0	2	2	56.7	J			55.3	J		

Notes:

Table B-2
SEAD-12 Excavated Confirmatory Soil Sample Analytical Results
Compared to NYSDEC Unrestricted Use Levels
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION								SEAD-12	SEAD-12	SEAD-12	SEAD-12
LOCATION ID								S12EXPR-O-8-01	S12EXPR-O-8-05	S12EXSW-O-8-01	S12EXSW-O-8-05
MATRIX								SOIL	SOIL	SOIL	SOIL
SAMPLE ID								S12EXPR-O-8-01	S12EXPR-O-8-14	S12EXSW-O-8-01	S12EXSW-O-8-14
TOP OF SAMPLE								0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0	0.2
SAMPLE DATE								7/30/2009	9/30/2009	8/5/2009	9/30/2009
QC CODE								SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA
AREA								Pit B	Pit B	Pit B	Pit B
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**NYSDEC Unrestricted Use Level**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)

(1) The dataset of samples consists of the excavated samples taken from Pit B.
The overburden C1 samples were not included in this dataset.
(2) NYSDEC's Unrestricted Use Soil Cleanup Objective, 6 NYCRR Part 375-6.8(a).
(3) Sample/Duplicate pairs are evaluated as separate and discrete samples in this table.
(4) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected; the associated reporting limit is approximate
R = the analytical result was rejected during data validation.

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Table B-3C
SEAD-12 Overburden Pit C1 Soil Sample Analytical Results
Compared to NYSDEC Unrestricted Use Levels
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID								S12STOCK-C1-01		S12STOCK-C1-02		S12STOCK-C1-03		S12STOCK-C1-04		S12STOCK-C1-05		S12STOCK-C1-06	
MATRIX								SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
SAMPLE ID								S12STOCK-C1-01		S12STOCK-C1-02		S12STOCK-C1-03		S12STOCK-C1-04		S12STOCK-C1-05		S12STOCK-C1-06	
TOP OF SAMPLE								0		0		0		0		0		0	
BOTTOM OF SAMPLE								0.2		0.2		0.2		0.2		0.2		0.2	
SAMPLE DATE								7/30/2009		8/6/2009		8/6/2009		8/6/2009		40031		40031	
QC CODE								SA		SA		SA		SA		SA		SA	
STUDY ID								RA		RA		RA		RA		RA		RA	
AREA								Pit C1		Pit C1		Pit C1		Pit C1		Pit C1		Pit C1	
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**NYSDEC Unrestricted Use Level**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)
Volatile Organic Compounds																			
1,1,1-Trichloroethane	UG/KG	0	0%	680	0	0	12	0.25	U	0.26	U	0.25	U	0.25	U	0.25	U	0.25	U
1,1,2,2-Tetrachloroethane	UG/KG	0	0%		0	0	12	0.38	U	0.49	U	0.47	U	0.47	U	0.47	U	0.46	U
1,1,2-Trichloroethane	UG/KG	0	0%		0	0	12	0.27	U	0.7	U	0.68	U	0.68	U	0.68	U	0.67	U
1,1-Dichloroethane	UG/KG	0	0%	270	0	0	12	0.19	U	0.56	U	0.54	U	0.54	U	0.54	U	0.53	U
1,1-Dichloroethene	UG/KG	0	0%	330	0	0	12	0.38	U	0.45	U	0.43	U	0.43	U	0.44	U	0.43	U
1,2-Dichloroethane	UG/KG	0	0%	20	0	0	12	0.31	U	0.43	U	0.41	U	0.41	U	0.42	U	0.41	U
1,2-Dichloropropane	UG/KG	0	0%		0	0	12	0.31	U	0.47	U	0.46	U	0.46	U	0.46	U	0.45	U
Acetone	UG/KG	0	0%	50	0	0	12	23	U	1.9	UJ	1.8	UJ	23	UJ	1.8	UJ	1.8	UJ
Benzene	UG/KG	0	0%	60	0	0	12	0.25	U	0.56	U	0.54	U	0.54	U	0.54	U	0.53	U
Bromodichloromethane	UG/KG	0	0%		0	0	12	0.25	U	0.62	U	0.59	U	0.6	U	0.6	U	0.59	U
Bromoform	UG/KG	0	0%		0	0	12	0.5	U	0.51	U	0.49	U	0.49	U	0.5	U	0.49	U
Carbon disulfide	UG/KG	0	0%		0	0	12	0.6	U	0.62	U	0.59	U	0.6	U	0.6	U	0.59	U
Carbon tetrachloride	UG/KG	0	0%	760	0	0	12	0.53	U	0.55	U	0.53	U	0.53	U	0.53	U	0.52	U
Chlorobenzene	UG/KG	0	0%	1100	0	0	12	0.26	U	0.58	U	0.56	U	0.56	U	0.57	U	0.56	U
Chlorodibromomethane	UG/KG	0	0%		0	0	12	0.39	U	0.4	U	0.39	U	0.39	U	0.39	U	0.38	U
Chloroethane	UG/KG	0	0%		0	0	12	0.51	U	0.58	U	0.56	U	0.56	U	0.57	U	0.56	U
Chloroform	UG/KG	0	0%	370	0	0	12	0.38	U	0.52	U	0.5	U	0.5	U	0.51	U	0.5	U
Cis-1,2-Dichloroethene	UG/KG	0	0%	250	0	0	12	0.26	U	0.38	U	0.36	U	0.37	U	0.37	U	0.36	U
Cis-1,3-Dichloropropene	UG/KG	0	0%		0	0	12	0.36	U	0.41	U	0.4	U	0.4	U	0.4	U	0.4	U
Ethyl benzene	UG/KG	0	0%	1000	0	0	12	1.1	U	1.1	U	1.1	U	1.1	U	1.1	U	1.1	U
Meta/Para Xylene	UG/KG	0	0%	260	0	0	12	0.74	U	1.2	U	1.1	U	1.1	U	1.1	U	1.1	U
Methyl bromide	UG/KG	0	0%		0	0	12	0.53	U	0.94	UJ	0.91	UJ	0.91	UJ	0.92	UJ	0.9	UJ
Methyl butyl ketone	UG/KG	0	0%		0	0	12	0.83	U	0.86	U	0.83	U	0.83	U	0.84	U	0.82	U
Methyl chloride	UG/KG	0	0%		0	0	12	0.36	U	0.69	U	0.66	U	0.67	U	0.67	U	0.66	U
Methyl ethyl ketone	UG/KG	0	0%	120	0	0	12	0.9	U	0.92	U	0.88	U	0.89	U	0.9	U	0.88	U
Methyl isobutyl ketone	UG/KG	0	0%		0	0	12	0.77	U	0.79	U	0.76	U	0.76	U	0.77	U	0.75	U
Methylene chloride	UG/KG	0.5	17%	50	0	2	12	0.45	U	0.46	U	0.44	U	0.45	U	0.45	U	0.44	U
Ortho Xylene	UG/KG	0	0%	260	0	0	12	0.74	U	0.76	U	0.73	U	0.74	U	0.74	U	0.73	U
Styrene	UG/KG	0	0%		0	0	12	0.33	U	0.55	U	0.53	U	0.53	U	0.53	U	0.52	U
Tetrachloroethene	UG/KG	0	0%	1300	0	0	12	0.58	U	0.6	U	0.57	U	0.57	U	0.58	U	0.57	U
Toluene	UG/KG	0.83	33%	700	0	4	12	0.8	J	0.39	U	0.37	U	0.43	J	0.38	U	0.83	J
Total Xylenes	UG/KG	0	33%	260	0	0	0												
Trans-1,2-Dichloroethene	UG/KG	0	0%	190	0	0	12	0.37	U	0.63	U	0.61	U	0.61	U	0.61	U	0.6	U
Trans-1,3-Dichloropropene	UG/KG	0	0%		0	0	12	0.43	U	0.45	U	0.43	U	0.43	U	0.44	U	0.43	U
Trichloroethene	UG/KG	0.53	8%	470	0	1	12	0.53	J	0.49	U	0.47	U	0.47	U	0.47	U	0.46	U
Vinyl chloride	UG/KG	0	0%	20	0	0	12	0.27	U	0.57	U	0.55	U	0.55	U	0.56	U	0.54	U
Semivolatile Organic Compounds																			
1,2,4-Trichlorobenzene	UG/KG	0	0%		0	0	12	38	U	39	U	37	U	38	U	38	U	37	U
1,2-Dichlorobenzene	UG/KG	0	0%	1100	0	0	12	34	U	35	U	34	U	34	U	34	U	34	U
1,3-Dichlorobenzene	UG/KG	0	0%	2400	0	0	12	38	U	39	U	37	U	38	U	38	U	37	U
1,4-Dichlorobenzene	UG/KG	0	0%	1800	0	0	12	34	U	35	U	34	U	34	U	34	U	34	U
2,4,5-Trichlorophenol	UG/KG	0	0%		0	0	12	53	U	55	U	53	U	53	U	53	U	52	U
2,4,6-Trichlorophenol	UG/KG	0	0%		0	0	12	58	U	60	U	57	U	57	U	58	U	57	U
2,4-Dichlorophenol	UG/KG	0	0%		0	0	12	46	U	47	U	46	U	46	U	46	U	45	U
2,4-Dimethylphenol	UG/KG	0	0%		0	0	12	43	U	44	U	42	U	42	U	43	U	42	U
2,4-Dinitrophenol	UG/KG	0	0%		0	0	12	1200	U	1200	U	1200	U	1200	U	1200	U	1200	U

Table B-3C
SEAD-12 Overburden Pit C1 Soil Sample Analytical Results
Compared to NYSDEC Unrestricted Use Levels
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION								SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12
LOCATION ID								S12STOCK-C1-01	S12STOCK-C1-02	S12STOCK-C1-03	S12STOCK-C1-04	S12STOCK-C1-05	S12STOCK-C1-06
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								S12STOCK-C1-01	S12STOCK-C1-02	S12STOCK-C1-03	S12STOCK-C1-04	S12STOCK-C1-05	S12STOCK-C1-06
TOP OF SAMPLE								0	0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								7/30/2009	8/6/2009	8/6/2009	8/6/2009	40031	40031
QC CODE								SA	SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA
AREA								Pit C1	Pit C1	Pit C1	Pit C1	Pit C1	Pit C1
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**NYSDEC Unrestricted Use Level**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
2,4-Dinitrotoluene	UG/KG	0	0%		0	0	12	63 U	64 U	62 U	62 U	63 U	61 U
2,6-Dinitrotoluene	UG/KG	0	0%		0	0	12	47 U	49 U	47 U	47 U	47 U	46 U
2-Chloronaphthalene	UG/KG	0	0%		0	0	12	43 U	44 U	42 U	42 U	43 U	42 U
2-Chlorophenol	UG/KG	0	0%		0	0	12	45 U	46 U	44 U	45 U	45 U	44 U
2-Methylnaphthalene	UG/KG	0	0%		0	0	12	38 U	39 U	37 U	38 U	38 U	37 U
2-Methylphenol	UG/KG	0	0%	330	0	0	12	33 U	34 U	33 U	33 U	33 U	33 U
2-Nitroaniline	UG/KG	0	0%		0	0	12	1400 U	1400 U	1400 U	1400 U	1400 U	1400 U
2-Nitrophenol	UG/KG	0	0%		0	0	12	32 U	33 U	32 U	32 U	32 U	31 U
3,3'-Dichlorobenzidine	UG/KG	0	0%		0	0	12	45 U	46 U	44 U	45 U	45 U	44 U
3-Nitroaniline	UG/KG	0	0%		0	0	12	940 U	970 U	930 U	930 U	940 U	920 U
4,6-Dinitro-2-methylpheno	UG/KG	0	0%		0	0	12	1800 U	1800 U	1700 U	1700 U	1800 U	1700 U
4-Bromophenyl phenyl ethe	UG/KG	0	0%		0	0	12	47 U	49 U	47 U	47 U	47 U	46 U
4-Chloro-3-methylphenol	UG/KG	0	0%		0	0	12	45 U	46 U	44 U	45 U	45 U	44 U
4-Chloroaniline	UG/KG	0	0%		0	0	12	44 U	45 U	43 U	43 U	44 U	43 U
4-Chlorophenyl phenyl ethe	UG/KG	0	0%		0	0	12	46 U	47 U	46 U	46 U	46 U	45 U
4-Methylphenol	UG/KG	0	0%	330	0	0	0						
4-Nitroaniline	UG/KG	0	0%		0	0	12	1400 U	1500 U	1400 U	1400 U	1400 U	1400 U
4-Nitrophenol	UG/KG	0	0%		0	0	12	1300 U	1300 U	1300 U	1300 U	1300 U	1300 U
Acenaphthene	UG/KG	0	0%	20000	0	0	12	46 U	47 U	46 U	46 U	46 U	45 U
Acenaphthylene	UG/KG	0	0%	100000	0	0	12	43 U	44 U	42 U	42 U	43 U	42 U
Anthracene	UG/KG	58	42%	100000	0	5	12	48 J	45 U	58 J	43 U	44 U	43 U
Benzo(a)anthracene	UG/KG	190	92%	1000	0	11	12	170 J	94 J	190 J	99 J	120 J	77 J
Benzo(a)pyrene	UG/KG	140	92%	1000	0	11	12	130 J	73 J	140 J	71 J	87 J	70 J
Benzo(b)fluoranthene	UG/KG	170	83%	1000	0	10	12	150 J	88 J	170 J	89 J	92 J	75 J
Benzo(ghi)perylene	UG/KG	0	0%	100000	0	0	12	110 U	110 U	110 U	110 U	110 U	110 U
Benzo(k)fluoranthene	UG/KG	150	75%	800	0	9	12	130 J	78 J	150 J	70 J	95 J	62 J
Benzyl alcohol	UG/KG	0	0%		0	0	12	390 U	400 U	380 U	380 U	390 U	380 U
Bis(2-Chloroethoxy)methane	UG/KG	0	0%		0	0	12	58 U	60 U	57 U	57 U	58 U	57 U
Bis(2-Chloroethyl)ether	UG/KG	0	0%		0	0	12	45 U	46 U	44 U	45 U	45 U	44 U
Bis(2-Chloroisopropyl)ether	UG/KG	0	0%		0	0	12	54 U	56 U	54 U	54 U	54 U	53 U
Bis(2-Ethylhexyl)phthalate	UG/KG	130	58%		0	7	12	65 U	96 J	82 J	81 J	74 J	64 U
Butylbenzylphthalate	UG/KG	0	0%		0	0	12	47 U	49 U	47 U	47 U	47 U	46 U
Carbazole	UG/KG	0	0%		0	0	12	64 U	66 U	63 U	63 U	64 U	62 U
Chrysene	UG/KG	250	92%	1000	0	11	12	220 J	120 J	250 J	120 J	160 J	91 J
Di-n-butylphthalate	UG/KG	0	0%		0	0	12	160 U	170 U	160 U	160 U	160 U	160 U
Di-n-octylphthalate	UG/KG	0	0%		0	0	12	39 U	40 U	39 U	39 U	39 U	38 U
Dibenz(a,h)anthracene	UG/KG	0	0%	330	0	0	12	45 U	46 U	44 U	45 U	45 U	44 U
Dibenzofuran	UG/KG	0	0%	7000	0	0	12	43 U	44 U	42 U	42 U	43 U	42 U
Diethyl phthalate	UG/KG	0	0%		0	0	12	46 U	47 U	46 U	46 U	46 U	45 U
Dimethylphthalate	UG/KG	0	0%		0	0	12	46 U	47 U	46 U	46 U	46 U	45 U
Fluoranthene	UG/KG	320	92%	100000	0	11	12	300 J	170 J	320 J	190 J	230 J	130 J
Fluorene	UG/KG	0	0%	30000	0	0	12	38 U	39 U	37 U	38 U	38 U	37 U
Hexachlorobenzene	UG/KG	0	0%	330	0	0	12	44 U	45 U	43 U	43 U	44 U	43 U
Hexachlorobutadiene	UG/KG	0	0%		0	0	12	45 U	46 U	44 U	45 U	45 U	44 U
Hexachlorocyclopentadiene	UG/KG	0	0%		0	0	12	42 U	43 U	41 U	41 U	42 U	41 U
Hexachloroethane	UG/KG	0	0%		0	0	12	37 U	38 U	36 U	37 U	37 U	36 U
Indeno(1,2,3-cd)pyrene	UG/KG	93	75%	500	0	9	12	75 J	45 J	93 J	48 J	55 J	48 J

Table B-3C
SEAD-12 Overburden Pit C1 Soil Sample Analytical Results
Compared to NYSDEC Unrestricted Use Levels
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID								S12STOCK-C1-01		S12STOCK-C1-02		S12STOCK-C1-03		S12STOCK-C1-04		S12STOCK-C1-05		S12STOCK-C1-06	
MATRIX								SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
SAMPLE ID								S12STOCK-C1-01		S12STOCK-C1-02		S12STOCK-C1-03		S12STOCK-C1-04		S12STOCK-C1-05		S12STOCK-C1-06	
TOP OF SAMPLE								0		0		0		0		0		0	
BOTTOM OF SAMPLE								0.2		0.2		0.2		0.2		0.2		0.2	
SAMPLE DATE								7/30/2009		8/6/2009		8/6/2009		8/6/2009		40031		40031	
QC CODE								SA		SA		SA		SA		SA		SA	
STUDY ID								RA		RA		RA		RA		RA		RA	
AREA								Pit C1		Pit C1		Pit C1		Pit C1		Pit C1		Pit C1	
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**NYSDEC Unrestricted Use Level**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)
Isophorone	UG/KG	0	0%		0	0	12	46	U	47	U	46	U	46	U	46	U	45	U
N-Nitrosodimethylamine	UG/KG	0	0%		0	0	12	66	U	68	U	65	U	66	U	66	U	65	U
N-Nitrosodiphenylamine	UG/KG	0	0%		0	0	12	51	U	52	U	50	U	50	U	51	U	50	U
N-Nitrosodipropylamine	UG/KG	0	0%		0	0	12	51	U	52	U	50	U	50	U	51	U	50	U
Naphthalene	UG/KG	0	0%	12000	0	0	12	34	U	35	U	34	U	34	U	34	U	34	U
Nitrobenzene	UG/KG	0	0%		0	0	12	50	U	51	U	49	U	49	U	50	U	49	U
Pentachlorophenol	UG/KG	0	0%	800	0	0	12	1300	U	1400	U	1300	U	1300	U	1300	U	1300	U
Phenanthrene	UG/KG	240	83%	100000	0	10	12	100	J	53	J	110	J	52	J	71	J	54	J
Phenol	UG/KG	0	0%	330	0	0	12	45	U	46	U	44	U	45	U	45	U	44	U
Pyrene	UG/KG	290	92%	100000	0	11	12	260	J	170	J	290	J	160	J	190	J	120	J
PCBs																			
Aroclor-1016	UG/KG	0	0%	100	0	0	12	20	U	21	U	20	U	20	U	20	U	20	U
Aroclor-1221	UG/KG	0	0%	100	0	0	12	45	U	46	U	44	U	45	U	45	U	44	U
Aroclor-1232	UG/KG	0	0%	100	0	0	12	20	U	21	U	20	U	20	U	20	U	20	U
Aroclor-1242	UG/KG	0	0%	100	0	0	12	31	U	32	U	31	U	31	U	31	U	30	U
Aroclor-1248	UG/KG	0	0%	100	0	0	12	20	U	21	U	20	U	20	U	20	U	20	U
Aroclor-1254	UG/KG	54	8%	100	0	1	12	20	U	21	U	20	U	20	U	20	U	20	U
Aroclor-1260	UG/KG	0	0%	100	0	0	12	36	U	37	U	35	U	35	U	36	U	35	U
Aroclor-1268	UG/KG	0	0%	100	0	0	12	20	U	21	U	20	U	20	U	20	U	20	U
Pesticides																			
4,4'-DDD	UG/KG	0	0%	3.3	0	0	12	2	U	21	U	20	U	20	U	20	U	20	U
4,4'-DDE	UG/KG	0	0%	3.3	0	0	12	2	U	21	U	20	U	20	U	20	U	20	U
4,4'-DDT	UG/KG	0	0%	3.3	0	0	12	2	U	21	U	20	U	20	U	20	U	20	U
Aldrin	UG/KG	0	0%	5	0	0	12	0.99	U	11	U	9.8	U	9.8	U	9.9	U	9.7	U
Alpha-BHC	UG/KG	0	0%	20	0	0	12	0.99	U	11	U	9.8	U	9.8	U	9.9	U	9.7	U
Alpha-Chlordane	UG/KG	0	0%	94	0	0	12	0.99	U	11	U	9.8	U	9.8	U	9.9	U	9.7	U
Beta-BHC	UG/KG	0	0%	36	0	0	12	0.99	U	11	U	9.8	U	9.8	U	9.9	U	9.7	U
Chlordane (Alpha And Gamma Isomers)	UG/KG	0	0%	94	0	0	0												
Delta-BHC	UG/KG	0	0%	40	0	0	12	0.99	U	11	U	9.8	U	9.8	U	9.9	U	9.7	U
Dieldrin	UG/KG	0	0%	5	0	0	12	2	U	21	U	20	U	20	U	20	U	20	U
Endosulfan I	UG/KG	0	0%	2400	0	0	12	0.99	U	11	U	9.8	U	9.8	U	9.9	U	9.7	U
Endosulfan II	UG/KG	0	0%	2400	0	0	12	2	U	21	U	20	U	20	U	20	U	20	U
Endosulfan sulfate	UG/KG	0	0%	2400	0	0	12	2	U	21	U	20	U	20	U	20	U	20	U
Endrin	UG/KG	0	0%	14	0	0	12	2	U	21	U	20	U	20	U	20	U	20	U
Endrin aldehyde	UG/KG	0	0%		0	0	12	2	U	21	U	20	U	20	U	20	U	20	U
Endrin ketone	UG/KG	0	0%		0	0	12	2	U	21	U	20	U	20	U	20	U	20	U
Gamma-BHC/Lindane	UG/KG	0	0%	100	0	0	12	0.99	U	11	U	9.8	U	9.8	U	9.9	U	9.7	U
Gamma-Chlordane	UG/KG	0	0%		0	0	12	0.99	U	11	U	9.8	U	9.8	U	9.9	U	9.7	U
Heptachlor	UG/KG	0	0%	42	0	0	12	0.99	U	11	U	9.8	U	9.8	U	9.9	U	9.7	U
Heptachlor epoxide	UG/KG	0	0%		0	0	12	0.99	U	11	U	9.8	U	9.8	U	9.9	U	9.7	U
Methoxychlor	UG/KG	0	0%		0	0	12	9.8	U	110	U	97	U	97	U	98	U	96	U
Toxaphene	UG/KG	0	0%		0	0	12	20	U	210	U	200	U	200	U	200	U	200	U
Metals																			
Aluminum	MG/KG	14900	100%		0	12	12	12800		13900		14300		13900		13800		12900	
Antimony	MG/KG	0	0%		0	0	12	0.464	U	0.482	U	0.449	U	0.465	U	0.455	U	0.459	U
Arsenic	MG/KG	5.1	100%	13	0	12	12	5.1		4.4	J	4.8	J	4.2	J	4	J	4	J
Barium	MG/KG	105	100%	350	0	12	12	102		103		101		93.8		98.3		92.8	

Table B-3C
SEAD-12 Overburden Pit C1 Soil Sample Analytical Results
Compared to NYSDEC Unrestricted Use Levels
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID								S12STOCK-C1-01		S12STOCK-C1-02		S12STOCK-C1-03		S12STOCK-C1-04		S12STOCK-C1-05		S12STOCK-C1-06	
MATRIX								SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
SAMPLE ID								S12STOCK-C1-01		S12STOCK-C1-02		S12STOCK-C1-03		S12STOCK-C1-04		S12STOCK-C1-05		S12STOCK-C1-06	
TOP OF SAMPLE								0		0		0		0		0		0	
BOTTOM OF SAMPLE								0.2		0.2		0.2		0.2		0.2		0.2	
SAMPLE DATE								7/30/2009		8/6/2009		8/6/2009		8/6/2009		40031		40031	
QC CODE								SA		SA		SA		SA		SA		SA	
STUDY ID								RA		RA		RA		RA		RA		RA	
AREA								Pit C1		Pit C1		Pit C1		Pit C1		Pit C1		Pit C1	
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**NYSDEC Unrestricted Use Level**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)
Beryllium	MG/KG	0.742	100%	7.2	0	12	12	0.67		0.717		0.728		0.688		0.698		0.645	
Cadmium	MG/KG	0.371	92%	2.5	0	11	12	0.58	U	0.31	J	0.355	J	0.334	J	0.358	J	0.335	J
Calcium	MG/KG	66700	100%		0	12	12	41500		29400		37400		38600		32300		66700	
Chromium	MG/KG	22.4	100%	30	0	12	12	19.3		19.9		21.5		20.6		20.8		19.4	
Cobalt	MG/KG	12.5	100%		0	12	12	10.8		10.1		12.5		9.9		9.7		8.9	
Copper	MG/KG	24.4	100%	50	0	12	12	21.3		21.3		24.4		21.6		22.6		21.4	
Cyanide	MG/KG	0	0%	27	0	0	12	0.5	U	0.5	U	0.42	U	0.5	U	0.42	U	0.42	U
Iron	MG/KG	26300	100%		0	12	12	21700		22500		23200		23400		22500		20200	
Lead	MG/KG	33.2	100%	63	0	12	12	17.3		18.4	J	23.8	J	18.6	J	20.7	J	18.4	J
Magnesium	MG/KG	10700	100%		0	12	12	10300		7550		9580		10700		8950		10000	
Manganese	MG/KG	651	100%	1600	0	12	12	651		614		572		536		502		537	
Mercury	MG/KG	0.05	92%	0.18	0	11	12	0.037	J	0.045		0.045		0.048		0.046		0.038	
Nickel	MG/KG	32.3	100%	30	5	12	12	27.8		27.7		**32.3**		28.8		28.6		26.3	
Potassium	MG/KG	2110	100%		0	12	12	1740		1690		2110		1970		1750		2030	
Selenium	MG/KG	0	0%	3.9	0	0	2	1.2	U	1.5	R	1.2	R	1.2	R	1.3	R	0.523	R
Silver	MG/KG	0	0%	2	0	0	12	0.03	U	0.031	U	0.029	U	0.03	U	0.029	U	0.03	U
Sodium	MG/KG	105	100%		0	12	12	90.3	J	77.9	J	95.2	J	86	J	81.1	J	103	J
Thallium	MG/KG	0	0%		0	0	12	0.817	U	0.424	U	0.395	U	0.409	U	0.401	U	0.404	U
Vanadium	MG/KG	27.3	100%		0	12	12	22.8		24.3		24.4		25.4		24.1		23.6	
Zinc	MG/KG	109	100%	109	0	12	12	76.7	J	84.9		91.1		106		92.7		91.9	

Notes:
(1) The dataset of samples consists of the overburden C1 samples
The Inplace samples were not included in this dataset
(2) NYSDEC's Unrestricted Use Soil Cleanup Objective, 6 NYCRR Part 375-6.8(a).
(3) Sample/Duplicate pairs are evaluated as separate and discrete samples in this table
(4) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected; the associated reporting limit is approximate
R = the analytical result was rejected during data validation

Table B-3C
SEAD-12 Overburden Pit C1 Soil Sample Analytical Results
Compared to NYSDEC Unrestricted Use Levels
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID								S12STOCK-C1-07		S12STOCK-C1-08		S12STOCK-C1-09		S12STOCK-C1-10		S12STOCK-C1-11		S12STOCK-C1-11	
MATRIX								SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
SAMPLE ID								S12STOCK-C1-07		S12STOCK-C1-08		S12STOCK-C1-09		S12STOCK-C1-10		S12STOCK-C1-12		S12STOCK-C1-11	
TOP OF SAMPLE								0		0		0		0		0		0	
BOTTOM OF SAMPLE								0.2		0.2		0.2		0.2		0.2		0.2	
SAMPLE DATE								40031		40031		8/6/2009		8/6/2009		8/6/2009		8/6/2009	
QC CODE								SA		SA		SA		SA		DU		SA	
STUDY ID								RA		RA		RA		RA		RA		RA	
AREA								Pit C1		Pit C1		Pit C1		Pit C1		Pit C1		Pit C1	
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**NYSDEC Unrestricted Use Level**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)
Volatile Organic Compounds																			
1,1,1-Trichloroethane	UG/KG	0	0%	680	0	0	12	0.25	U	0.25	U	0.26	U	0.25	U	0.25	U	0.25	U
1,1,2,2-Tetrachloroethane	UG/KG	0	0%		0	0	12	0.47	U	0.47	U	0.48	U	0.47	U	0.47	U	0.48	U
1,1,2-Trichloroethane	UG/KG	0	0%		0	0	12	0.68	U	0.68	U	0.7	U	0.68	U	0.68	U	0.69	U
1,1-Dichloroethane	UG/KG	0	0%	270	0	0	12	0.54	U	0.54	U	0.55	U	0.54	U	0.54	U	0.55	U
1,1-Dichloroethene	UG/KG	0	0%	330	0	0	12	0.44	U	0.44	U	0.45	U	0.44	U	0.43	U	0.44	U
1,2-Dichloroethane	UG/KG	0	0%	20	0	0	12	0.41	U	0.41	U	0.42	U	0.42	U	0.41	U	0.42	U
1,2-Dichloropropane	UG/KG	0	0%		0	0	12	0.46	U	0.46	U	0.47	U	0.46	U	0.46	U	0.47	U
Acetone	UG/KG	0	0%	50	0	0	12	1.8	UJ	1.8	UJ	1.8	UJ	1.8	UJ	1.8	UJ	1.8	UJ
Benzene	UG/KG	0	0%	60	0	0	12	0.54	U	0.54	U	0.55	U	0.54	U	0.54	U	0.55	U
Bromodichloromethane	UG/KG	0	0%		0	0	12	0.6	U	0.6	U	0.61	U	0.6	U	0.59	U	0.61	U
Bromoform	UG/KG	0	0%		0	0	12	0.49	U	0.5	U	0.51	U	0.5	U	0.49	U	0.5	U
Carbon disulfide	UG/KG	0	0%		0	0	12	0.6	U	0.6	U	0.61	U	0.6	U	0.59	U	0.61	U
Carbon tetrachloride	UG/KG	0	0%	760	0	0	12	0.53	U	0.53	U	0.54	U	0.53	U	0.53	U	0.54	U
Chlorobenzene	UG/KG	0	0%	1100	0	0	12	0.56	U	0.57	U	0.58	U	0.57	U	0.56	U	0.57	U
Chlorodibromomethane	UG/KG	0	0%		0	0	12	0.39	U	0.39	U	0.4	U	0.39	U	0.39	U	0.4	U
Chloroethane	UG/KG	0	0%		0	0	12	0.56	U	0.57	U	0.58	U	0.57	U	0.56	U	0.57	U
Chloroform	UG/KG	0	0%	370	0	0	12	0.5	U	0.51	U	0.52	U	0.51	U	0.5	U	0.51	U
Cis-1,2-Dichloroethene	UG/KG	0	0%	250	0	0	12	0.37	U	0.37	U	0.38	U	0.37	U	0.36	U	0.37	U
Cis-1,3-Dichloropropene	UG/KG	0	0%		0	0	12	0.4	U	0.4	U	0.41	U	0.4	U	0.4	U	0.41	UJ
Ethyl benzene	UG/KG	0	0%	1000	0	0	12	1.1	U	1.1	U	1.1	U	1.1	U	1.1	U	1.1	U
Meta/Para Xylene	UG/KG	0	0%	260	0	0	12	1.1	U	1.1	U	1.2	U	1.1	U	1.1	U	1.2	U
Methyl bromide	UG/KG	0	0%		0	0	12	0.91	UJ	0.92	UJ	0.94	UJ	0.92	UJ	0.91	UJ	0.93	UJ
Methyl butyl ketone	UG/KG	0	0%		0	0	12	0.83	U	0.83	U	0.85	U	0.84	U	0.83	U	0.85	UJ
Methyl chloride	UG/KG	0	0%		0	0	12	0.67	U	0.67	U	0.69	U	0.67	U	0.66	U	0.68	U
Methyl ethyl ketone	UG/KG	0	0%	120	0	0	12	0.89	U	0.89	U	0.91	U	0.9	U	0.88	U	0.91	U
Methyl isobutyl ketone	UG/KG	0	0%		0	0	12	0.76	U	0.76	U	0.78	U	0.77	U	0.76	U	0.78	UJ
Methylene chloride	UG/KG	0.5	17%	50	0	2	12	0.45	U	0.48	J	0.46	U	0.5	J	0.44	U	0.46	U
Ortho Xylene	UG/KG	0	0%	260	0	0	12	0.74	U	0.74	U	0.76	U	0.74	U	0.73	U	0.75	U
Styrene	UG/KG	0	0%		0	0	12	0.53	U	0.53	U	0.54	U	0.53	U	0.53	U	0.54	U
Tetrachloroethene	UG/KG	0	0%	1300	0	0	12	0.57	U	0.58	U	0.59	U	0.58	U	0.57	U	0.59	U
Toluene	UG/KG	0.83	33%	700	0	4	12	0.38	U	0.38	U	0.39	U	0.38	U	0.67	J	0.38	U
Total Xylenes	UG/KG	0	33%	260	0	0	0												
Trans-1,2-Dichloroethene	UG/KG	0	0%	190	0	0	12	0.61	U	0.61	U	0.63	U	0.61	U	0.61	U	0.62	U
Trans-1,3-Dichloropropene	UG/KG	0	0%		0	0	12	0.44	U	0.44	U	0.45	U	0.44	U	0.43	U	0.44	UJ
Trichloroethene	UG/KG	0.53	8%	470	0	1	12	0.47	U	0.47	U	0.48	U	0.47	U	0.47	U	0.48	U
Vinyl chloride	UG/KG	0	0%	20	0	0	12	0.55	U	0.55	U	0.57	U	0.56	U	0.55	U	0.56	U
Semivolatile Organic Compounds																			
1,2,4-Trichlorobenzene	UG/KG	0	0%		0	0	12	38	U	38	U	39	U	120	U	37	U	38	U
1,2-Dichlorobenzene	UG/KG	0	0%	1100	0	0	12	34	U	34	U	35	U	110	U	34	U	35	U
1,3-Dichlorobenzene	UG/KG	0	0%	2400	0	0	12	38	U	38	U	39	U	120	U	37	U	38	U
1,4-Dichlorobenzene	UG/KG	0	0%	1800	0	0	12	34	U	34	U	35	U	110	U	34	U	35	U
2,4,5-Trichlorophenol	UG/KG	0	0%		0	0	12	53	U	53	U	54	U	160	U	53	U	54	U
2,4,6-Trichlorophenol	UG/KG	0	0%		0	0	12	57	U	58	U	59	U	180	U	57	U	59	U
2,4-Dichlorophenol	UG/KG	0	0%		0	0	12	46	U	46	U	47	U	140	U	46	U	47	U
2,4-Dimethylphenol	UG/KG	0	0%		0	0	12	42	U	43	U	44	U	130	U	42	U	43	U
2,4-Dinitrophenol	UG/KG	0	0%		0	0	12	1200	U	1200	U	1200	U	3400	U	1200	U	1200	U

Table B-3C
SEAD-12 Overburden Pit C1 Soil Sample Analytical Results
Compared to NYSDEC Unrestricted Use Levels
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID								S12STOCK-C1-07		S12STOCK-C1-08		S12STOCK-C1-09		S12STOCK-C1-10		S12STOCK-C1-11		S12STOCK-C1-11	
MATRIX								SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
SAMPLE ID								S12STOCK-C1-07		S12STOCK-C1-08		S12STOCK-C1-09		S12STOCK-C1-10		S12STOCK-C1-12		S12STOCK-C1-11	
TOP OF SAMPLE								0		0		0		0		0		0	
BOTTOM OF SAMPLE								0.2		0.2		0.2		0.2		0.2		0.2	
SAMPLE DATE								40031		40031		8/6/2009		8/6/2009		8/6/2009		8/6/2009	
QC CODE								SA		SA		SA		SA		DU		SA	
STUDY ID								RA		RA		RA		RA		RA		RA	
AREA								Pit C1		Pit C1		Pit C1		Pit C1		Pit C1		Pit C1	
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**NYSDEC Unrestricted Use Level**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)
2,4-Dinitrotoluene	UG/KG	0	0%		0	0	12	62	U	62	U	64	U	190	U	62	U	63	U
2,6-Dinitrotoluene	UG/KG	0	0%		0	0	12	47	U	47	U	48	U	150	U	47	U	48	U
2-Chloronaphthalene	UG/KG	0	0%		0	0	12	42	U	43	U	44	U	130	U	42	U	43	U
2-Chlorophenol	UG/KG	0	0%		0	0	12	45	U	45	U	46	U	140	U	44	U	46	U
2-Methylnaphthalene	UG/KG	0	0%		0	0	12	38	U	38	U	39	U	120	U	37	U	38	U
2-Methylphenol	UG/KG	0	0%	330	0	0	12	33	U	33	U	34	U	99	U	33	U	34	U
2-Nitroaniline	UG/KG	0	0%		0	0	12	1400	U	1400	U	1400	U	4100	U	1400	U	1400	U
2-Nitrophenol	UG/KG	0	0%		0	0	12	32	U	32	U	33	U	95	U	32	U	32	U
3,3'-Dichlorobenzidine	UG/KG	0	0%		0	0	12	45	U	45	U	46	U	140	U	44	U	46	U
3-Nitroaniline	UG/KG	0	0%		0	0	12	930	U	940	U	960	U	2900	U	930	U	950	U
4,6-Dinitro-2-methylpheno	UG/KG	0	0%		0	0	12	1700	U	1700	U	1800	U	5200	U	1700	U	1800	U
4-Bromophenyl phenyl ethe	UG/KG	0	0%		0	0	12	47	U	47	U	48	U	150	U	47	U	48	U
4-Chloro-3-methylphenol	UG/KG	0	0%		0	0	12	45	U	45	U	46	U	140	U	44	U	46	U
4-Chloroaniline	UG/KG	0	0%		0	0	12	44	U	44	U	45	U	140	U	43	U	44	U
4-Chlorophenyl phenyl ethe	UG/KG	0	0%		0	0	12	46	U	46	U	47	U	140	U	46	U	47	U
4-Methylphenol	UG/KG	0	0%	330	0	0	0												
4-Nitroaniline	UG/KG	0	0%		0	0	12	1400	U	1400	U	1500	U	4200	U	1400	U	1400	U
4-Nitrophenol	UG/KG	0	0%		0	0	12	1300	U	1300	U	1300	U	3700	U	1300	U	1300	U
Acenaphthene	UG/KG	0	0%	20000	0	0	12	46	U	46	U	47	U	140	U	46	U	47	U
Acenaphthylene	UG/KG	0	0%	100000	0	0	12	42	U	43	U	44	U	130	U	42	U	43	U
Anthracene	UG/KG	58	42%	100000	0	5	12	58	J	51	J	45	U	140	U	43	UJ	48	J
Benzo(a)anthracene	UG/KG	190	92%	1000	0	11	12	83	J	160	J	72	J	140	U	52	J	140	J
Benzo(a)pyrene	UG/KG	140	92%	1000	0	11	12	80	J	130	J	59	J	120	U	47	J	120	J
Benzo(b)fluoranthene	UG/KG	170	83%	1000	0	10	12	80	J	160	J	63	J	170	U	55	UJ	120	J
Benzo(ghi)perylene	UG/KG	0	0%	100000	0	0	12	110	U	110	U	110	U	320	U	110	U	110	U
Benzo(k)fluoranthene	UG/KG	150	75%	800	0	9	12	79	J	110	J	58	U	170	U	56	UJ	100	J
Benzyl alcohol	UG/KG	0	0%		0	0	12	380	U	390	U	390	U	81	U	380	U	390	U
Bis(2-Chloroethoxy)methane	UG/KG	0	0%		0	0	12	57	U	58	U	59	U	180	U	57	U	59	U
Bis(2-Chloroethyl)ether	UG/KG	0	0%		0	0	12	45	U	45	U	46	U	140	U	44	U	46	U
Bis(2-Chloroisopropyl)ether	UG/KG	0	0%		0	0	12	54	U	54	U	55	U	170	U	54	U	55	U
Bis(2-Ethylhexyl)phthalate	UG/KG	130	58%		0	7	12	64	U	130	J	100	J	200	U	64	UJ	70	J
Butylbenzylphthalate	UG/KG	0	0%		0	0	12	47	U	47	U	48	U	150	U	47	U	48	U
Carbazole	UG/KG	0	0%		0	0	12	63	U	64	U	65	U	190	U	63	U	64	U
Chrysene	UG/KG	250	92%	1000	0	11	12	97	J	190	J	88	J	150	U	57	J	140	J
Di-n-butylphthalate	UG/KG	0	0%		0	0	12	160	U	160	U	170	U	480	U	160	U	160	U
Di-n-octylphthalate	UG/KG	0	0%		0	0	12	39	U	39	U	40	U	120	U	39	U	40	U
Dibenz(a,h)anthracene	UG/KG	0	0%	330	0	0	12	45	U	45	U	46	U	140	U	44	U	46	U
Dibenzofuran	UG/KG	0	0%	7000	0	0	12	42	U	43	U	44	U	130	U	42	U	43	U
Diethyl phthalate	UG/KG	0	0%		0	0	12	46	U	46	U	47	U	140	U	46	U	47	U
Dimethylphthalate	UG/KG	0	0%		0	0	12	46	U	46	U	47	U	140	U	46	U	47	U
Fluoranthene	UG/KG	320	92%	100000	0	11	12	190	J	320	J	140	J	140	U	91	J	320	J
Fluorene	UG/KG	0	0%	30000	0	0	12	38	U	38	U	39	U	120	U	37	U	38	U
Hexachlorobenzene	UG/KG	0	0%	330	0	0	12	44	U	44	U	45	U	140	U	43	U	44	U
Hexachlorobutadiene	UG/KG	0	0%		0	0	12	45	U	45	U	46	U	140	U	44	U	46	U
Hexachlorocyclopentadiene	UG/KG	0	0%		0	0	12	41	U	41	U	42	U	130	U	41	U	42	U
Hexachloroethane	UG/KG	0	0%		0	0	12	37	U	37	U	38	U	110	U	36	U	37	U
Indeno(1,2,3-cd)pyrene	UG/KG	93	75%	500	0	9	12	60	J	73	J	44	U	130	U	42	UJ	79	J

Table B-3C
SEAD-12 Overburden Pit C1 Soil Sample Analytical Results
Compared to NYSDEC Unrestricted Use Levels
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID								S12STOCK-C1-07		S12STOCK-C1-08		S12STOCK-C1-09		S12STOCK-C1-10		S12STOCK-C1-11		S12STOCK-C1-11	
MATRIX								SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
SAMPLE ID								S12STOCK-C1-07		S12STOCK-C1-08		S12STOCK-C1-09		S12STOCK-C1-10		S12STOCK-C1-12		S12STOCK-C1-11	
TOP OF SAMPLE								0		0		0		0		0		0	
BOTTOM OF SAMPLE								0.2		0.2		0.2		0.2		0.2		0.2	
SAMPLE DATE								40031		40031		8/6/2009		8/6/2009		8/6/2009		8/6/2009	
QC CODE								SA		SA		SA		SA		DU		SA	
STUDY ID								RA		RA		RA		RA		RA		RA	
AREA								Pit C1		Pit C1		Pit C1		Pit C1		Pit C1		Pit C1	
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**NYSDEC Unrestricted Use Level**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)
Isophorone	UG/KG	0	0%		0	0	12	46	U	46	U	47	U	140	U	46	U	47	U
N-Nitrosodimethylamine	UG/KG	0	0%		0	0	12	66	U	66	U	67	U	200	U	65	U	67	U
N-Nitrosodiphenylamine	UG/KG	0	0%		0	0	12	50	U	51	U	52	U	160	U	50	U	51	U
N-Nitrosodipropylamine	UG/KG	0	0%		0	0	12	50	U	51	U	52	U	160	U	50	U	51	U
Naphthalene	UG/KG	0	0%	12000	0	0	12	34	U	34	U	35	U	110	U	34	U	35	U
Nitrobenzene	UG/KG	0	0%		0	0	12	49	U	50	U	51	U	150	U	49	U	50	U
Pentachlorophenol	UG/KG	0	0%	800	0	0	12	1300	U	1300	U	1400	U	3900	U	1300	U	1400	U
Phenanthrene	UG/KG	240	83%	100000	0	10	12	98	J	87	J	60	J	150	U	47	U	240	J
Phenol	UG/KG	0	0%	330	0	0	12	45	U	45	U	46	U	140	U	44	U	46	U
Pyrene	UG/KG	290	92%	100000	0	11	12	150	J	260	J	120	J	130	U	76	J	250	J
PCBs																			
Aroclor-1016	UG/KG	0	0%	100	0	0	12	20	U	20	U	21	U	20	U	20	U	21	U
Aroclor-1221	UG/KG	0	0%	100	0	0	12	45	U	45	U	46	U	45	U	44	U	46	U
Aroclor-1232	UG/KG	0	0%	100	0	0	12	20	U	20	U	21	U	20	U	20	U	21	U
Aroclor-1242	UG/KG	0	0%	100	0	0	12	31	U	31	U	32	U	31	U	31	U	31	U
Aroclor-1248	UG/KG	0	0%	100	0	0	12	20	U	20	U	21	U	20	U	20	U	21	U
Aroclor-1254	UG/KG	54	8%	100	0	1	12	54	J	20	U	21	U	20	U	20	U	21	U
Aroclor-1260	UG/KG	0	0%	100	0	0	12	35	U	36	U	36	U	36	U	35	U	36	U
Aroclor-1268	UG/KG	0	0%	100	0	0	12	20	U	20	U	21	U	20	U	20	U	21	U
Pesticides																			
4,4'-DDD	UG/KG	0	0%	3.3	0	0	12	20	U	20	U	20	U	20	U	20	U	20	U
4,4'-DDE	UG/KG	0	0%	3.3	0	0	12	20	U	20	U	20	U	20	U	20	U	20	U
4,4'-DDT	UG/KG	0	0%	3.3	0	0	12	20	U	20	U	20	U	20	U	20	U	20	U
Aldrin	UG/KG	0	0%	5	0	0	12	9.8	U	9.9	U	11	U	9.9	U	9.8	U	10	U
Alpha-BHC	UG/KG	0	0%	20	0	0	12	9.8	U	9.9	U	11	U	9.9	U	9.8	U	10	U
Alpha-Chlordane	UG/KG	0	0%	94	0	0	12	9.8	U	9.9	U	11	U	9.9	U	9.8	U	10	U
Beta-BHC	UG/KG	0	0%	36	0	0	12	9.8	U	9.9	U	11	U	9.9	U	9.8	U	10	U
Chlordane (Alpha And Gamma Isomers)	UG/KG	0	0%	94	0	0	0												
Delta-BHC	UG/KG	0	0%	40	0	0	12	9.8	U	9.9	U	11	U	9.9	U	9.8	U	10	U
Dieldrin	UG/KG	0	0%	5	0	0	12	20	U	20	U	20	U	20	U	20	U	20	U
Endosulfan I	UG/KG	0	0%	2400	0	0	12	9.8	U	9.9	U	11	U	9.9	U	9.8	U	10	U
Endosulfan II	UG/KG	0	0%	2400	0	0	12	20	U	20	U	20	U	20	U	20	U	20	U
Endosulfan sulfate	UG/KG	0	0%	2400	0	0	12	20	U	20	U	20	U	20	U	20	U	20	U
Endrin	UG/KG	0	0%	14	0	0	12	20	U	20	U	20	U	20	U	20	U	20	U
Endrin aldehyde	UG/KG	0	0%		0	0	12	20	U	20	U	20	U	20	U	20	U	20	U
Endrin ketone	UG/KG	0	0%		0	0	12	20	U	20	U	20	U	20	U	20	U	20	UJ
Gamma-BHC/Lindane	UG/KG	0	0%	100	0	0	12	9.8	U	9.9	U	11	U	9.9	U	9.8	U	10	U
Gamma-Chlordane	UG/KG	0	0%		0	0	12	9.8	U	9.9	U	11	U	9.9	U	9.8	U	10	U
Heptachlor	UG/KG	0	0%	42	0	0	12	9.8	U	9.9	U	11	U	9.9	U	9.8	U	10	U
Heptachlor epoxide	UG/KG	0	0%		0	0	12	9.8	U	9.9	U	11	U	9.9	U	9.8	U	10	U
Methoxychlor	UG/KG	0	0%		0	0	12	97	U	98	U	100	U	98	U	97	U	99	U
Toxaphene	UG/KG	0	0%		0	0	12	200	U	200	U	200	U	200	U	200	U	200	U
Metals																			
Aluminum	MG/KG	14900	100%		0	12	12	14400		14900		14600		13200		13900		13600	
Antimony	MG/KG	0	0%		0	0	12	0.456	U	0.467	U	0.473	U	0.469	U	0.458	U	0.474	UJ
Arsenic	MG/KG	5.1	100%	13	0	12	12	3.9	J	4.5	J	3.9	J	3.9	J	3.4	J	4.5	J
Barium	MG/KG	105	100%	350	0	12	12	96.7		98		105		88.8		90.2		94.7	

Table B-3C
SEAD-12 Overburden Pit C1 Soil Sample Analytical Results
Compared to NYSDEC Unrestricted Use Levels
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID								S12STOCK-C1-07		S12STOCK-C1-08		S12STOCK-C1-09		S12STOCK-C1-10		S12STOCK-C1-11		S12STOCK-C1-11	
MATRIX								SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
SAMPLE ID								S12STOCK-C1-07		S12STOCK-C1-08		S12STOCK-C1-09		S12STOCK-C1-10		S12STOCK-C1-12		S12STOCK-C1-11	
TOP OF SAMPLE								0		0		0		0		0		0	
BOTTOM OF SAMPLE								0.2		0.2		0.2		0.2		0.2		0.2	
SAMPLE DATE								40031		40031		8/6/2009		8/6/2009		8/6/2009		8/6/2009	
QC CODE								SA		SA		SA		SA		DU		SA	
STUDY ID								RA		RA		RA		RA		RA		RA	
AREA								Pit C1		Pit C1		Pit C1		Pit C1		Pit C1		Pit C1	
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**NYSDEC Unrestricted Use Level**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)
Beryllium	MG/KG	0.742	100%	7.2	0	12	12	0.727		0.742		0.737		0.683		0.684		0.68	
Cadmium	MG/KG	0.371	92%	2.5	0	11	12	0.371	J	0.343	J	0.336	J	0.325	J	0.293	J	0.358	J
Calcium	MG/KG	66700	100%		0	12	12	43100		28300		34900		57800		35000		42400	J
Chromium	MG/KG	22.4	100%	30	0	12	12	22		22.4		20.5		20.1		21.6		20.4	
Cobalt	MG/KG	12.5	100%		0	12	12	10.7		11.3		10		9.9		10.1		10.9	
Copper	MG/KG	24.4	100%	50	0	12	12	23.7		24.2		21.6		23.6		22.5		23.4	
Cyanide	MG/KG	0	0%	27	0	0	12	0.5	U	0.42	U	0.5	U	0.42	U	0.5	U	0.5	U
Iron	MG/KG	26300	100%		0	12	12	23800		26300		23600		23000		25200		24300	
Lead	MG/KG	33.2	100%	63	0	12	12	19.9	J	20.3	J	19.2	J	19.9	J	16.6	J	33.2	J
Magnesium	MG/KG	10700	100%		0	12	12	8900		7720		8590		10200		8090		10000	
Manganese	MG/KG	651	100%	1600	0	12	12	524		615		587		491		518		559	
Mercury	MG/KG	0.05	92%	0.18	0	11	12	0.05		0.002	U	0.047		0.037	J	0.043		0.049	
Nickel	MG/KG	32.3	100%	30	5	12	12	**32.3**		**31.4**		26.8		29.6		**30.8**		**30.8**	
Potassium	MG/KG	2110	100%		0	12	12	2080		1750		2070		2020		1670		1750	
Selenium	MG/KG	0	0%	3.9	0	0	2	1	R	0.96	R	0.897	R	0.203	U	0.859	R	1.1	R
Silver	MG/KG	0	0%	2	0	0	12	0.029	U	0.03	U	0.03	U	0.03	U	0.029	U	0.03	U
Sodium	MG/KG	105	100%		0	12	12	95.9	J	75.9	J	81.8	J	105	J	89.4	J	95.1	J
Thallium	MG/KG	0	0%		0	0	12	0.401	U	0.617	U	0.416	U	0.413	U	0.403	U	0.417	U
Vanadium	MG/KG	27.3	100%		0	12	12	25		25.8		27.3		24.2		23.7		23.8	
Zinc	MG/KG	109	100%	109	0	12	12	102		98		92.1		99.6		89.9		109	

Notes:
(1) The dataset of samples consists of the overburden C1 samples
The Inplace samples were not included in this dataset
(2) NYSDEC's Unrestricted Use Soil Cleanup Objective, 6 NYCRR Part 375-6.8(a).
(3) Sample/Duplicate pairs are evaluated as separate and discrete samples in this table
(4) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected; the associated reporting limit is approximate
R = the analytical result was rejected during data validation

Table B-3R
SEAD-12 Overburden Disposal Pit C1 Radiological Soil Sample Results
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION	SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12
LOCATION ID	S12STOCK-C1-02	S12STOCK-C1-03	S12STOCK-C1-04	S12STOCK-C1-05	S12STOCK-C1-06	S12STOCK-C1-07	S12STOCK-C1-08	S12STOCK-C1-09	S12STOCK-C1-10	S12STOCK-C1-11
MATRIX	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID	S12STOCK-C1-02	S12STOCK-C1-03	S12STOCK-C1-04	S12STOCK-C1-05	S12STOCK-C1-06	S12STOCK-C1-07	S12STOCK-C1-08	S12STOCK-C1-09	S12STOCK-C1-10	S12STOCK-C1-11
TOP OF SAMPLE	0	0	0	0	0	0	0	0	0	0
BOTTOM OF SAMPLE	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009
QC CODE	SA	SA	SA	SA	SA	SA	SA	SA	SA	SA
STUDY ID	RA	RA	RA	RA	RA	RA	RA	RA	RA	RA
AREA	PIT C1	PIT C1	PIT C1	PIT C1	PIT C1	PIT C1	PIT C1	PIT C1	PIT C1	PIT C1

Parameter	Units	Value	(Q)	(U)	Value	(Q)	(U)	Value	(Q)	(U)	Value	(Q)	(U)	Value	(Q)	(U)	Value	(Q)	(U)	Value	(Q)	(U)	Value	(Q)	(U)	Value	(Q)	(U)
Actinium-228	PCI/G	0.559	UI	0.29	1.07		0.29	0.622		0.36	0.47	UI	0.35	0.937		0.25	0.823		0.23	1		0.26	0.856		0.23	1.13		0.33	0.85		0.26
Americium-241	PCI/G																												0.321	U	0.18
Bismuth-211	PCI/G	0.409	UI	0.56	0.298	UI	0.41	0.321	UI	0.42	0.359	UI	0.51	0.291	UI	0.3	0.242	UI	0.34	0.302	UI	0.38	0.26	UI	0.38	0.403	UI	0.45	0.278	UI	0.38
Bismuth-212	PCI/G	0.849	U	0.67	0.647	U	0.34	0.773	U	0.46	0.646	U	0.57	0.55	U	0.35	0.453	U	0.31	0.619	UI	0.32	0.568	UI	0.33	0.771	UI	0.53	0.571	UI	0.39
Bismuth-214	PCI/G	0.6		0.18	0.65		0.13	0.617		0.19	0.264	UI	0.19	0.587		0.12	0.723		0.12	0.633		0.14	0.678		0.14	0.651		0.2	0.546		0.15
Cesium-137	PCI/G	0.234		0.08	0.133		0.06	0.167		0.09	0.298		0.08	0.151		0.04	0.206		0.05	0.214		0.07	0.199		0.06	0.221		0.09	0.183		0.05
Cobalt-60	PCI/G																												0.0601	U	0.04
Gross Alpha	PCI/G	16.4		5.6	13.1		5.81	9.32		5.56	9.35		4	11.4		4.11	7.38		3.68	9.77		4.06	9.05		3.91	12.4		4.32	9.55		4.03
Gross Beta	PCI/G	26.9		4.76	22.3		4.33	28.8		5.03	27.7		4.28	30.6		4.8	21.8		3.76	21.3		3.8	23.6		3.96	25		3.92	22.6		3.85
Lead-211	PCI/G	2.04	U	1.24	1.47	U	0.86	1.77	U	1.19	1.81	U	1.06	1.31	U	0.77	1.07	U	0.74	1.51	U	0.91	1.09	U	0.77	1.77	U	1.08	1.4	U	0.93
Lead-212	PCI/G	1.12		0.16	0.891		0.11	0.951		0.13	0.913		0.18	0.782		0.09	0.915		0.1	0.898		0.11	0.933		0.13	1.03		0.14	0.688		0.13
Lead-214	PCI/G	0.718		0.2	0.729		0.15	0.787		0.15	0.64		0.18	0.528		0.11	0.703		0.12	0.796		0.14	0.808		0.14	0.9		0.16	0.689		0.14
Potassium-40	PCI/G	23.9		3.03	19.6		2.26	18.5		2.03	19.6		2.19	20.3		2.16	21.7		2.03	21		2.1	20.8		1.95	21.9		2.23	21		2.36
Protactinium-234	PCI/G	0.746	U	0.44	0.571	U	0.31	0.572	U	0.35	0.479	U	0.3	0.411	U	0.23	0.347	U	0.22	0.459	U	0.27	0.394	U	0.25	0.494	U	0.35	0.455	U	0.28
Radium-226 (1)	PCI/G	0.6		0.18	0.65		0.13	0.617		0.19	0.264	UI	0.19	0.587		0.12	0.723		0.12	0.633		0.14	0.678		0.14	0.651		0.2	0.546		0.15
Thallium-208	PCI/G	0.357		0.11	0.286		0.07	0.277		0.08	0.348		0.09	0.216		0.06	0.306		0.06	0.311		0.07	0.262		0.07	0.338		0.09	0.233		0.06
Thorium-230	PCI/G	10.3	U	21.6	15.2	U	38	10.7	U	17	27.5	U	62.6	16	U	59.5	17.4	U	19.5	17.6	U	17.9	13.5	U	8.92	11.5	U	18.8	19.1	U	36.2
Thorium-234	PCI/G	1.29		0.8	2.07	U	1.2	1.07		0.83	3.73	U	2.22	1.86	U	1.66	2.42		1.67	2	U	1.14	1.51	U	0.98	1.07	U	1.26	2.74	U	1.55
Uranium-235	PCI/G	0.325	U	0.2	0.283	U	0.16	0.341	U	0.2	0.423	U	0.25	0.297	U	0.18	0.291	U	0.18	0.284	U	0.19	0.289	U	0.18	0.38	U	0.22	0.297	U	0.17

Note:
(1) The project plan called for utilizing the 609 keV Bi-214 gamma energy for quantifying Ra-226. Direct quantification of Ra-226 via gamma spectroscopy is prone to errors and high levels of uncertainty.
(Q) = Qualifer
(U) = Uncertainty
U = Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI = Gamma Spectroscopy − Uncertain identification
Americium-241 and Cobalt-60 were not analyzed for these samples, but were presented to allow for cross comparison.

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APPENDIX C

WASTE DISPOSAL CHARACTERIZATION RESULTS

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Table C-1C
SEAD-12 Waste Disposal Characterization Analytical Data
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION								SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12
LOCATION ID								S12DS04	S12DS05	S12DS08	S12DS11	S12DS14	S12DS17
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								S12DS04	S12DS05	S12DS08	S12DS11	S12DS14	S12DS17
TOP OF SAMPLE								0	0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								7/30/2009	7/30/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009
QC CODE								SA	SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Action Level [2]**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
PCBs													
Aroclor-1016	UG/KG	0	0%		0	0	6	2000 U	20 U	400 U	2000 U	2000 U	2000 U
Aroclor-1221	UG/KG	0	0%		0	0	6	4300 U	44 U	890 U	4400 U	4400 U	4400 U
Aroclor-1232	UG/KG	0	0%		0	0	6	2000 U	20 U	400 U	2000 U	2000 U	2000 U
Aroclor-1242	UG/KG	0	0%		0	0	6	3000 U	30 U	610 U	3000 U	3100 U	3000 U
Aroclor-1248	UG/KG	0	0%		0	0	6	2000 U	20 U	400 U	2000 U	2000 U	2000 U
Aroclor-1254	UG/KG	15000	0%	10000	1	6	0	7900 =	73 JN	4600 =	**15000** =	9600 =	8400 =
Aroclor-1260	UG/KG	0	0%	10000	0	0	6	3400 U	35 U	700 U	3500 U	3500 U	3500 U
Aroclor-1268	UG/KG	0	0%		0	0	0						
Pesticides													
4,4'-DDD	UG/KG	0	0%	2900	0	0	6	19 U	1.9 U	2 U	2 U	2 U	1.9 U
4,4'-DDE	UG/KG	0	0%	2100	0	0	6	19 U	1.9 U	2 U	2 U	2 U	1.9 U
4,4'-DDT	UG/KG	0	0%	2100	0	0	6	19 U	1.9 U	2 U	2 U	2 U	1.9 U
Aldrin	UG/KG	0	0%	41	0	0	6	9.5 U	0.96 U	0.98 U	0.97 U	0.98 U	0.96 U
Alpha-BHC	UG/KG	14	500%	110	0	5	1	9.5 U	12 =	6.6 =	4.8 =	6.1 =	14 =
Alpha-Chlordane	UG/KG	0	0%		0	0	6	9.5 U	0.96 U	0.98 U	0.97 U	0.98 U	0.96 U
Beta-BHC	UG/KG	0	0%	200	0	0	6	9.5 U	0.96 U	0.98 U	0.97 U	0.98 U	0.96 U
Delta-BHC	UG/KG	0	0%	300	0	0	6	9.5 U	0.96 U	0.98 U	0.97 U	0.98 U	0.96 U
Dieldrin	UG/KG	0	0%	44	0	0	6	19 U	1.9 U	2 U	2 U	2 U	1.9 U
Endosulfan I	UG/KG	0	0%	900	0	0	6	9.5 U	0.96 U	0.98 U	0.97 U	0.98 U	0.96 U
Endosulfan II	UG/KG	0	0%	900	0	0	6	19 U	1.9 U	2 U	2 U	2 U	1.9 U
Endosulfan sulfate	UG/KG	0	0%	1000	0	0	6	19 U	1.9 U	2 U	2 U	2 U	1.9 U
Endrin	UG/KG	0	0%	100	0	0	6	19 U	1.9 U	2 U	2 U	2 U	1.9 U
Endrin aldehyde	UG/KG	0	0%		0	0	6	19 U	1.9 U	2 U	2 U	2 U	1.9 U
Endrin ketone	UG/KG	0	0%		0	0	6	19 U	1.9 U	2 U	2 U	2 U	1.9 U
Gamma-BHC/Lindane	UG/KG	0	0%	60	0	0	6	9.5 U	0.96 U	0.98 U	0.97 U	0.98 U	0.96 U
Gamma-Chlordane	UG/KG	0	0%	540	0	0	6	9.5 U	0.96 U	0.98 U	0.97 U	0.98 U	0.96 U
Heptachlor	UG/KG	0	0%	100	0	0	6	9.5 U	0.96 U	0.98 U	0.97 U	0.98 U	0.96 U
Heptachlor epoxide	UG/KG	0	0%	20	0	0	6	9.5 U	0.96 U	0.98 U	0.97 U	0.98 U	0.96 U
Methoxychlor	UG/KG	0	0%		0	0	6	95 U	9.5 U	9.7 U	9.6 U	9.7 U	9.5 U
Toxaphene	UG/KG	0	0%		0	0	6	190 U	19 U	20 U	20 U	20 U	19 U
Other													
Flashpoint	DEG C	100	0%		0	6	0	100 =,X	100 =,X	100 =,X	100 =,X	100 =,X	100 =,X
TCLP													
TCLP 1,1-Dichloroethene	UG/L	0	0%	700	0	0	6	5.9 U	5.9 U	5.9 U	5.9 U	5.9 U	5.9 U
TCLP 1,2-Dichloroethane	UG/L	0	0%	500	0	0	6	4.2 U	4.2 U	4.2 U	4.2 U	4.2 U	4.2 U
TCLP Benzene	UG/L	0	0%	500	0	0	6	4.2 U	4.2 U	4.2 U	4.2 U	4.2 U	4.2 U
TCLP Carbon tetrachloride	UG/L	0	0%	500	0	0	6	3.6 U	3.6 U	3.6 U	3.6 U	3.6 U	3.6 U
TCLP Chlorobenzene	UG/L	0	0%	100000	0	0	6	4.4 U	4.4 U	4.4 U	4.4 U	4.4 U	4.4 U
TCLP Chloroform	UG/L	0	0%	6000	0	0	6	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U
TCLP Methyl ethyl ketone	UG/L	0	0%	200000	0	0	6	10 U	10 U	10 U	10 U	10 U	10 U
TCLP Tetrachloroethene	UG/L	0	0%	700	0	0	6	4.3 U	4.3 U	4.3 U	4.3 U	4.3 U	4.3 U
TCLP Trichloroethene	UG/L	0	0%	500	0	0	6	6.3 U	6.3 U	6.3 U	6.3 U	6.3 U	6.3 U
TCLP Vinyl chloride	UG/L	0	0%	200	0	0	6	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U

Table C-1C
SEAD-12 Waste Disposal Characterization Analytical Data
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION							SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12	SEAD-12
LOCATION ID							S12DS04	S12DS05	S12DS08	S12DS11	S12DS14	S12DS17
MATRIX							SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID							S12DS04	S12DS05	S12DS08	S12DS11	S12DS14	S12DS17
TOP OF SAMPLE							0	0	0	0	0	0
BOTTOM OF SAMPLE							0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE							7/30/2009	7/30/2009	8/6/2009	8/6/2009	8/6/2009	8/6/2009
QC CODE							SA	SA	SA	SA	SA	SA
STUDY ID							RA	RA	RA	RA	RA	RA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Action Level [2]**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
TCLP 1,4-Dichlorobenzene	UG/L	0	0%	7500	0	0	6	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U
TCLP 2,4,5-Trichlorophenol	UG/L	0	0%		0	0	6	0.74 U	0.74 U	0.74 U	0.74 U	0.74 U	0.74 U
TCLP 2,4,6-Trichlorophenol	UG/L	0	0%	2000	0	0	6	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
TCLP 2,4-Dinitrotoluene	UG/L	0	0%	100	0	0	6	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U
TCLP 2-Methylphenol	UG/L	0	0%		0	0	6	0.99 U	0.99 U	0.99 U	0.99 U	0.99 U	0.99 U
TCLP Hexachlorobenzene	UG/L	0	0%	100	0	0	6	0.96 U	0.96 U	0.96 U	0.96 U	0.96 U	0.96 U
TCLP Hexachlorobutadiene	UG/L	0	0%		0	0	6	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U
TCLP Hexachloroethane	UG/L	0	0%		0	0	6	0.71 U	0.71 U	0.71 U	0.71 U	0.71 U	0.71 U
TCLP Nitrobenzene	UG/L	0	0%	2000	0	0	6	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U
TCLP Pentachlorophenol	UG/L	0	0%	100000	0	0	6	31 U	31 U	31 U	31 U	31 U	31 U
TCLP Pyridine	UG/L	0	0%	5000	0	0	6	23 U	23 U	23 U	23 U	23 U	23 U
TCLP Arsenic	UG/L	0	0%	5000	0	0	6	3.2 U	3.2 U	10 U	10 U	10 U	10 U
TCLP Barium	UG/L	724	33%	100000	0	2	6	724 J	653 J	100 U	100 U	100 U	100 U
TCLP Cadmium	UG/L	34.2	33%	1000	0	2	6	9.5 J	34.2 J	10 U	10 U	10 U	10 U
TCLP Chromium	UG/L	2.7	33%	5000	0	2	6	0.706 J	2.7 J	10 U	10 U	10 U	10 U
TCLP Lead	UG/L	3.3	17%	5000	0	1	6	0.886 U	3.3 J	10 U	10 U	10 U	10 U
TCLP Mercury	UG/L	0	0%	200	0	0	6	0.019 U	0.019 U	0.02 U	0.02 U	0.02 U	0.02 U
TCLP Selenium	UG/L	0	0%	1000	0	0	6	4.8 U	4.8 U	10 U	10 U	10 U	10 U
TCLP Silver	UG/L	0	0%	5000	0	0	6	0.829 U	0.829 U	10 U	10 U	10 U	10 U

Notes:
(1) These results have not been validated. Laboratory qualifiers shown.
(2) Hazardous Waste Regulatory Levels for Toxicity Characteristic
(3) A bolded and outlined cell indicates a concentration that exceeded the site-specific CUGs.

U = compound was not detected
J = the reported value is an estimated concentration

Table C-1R
SEAD-12 Waste Disposal Characterization Radiological Data
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION		SEAD-12			SEAD-12			SEAD-12			SEAD-12			SEAD-12			SEAD-12		
LOCATION ID		S12DS06			S12DS07			S12DS08			S12DS09			S12DS10			S12DS11		
MATRIX		SOIL			SOIL			SOIL			SOIL			SOIL			SOIL		
SAMPLE ID		S12DS06			S12DS07			S12DS08			S12DS09			S12DS10			S12DS11		
TOP OF SAMPLE		0			0			0			0			0			0		
BOTTOM OF SAMPLE		0.2			0.2			0.2			0.2			0.2			0.2		
SAMPLE DATE		8/6/2009			8/6/2009			8/6/2009			8/6/2009			8/6/2009			8/6/2009		
QC CODE		SA			SA			SA			SA			SA			SA		
STUDY ID		RA			RA			RA			RA			RA			RA		
Parameter	**Units**	Value	(Q)	(U)	Value	(Q)	(U)	Value	(Q)	(U)	Value	(Q)	(U)	Value	(Q)	(U)	Value	(Q)	(U)
Actinium-228	PCI/G	0.555		0.29	0.684		0.3	1.14		0.27	1		0.23	0.793		0.29	0.987		0.46
Americium-241	PCI/G																		
Bismuth-211	PCI/G	0.391	UI	0.44	0.297	UI	0.43	0.269	UI	0.42	0.306	UI	0.4	0.27	UI	0.42	0.434	UI	0.5
Bismuth-212	PCI/G	0.645	UI	0.47	0.892		0.5	0.604	U	0.53	0.613	U	0.4	0.578	UI	0.41	0.764	U	0.44
Bismuth-214	PCI/G	0.661		0.15	0.685		0.17	0.599		0.15	0.73		0.14	0.638		0.14	0.785		0.19
Cesium-137	PCI/G	0.0804	U	0.05	0.0739	U	0.04	0.072	UI	0.04	0.0624		0.05	0.0584	U	0.07	0.0946	U	0.06
Cobalt-60	PCI/G																		
Gross Alpha	PCI/G	20.6		6.39	10.8		4.68	9.43		4.16	8.03		3.3	17.3		5.5	14.4		5.19
Gross Beta	PCI/G	30.4		4.88	25.6		5.18	28.1		4.49	21.1		3.86	39		5.85	32.7		4.92
Lead-211	PCI/G	1.59	U	1.18	1.46	U	0.98	1.36	U	0.87	1.21	U	0.93	1.43	U	0.86	1.88	U	1.52
Lead-212	PCI/G	0.867		0.12	0.998		0.12	0.875		0.11	0.896		0.11	0.845		0.12	0.836		0.14
Lead-214	PCI/G	0.778		0.16	0.818		0.16	0.735		0.15	0.818		0.15	0.807		0.15	0.838		0.18
Potassium-40	PCI/G	21.4		2.17	21.4		2.42	22		2.46	23.1		2.16	20.7		2.2	23		2.24
Protactinium-234	PCI/G	0.549	U	0.33	0.463	U	0.29	0.517	U	0.31	0.507	U	0.29	0.422	U	0.28	0.679	U	0.43
Radium-226	PCI/G	2.82		2.4	2.53		2.29	2.54		2.12	1.73		1.53	2.01		1.78	2.32		2.35
Thallium-208	PCI/G	0.341		0.07	0.315		0.07	0.287		0.07	0.113	UI	0.06	0.218		0.07	0.364		0.09
Thorium-230	PCI/G	20.3	U	31.1	19.1	U	21.2	20.2	U	91.7	15.5	U	39.7	15.4	U	19.3	10.3	U	32.9
Thorium-234	PCI/G	2.57	U	1.47	2.17	U	1.81	2.69	U	1.58	1.65	U	1.23	1.82	U	1.6	0.98	UI	1.31
Uranium-235	PCI/G	0.367	U	0.22	0.321	U	0.19	0.308	U	0.18	0.331	U	0.2	0.295	U	0.18	0.411	U	0.25

Note:
(Q) = Qualifer
(U) = Uncertainty
U = Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI = Gamma Spectroscopy – Uncertain identification
Americium-241 and Cobalt-60 were not analyzed for these samples, but were presented to allow for cross comparison.

Table C-1R
SEAD-12 Waste Disposal Characterization Radiological Data
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION		SEAD-12			SEAD-12			SEAD-12			SEAD-12			SEAD-12			SEAD-12	
LOCATION ID		S12DS12			S12DS13			S12DS14			S12DS15			S12DS16			S12DS17	
MATRIX		SOIL			SOIL			SOIL			SOIL			SOIL			SOIL	
SAMPLE ID		S12DS12			S12DS13			S12DS14			S12DS15			S12DS16			S12DS17	
TOP OF SAMPLE		0			0			0			0			0			0	
BOTTOM OF SAMPLE		0.2			0.2			0.2			0.2			0.2			0.2	
SAMPLE DATE		8/6/2009			8/6/2009			8/6/2009			8/6/2009			8/6/2009			8/6/2009	
QC CODE		SA			SA			SA			SA			SA			SA	
STUDY ID		RA			RA			RA			RA			RA			RA	
Parameter	**Units**	Value	(Q)	(U)	Value	(Q)	(U)	Value	(Q)	(U)	Value	(Q)	(U)	Value	(Q)	(U)	Value	(Q)	(U)
Actinium-228	PCI/G	0.907		0.29	0.833		0.4	0.784		0.23	0.884		0.24	1.23		0.3	0.847		0.23
Americium-241	PCI/G																		
Bismuth-211	PCI/G	0.307	UI	0.38	0.396	UI	0.53	0.262	UI	0.34	0.243	UI	0.32	0.334	UI	0.43	0.237	UI	0.35
Bismuth-212	PCI/G	0.815		0.39	0.74	UI	0.5	0.502	UI	0.3	0.463	UI	0.3	0.664	UI	0.59	0.524	UI	0.37
Bismuth-214	PCI/G	0.788		0.16	0.655		0.19	0.603		0.13	0.681		0.13	0.584		0.14	0.706		0.13
Cesium-137	PCI/G	0.0703	U	0.04	0.0868	U	0.05	0.0762		0.05	0.0502		0.04	0.0731	U	0.04	0.0521	U	0.04
Cobalt-60	PCI/G																		
Gross Alpha	PCI/G	10.6		4.72	10.1		4.65	9.33		4.47	16.5		5.6	22.8		6.51	9.71		4.1
Gross Beta	PCI/G	22.8		4.28	23.3		4.36	20.5		4.12	22.4		4.13	43.6		6.02	27.3		5.05
Lead-211	PCI/G	1.56	U	0.92	1.83	U	1.18	1.26	U	0.73	1.08	U	0.76	1.46	U	0.98	1.19	U	0.7
Lead-212	PCI/G	0.918		0.11	0.965		0.15	0.785		0.09	0.862		0.1	1.19		0.13	0.826		0.12
Lead-214	PCI/G	0.87		0.14	0.863		0.19	0.762		0.12	0.855		0.12	0.743		0.15	0.725		0.13
Potassium-40	PCI/G	22.7		2.28	22.5		2.41	19.8		2.17	21.8		2.03	20.6		2.14	20.5		1.86
Protactinium-234	PCI/G	0.472	U	0.31	0.585	U	0.35	0.447	U	0.27	0.333	U	0.23	0.478	U	0.29	0.363	U	0.24
Radium-226	PCI/G	1.32		1.38	2.65		2.44	1.27		1.22	2.88		2.29	2.31		2.03	2.34		1.95
Thallium-208	PCI/G	0.293		0.07	0.336		0.09	0.294		0.06	0.31		0.06	0.362		0.07	0.222		0.06
Thorium-230	PCI/G	15.5	U	16.6	29.9	U	44.7	16.3	U	84.6	18.1	U	20	17.5	U	88.9	12.3	U	9.4
Thorium-234	PCI/G	1.67	U	1.15	3.56	U	2.21	1.88	U	1.41	2.18	U	1.27	1.93	U	1.74	1.37	U	1.1
Uranium-235	PCI/G	0.305	U	0.19	0.432	U	0.26	0.306	U	0.18	0.285	U	0.18	0.351	U	0.21	0.268	U	0.16

Note:
(Q) = Qualifer
(U) = Uncertainty
U = Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI = Gamma Spectroscopy – Uncertain identification
Americium-241 and Cobalt-60 were not analyzed for these samples, but were presented to allow for cross comparison.

APPENDIX D

CABRERA SERVICES INC. RADIOLOGICAL CONFIRMATION SURVEY REPORT

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DRAFT FINAL

RADIOLOGICAL CONFIRMATION SURVEY REPORT

REMOVAL ACTION AT THE RADIOLOGICAL WASTE BURIAL PIT SITES (SEAD-12)

SENECA ARMY DEPOT ACTIVITY

ROMULUS, NEW YORK

Prepared for:

PARSONS

100 High Street
Boston, MA 02110

Prepared by:

CABRERA SERVICES
RADIOLOGICAL · ENGINEERING · REMEDIATION

CABRERA SERVICES, INC.

473 Silver Lane
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November 2011

Contract Number W912DY-08-D-0003
Task Order No. 0003
EPA Site ID# NY0213820830
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LIST OF ACRONYMS AND ABBREVIATIONS

^{227}Ac	Actinium-227
^{228}Ac	Actinium-228
ALARA	As Low As Reasonably Achievable
ANL	Argonne National Laboratory
BEIR	Biological Effects of Ionizing Radiation
^{212}Bi	Bismuth-212
^{214}Bi	Bismuth-214
BRA	baseline risk assessment
BRAC	Base Realignment and Closure Act
CABRERA	Cabrera Services, Inc.
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	United States Code of Federal Regulations
cm^2	square centimeters
^{137}Cs	Cesium-137
CSF	cancer slope factor
DCF	dose conversion factor
DCGL$_w$	Derived Concentration Guideline Level
dpm/100 cm^2	disintegrations per minute per 100 square centimeters
DQO	Daily Quality Objective
EMC	Elevated Measurement Comparison
FGR	Federal Guidance Report
FSP	Radiological Field Sampling Plan
FSS	Final Status Survey
ft	feet
ft^2	square feet
GM	Geiger Mueller
GPS	Global Positioning System
GWS	Gamma Walkover Survey
^{3}H	tritium
H$_a$	Alternative Hypothesis
H$_o$	Null Hypothesis
HHRA	human health risk assessment
HP	health physicist
ICRP	International Commission of Radiation Protection
ILCR	incremental lifetime cancer risks
^{40}K	Potassium-40
keV	kiloelectron volt
LTP	License Termination Plan
LTR	License Termination Rule
m^2	Square Meter
MARSSIM	Multi-Agency Radiological Survey and Site Investigation Manual
MCA	multi-channel analyzer
MCL	maximum contaminant level
MDC	Minimum Detectable Concentration
mg	milligram
µR/h	microroentgen per hour
mrem/yr	millirem per year
3x3NaI	3 inch by 3 inch sodium iodide crystal
3x3 NaI(Tl)	3 inch by 3 inch sodium iodide crystal activated with thallium
No.	number
NRC	United States Nuclear Regulatory Commission
NYSDEC	New York State Department of Environmental Conservation
Parsons	Parsons Infrastructure & Technology Group Inc.
^{210}Pb	Lead-210
^{211}Pb	Lead-211
^{212}Pb	Lead-212
^{214}Pb	Lead-214
PC	personal computer
pCi/g	picoCuries per gram
^{239}Pu	Plutonium-239

LIST OF ACRONYMS AND ABBREVIATIONS (CONTINUED)

^{240}Pu	Plutonium-240
QC	Quality Control
^{223}Ra	Radium-223
^{226}Ra	Radium-226
^{228}Ra	Radium-228
RA	Removal Action
RCOCs	radiological contaminants of concern
RI	Remedial Investigation
^{222}Rn	Radon-222
ROPCs	radionuclides of potential concern
SEAD-12	Radiological Waste Burial Sites
SEDA	Seneca Army Depot Activity
SU	Survey Unit
TEDE	Total Effective Dose Equivalent
^{227}Th	Thorium-227
^{228}Th	Thorium-228
^{232}Th	Thorium-232
^{208}Tl	Thallium-208
^{238}U	Uranium-238
UCL	upper confidence limit
U.S.	United States
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
WSA	Weapons Storage Area

1.0 INTRODUCTION

Cabrera Services, Inc. (CABRERA) has prepared this *Radiological Confirmation Survey Report* for Parsons Infrastructure & Technology Group Inc. (Parsons), which was tasked under United States Army Corps of Engineers (USACE) Contract Number (No.) W912DY-08-D-0003, Task Order No. 0003, to perform a Removal Action (RA) of classified military-related materials and other debris from Disposal Pits A/B and C that are located at the Radiological Waste Burial Pit Sites (SEAD-12) within the former Seneca Army Depot Activity (SEDA) in Seneca County, New York. After the RA was completed, a confirmation survey of the remediated areas was performed to facilitate the release of the site for unrestricted use. Finally, a dose and risk assessment was performed to determine the risk attributable to the level of residual radioactivity distinguishable from background at the site.

Parsons prepared a project Work Plan (Parsons, 2009) under the assumption that the excavation would proceed in a manner similar to that performed by Plexus (with support from CABRERA) at SEAD-63 in 2004 (Plexus, 2005).

The excavation in SEAD-12 in 2009 resulted in the discovery of multiple radioactive military items, including dials containing radium and presumed facsimiles of classified system components containing thorium. Some limited contamination of soils, consisting of small dial fragments, was observed. CABRERA provided health physics support during the excavation of the disposal pits at SEAD-12. This included screening excavated soil in 1-foot lifts and removing any radioactive items before the soils were characterized and then either shipped off-site for disposal or used as backfill at the Site. The confirmation survey of the disposal pits was performed in accordance with the *Radiological Field Sampling Plan* (*FSP*; Parsons, 2009). Due to the discovered radiological items within the excavation, this confirmation survey was updated as described in the technical memorandum *Summary of Field Activities* (CABRERA, 2009), which is included in Attachment A of this report.

1.1 Background and Site History

The SEDA is located approximately 40 miles south of Lake Ontario, near Romulus, New York as shown on Figure 1-1. The SEDA previously occupied approximately 10,600 acres of land located in the Towns of Varick and Romulus in Seneca County, New York. The former military facility was owned by the United States (US) Government and operated by the Army between 1941 and approximately 2000, when the SEDA military mission ceased. Since 2000, more than 8,250 acres of land have been transferred from the Army to other public and private parties for reuse.

The mission of SEDA primarily entailed the management of munitions and included:

- Receiving, storing, and distributing ammunition and explosives;
- Providing receipt, storage, and distribution of items that support special weapons; and,

- Performing depot-level maintenance, demilitarization, and surveillance on conventional ammunition and special weapons.

SEAD-12 is located in the north central portion of SEDA within the former Weapons Storage Area (WSA), which is also known as the "Q" Area. As shown on Figure 1-1, SEAD-12 originally was originally defined by two separate areas designated as SEAD-12A located in the northeast corner of the WSA, and SEAD-12B located northeast of Buildings 803, 804, and 805 near the north central border of the Depot. SEAD-12A encompassed an area measuring approximately 1,000 feet (ft) long by 1,000 ft wide (approximately 93,000 square meters [m^2]), and contains Disposal Pits A/B and C. SEAD-12B encompassed an area measuring approximately 300 ft long by 300 ft wide (approximately 8,400 m^2), which was suspected to contain a buried 5,000 gallon underground storage tank and a small dry waste pit.

The bounds of SEAD-12 were increased to include approximately 360 acres of land after the completion of the Expanded Site Inspections in 1995. This decision was based on the similarity of the chemicals found at SEAD-12A and SEAD-12B, and the Army's knowledge of the general history and use of the Q Area, which suggested similar constituents could exist throughout the larger area.

The portion of SEAD-12 located north of Service Road No. 2 was used for disposal of laboratory and maintenance wastes, and military components. The northern portion of SEAD-12 also includes Buildings 802 through 807, 810, 812 and 825 which were part of the WSA facility at SEDA. The eastern, western, and southern portions of SEAD-12 are primarily open fields and include Buildings 813 through 817, 819, and 823. These buildings were also part of the former WSA facility at SEDA.

The area designated as SEAD-12 excludes the area of SEAD-63, the Miscellaneous Components Burial Site, which is located along the western boundary of the former Q Area (see Figure 1-1). A Non-Time Critical Removal Action was performed for SEAD-63 in 2004, resulting in the removal of 5,100 tons of soil and debris. A record of decision for No Further Action at SEAD-63 was submitted by the Army in September 2006, approved by the US Environmental Protection Agency (USEPA) with concurrence from the New York State Department of Environmental Conservation (NYSDEC), and the solid waste management unit is closed under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

1.2 Previous Radiological Studies

A remedial investigation (RI) was initiated at the expanded SEAD-12 in 1997 and the results were documented in the *Final RI Report* (Parsons, 2002). The RI investigation consisted of: geophysical, radiological, and soil gas surveys; sampling and analysis of subsurface and surface soils, groundwater, surface water, and sediment. The RI included the investigation of the entire 360-acre site, and included the focused analysis and summary of the resulting data on nine potential release areas that were defined based on their historic operations and use. Based on the results of the RI, three subareas of SEAD-12 (i.e., Disposal Pit A/B and Disposal Pit C [former SEAD-12A], and the Former Dry Waste Disposal Pit [former SEAD-12B]) were identified as most likely to pose a continuing threat to human health and the environment, and were carried through the entire risk assessment process. The results of the 2002 RI suggested that potential future risks due to chemical and radiological contaminants at each of these three subareas were within or below USEPA's preferred carcinogenic risk and non-carcinogenic hazard ranges, but further information suggested that military-related items and debris was likely to be present in the area of the former SEAD-12A (Disposal Pit A/B and C). The areas of Disposal Pit A/B, and C, which was further divided into Pit C-1 and C-2, are shown in Figure 1-2.

As part of the RI, seventy-seven (77) surface and subsurface soil samples were analyzed for radionuclides in the Disposal Pit A/B area, with 17 re-sampled to clarify the reported detection of Plutonium-239/240 (^{239}Pu/^{240}Pu) in the samples. Radiological soil sampling detected six isotopes (Bismuth-214 [^{214}Bi], Lead-210 [^{210}Pb], Lead-214 [^{214}Pb], Radium-223 [^{223}Ra], Radium-228 [^{228}Ra], and Tritium [^{3}H]) at levels that statistically exceeded background; however no isotopes exceed the background plus the derived concentration guideline level (DCGL) developed by Argonne National Laboratory (ANL) for use during the license termination effort at SEDA in 2003 (ANL, 2003). The re-sampling confirmed that the levels of the ^{239}Pu/^{240}Pu detections observed during the initial sampling event were a function of the detection limit and not actual levels present.

Ninety-eight (98) surface and subsurface soil samples were analyzed for radionuclides in the Disposal Pit C area with 13 re-sampled to clarify the reported detection of ^{239}Pu/^{240}Pu in samples. Radiological soil sampling detected six isotopes (^{214}Bi, ^{210}Pb, ^{223}Ra, ^{226}Ra, ^{228}Ra, and ^{3}H) at levels that statistically exceeded background; however no isotopes exceed the background plus DCGL. The re-sampling confirmed that the levels of the ^{239}Pu/^{240}Pu detections observed during the initial sampling event were a function of the detection limit and were considered false positives.

Shortly after beginning the SEAD-12 Removal Action in 2009 the discovery of the multiple radioactive military items, including dials containing radium and/or thorium, and presumed facsimiles of classified system components containing thorium, prompted the collection of three samples of material and four smear samples with activity detected above background. These samples were sent to GEL Laboratory LLC in Charleston, South Carolina, for quick screen gamma spectroscopy analyses involving gamma spectroscopy analysis without incorporating a delay time for ingrowth of isotopic progeny. The results were used to confirm the suspected radionuclides contaminants of concern (RCOCs) for this project. Table 1-1 lists the samples and detected results.

Table 1-1. Gamma Spectroscopy Quick Screen Results

SAMPLE ID	MATERIAL	DETECTED RADIONUCLIDES (1)
S12DS01; S12WS04	Brown sandstone material	Elevated natural uranium (^{238}U) progeny: ^{214}Bi (250 pCi/g); ^{214}Pb (249 pCi/g); ^{210}Pb (243 pCi/g) Elevated natural thorium (^{232}Th) progeny: ^{228}Ac (408 pCi/g); ^{212}Bi (258 pCi/g); ^{212}Pb (368 pCi/g); ^{208}Tl (157 pCi/g)
S12DS02; S12WS03	White metal piece	Elevated natural thorium (^{232}Th) progeny: ^{228}Ac (1,080 pCi/g); ^{212}Bi (685 pCi/g); ^{212}Pb (1,120 pCi/g); ^{208}Tl (403 pCi/g)
S12DS03; S12WS02	Clump of mud with paint/metal flakes	Radium (^{226}Ra) progeny: ^{214}Bi (2,080 pCi/g); ^{214}Pb (1,470 pCi/g); ^{210}Pb (1,960 pCi/g)
S12WS01	Smear of excavated component	No radionuclides reported as detected.

(1) Bi = bismuth; Pb = lead; Ac = actinium; Tl = thallium; Ra = radium.

A discussion of the samples with reported detections appears below:

- S12DS01: This sample consisted of the material identified during the initial baseline scanning survey of the surface footprint of Pit C-2. The location was flagged and excavated using shovels - the source material was found approximately six inches below the ground surface. Measurements returned to background levels following its removal.

  Based on the detection of radionuclides associated with both the naturally-occurring uranium and thorium decay series, the material is assumed to be unprocessed. One historical mission of SEDA was the storage of valuable ores, including pitchblende ore (in SEAD-48) and columbite ore. With the rock's location in the surface soil it is unlikely it was intentionally placed in the area for burial. No additional similar material was found over the course of the excavation and/or screening process.

- S12DS02: This sample was collected from the vicinity several items that had a large white-colored light metal sleeve with above-background radiation levels, and appears to be the same type of material. The results indicate the presence of natural thorium (Thorium-232 [^{232}Th]) progeny. The items themselves were not identified, but thorium alloys with aluminum, magnesium, and other light metals are common in aircraft parts and other components that must maintain structural integrity in high temperatures.

- S12DS03: This sample consisted of a clump of clay with small pieces of metal or paint, apparently from a damaged radium dial or gauge. The detection of three progeny of ^{226}Ra without detections of uranium decay series progeny above ^{226}Ra, such as Thorium-234 (^{234}Th) confirm the presence of radium.

To further assist in identification of the radionuclides present in components or debris, a Canberra Inspector 1000 portable multi-channel analyzer (MCA) was brought onsite. The Inspector 1000 system consisted of a Lanthanum Bromide detector to allow for quick identification of detected gamma energies. Measurements were conducted on excavated debris using the manufacturer's recommendations. A Cesium-137 (^{137}Cs) source was used during the measurement to provide a reference energy (662 kiloelectron Volt [keV]) to determine potential spectral shift due to temperature or other fluctuations in operating parameters.

1.3 Radiological Contaminants of Concern

Based on the field gamma spectroscopy results as well as the onsite screening with the MCA, the primary RCOCs for this project were determined to be ^{226}Ra and ^{232}Th with progeny in equilibrium assumed. A more detailed description of the determination of the RCOCs is provided in Section 4.3.

1.4 Objectives

USACE desires to decommission this site so it can be reused for other purposes without restrictions. In order to accomplish this, the confirmation survey data were compiled, combined with existing soil, groundwater, surface water, and sediment radiological data available from prior site studies, and these data were included as inputs to a residual dose and risk assessment. This dose and risk assessment was performed to confirm the following:

1) The level of residual radioactivity distinguishable from background at this site would result in a total effective dose equivalent to an average member of the critical group of 10 millirem per year (mrem/yr) or less as per NYSDEC standards (NYSDEC, 1993); and

2) The level of residual radioactivity represents an excess lifetime risk of cancer, at a point of exposure, to an average individual no greater than between 10^{-4} and 10^{-6}.

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2.0 RADIOLOGICAL REMEDIAL SUPPORT SURVEYS

2.1 Equipment Release Survey Methodology

Fixed and removable activity surveys were performed on equipment before it was demobilized from the site. The alpha-beta counting instrumentation used to perform equipment release surveys during the SEAD-12 project is summarized in Table 2-1.

Table 2-1. Survey Instrumentation

INSTRUMENT	DETECTOR AREA	ALPHA EFFICIENCY	BETA EFFICIENCY
Ludlum 43-10-1/ 2929	100 cm^2 smear	0.3652	0.1814
Ludlum 43-89/ Ludlum	126 cm^2	0.1608	0.0664

In addition, equipment was qualitatively checked by scanning with a Ludlum 44-9 Geiger-Mueller (GM) pancake-type probe.

Each smear was collected over approximately 100 square centimeters (cm^2) of surface area and counted using a Ludlum Model 2929 alpha-beta smear counter. Surface contamination limits are listed in Table 2-2. One-minute direct static counts were collected on the pieces of machinery using a Ludlum Model 2224-1 scaler/rate meter with Ludlum Model 43-89 alpha/beta scintillator.

The release criteria from US Nuclear Regulatory Commission (NRC) Regulatory Guide 1.86 (NRC 1974) were used for evaluating fixed and removable activity levels. The acceptable contamination limits are summarized in Table 2-2. All equipment survey measurements were less than the contamination limits in Table 2-2.

Table 2-2. Acceptable Levels of Surface Contamination

RADIONUCLIDE[1]	ACCEPTABLE SURFACE CONTAMINATION LEVELS (dpm/100 cm^2)		
	REMOVABLE[2][5]	AVERAGE[2][3]	**MAXIMUM**[2][4]
Transuranics, ^{226}Ra, ^{227}Ra, ^{230}Th, ^{228}Th, ^{231}Pa, ^{221}Ac, ^{125}I, ^{129}I	20	100	300
Th-Natural, ^{232}Th, ^{90}Sr, ^{223}Ra, ^{224}Ra, ^{232}U, ^{126}I, ^{131}I, ^{133}I	200	1,000	3,000
U-Natural, ^{235}U, ^{238}U, and associated decay products	1,000 α	5,000 α	15,000 α
Beta-Gamma emitters (radionuclides with decay modes other than alpha emission or spontaneous fission) except ^{90}Sr and others noted above.	1,000 β γ	5,000 β γ	15,000 β γ

(1) Where surface contamination by both alpha- and beta-gamma emitting nuclides exists, the limits established for alpha- and beta-gamma emitting nuclides should apply independently.

(2) As used in this table, disintegrations per minute (dpm) means the rate of emission by radioactive material as determined by correcting the counts per minute observed by an appropriate detector for background, efficiency, and geometric factors associated with the instrumentation.

(3) Measurements of average contaminant should not be averaged over more than 1 square meter. For objects of less surface area, the average should be derived for each object.

(4) The maximum contamination level applies to an area not more than 100 square centimeters (cm^2).

(5) The amount of removable radioactive material per 100 cm^2 of surface area should be determined by wiping that area with dry filter or soft absorbent paper, applying moderate pressure, and assessing the amount of radioactive material on the wipe with an appropriate instrument of known efficiency. When removable contamination on objects of less surface area is determined, the pertinent levels should be reduced proportionately and the entire surface should be wiped.

2.2 Soil Screening Methodology

To accomplish the objective of identifying and removing all discrete radioactive debris in excavated soils, such as luminescent radium dials and small (less than 6 inch) pieces of metal containing or contaminated with ^{226}Ra, ^{232}Th, or ^{238}U, the soil was radiologically scanned on multiple occasions. Two scans were performed manually by the radiological support technician using the audio output from a scintillation detector with a 3 inch by 3 inch sodium iodide crystal activated with thallium (3x3 NaI[Tl]) coupled to a digital rate meter. These scans occurred during the initial excavation and stockpiling of the soil, and as the soil was loaded into the screen plant for physical sizing. If a discrete source was detected by this method, it was removed from the host soil and placed in a secure area for subsequent disposition. A third radiological scan was performed on materials from Pits A, B and C2 by an automated conveyor monitoring system which was mounted over the 6 inch minus soil material exiting the screen plant. By scanning the soil multiple times, it was believed that there was a high probability that all of the discrete radioactive debris had been identified and removed. The purpose of the following is to describe the physical assembly of the automated conveyor monitoring system, its method of calibration, and an estimate of its sensitivity.

2.2.1 Conveyor System Physical Assembly

The automated conveyor monitoring system has been successfully used by CABRERA at several similar sites, specifically the remediation of military base landfills contaminated with depleted uranium. The system employed was a Ludlum Model 4609-3 single channel analyzer coupled to three, independently operated and controlled, 3x3 NaI(Tl) detectors, as shown in Figure 2-1. The three detectors were mounted above the belt, and perpendicular to the direction of belt movement, with a centerline spacing of approximately 6 inches. With the belt loaded with soil, the distance from the top of the soil to the bottom of a detector was approximately 3 to 4 inches. A metal screen was placed across the belt to protect the detectors from any clumps of soil that might otherwise hit the detector and cause false elevated readings. The belt had a width of about 2 ft, and was operated at a speed of approximately 6 ft /second.

When the count rate exceeded a user-defined set point, the automated conveyor monitoring system triggered both a visual and audio alarm. When this occurred, the conveyor operator manually stopped the conveyor, and the suspect soil was manually scanned with a 3x3 NaI(Tl) detector coupled to a digital rate meter for the offending debris. The suspect soil was manually scanned either in the dump truck, or was spread in a thin layer on a polyethylene sheet.

In many cases, the radioactive debris was easily identified and removed for disposition. However, in some instances, no discrete debris was located and it was assumed that the elevated count rate reported by the automated conveyor monitoring system was due to the variation of naturally occurring radionuclides in the soil.

A laptop personal computer (PC) was used to monitor each detector's count rates, input parameters and system alarms. While the system can operate without the PC, use of the PC allowed the system operator to closely observe its performance, and particularly to note the segment count when the system alarmed. As will be discussed, the alarm set points were adjusted to maximize system sensitivity causing the system to false alarm on the natural variation in soil composition. By noting the alarm count, the system operator was able to anticipate whether discrete debris or natural background variation was likely the cause.

2.2.2 System Energy Calibration

The 4609-3 Counter software has a function known as HV Plateau. This function is used to determine the correct operating voltage (or HV) for an individual or group of detectors. The HV Plateau function will take background counts at different HV intervals (set by the user) for each of the three detectors. After the background counts have completed, the software will take source counts on each of the three detectors.

An energy calibration was done by centering the 662 keV peak from a 0.01 uCi ^{137}Cs source into channel 662. This was accomplished by running the HV Plateau function from 500v to 1200v in 25v increments. The lower discriminator was then adjusted to 40, and the upper discriminator was disabled. By unselecting the window mode, the system would be sensitive to all photons with energy above 40 keV.

2.2.3 System Sensitivity

Since a primary calibration source in units of pCi/g was not available, a quantitative distributed or volumetric calibration was not possible. Instead, a qualitative calibration was performed using radioactive debris extracted from the suspect soil. The alarm set points were selected by monitoring the range of count rates reported for each detector over varying types of soil composition, and selecting an alarm set point that was slightly above the normal variation in count rate. The system collected counts in 0.5 second intervals. At a belt speed of 6 ft/second, the linear length of soil being assayed on the belt in any counting interval was therefore about three (3) ft. For soil free of radioactive debris on the belt, the gross count rates per detector over each 0.5 second interval ranged from about 150 to about 250. The alarm set points were set to 290 counts/ 0.5 seconds for the two detectors on the edge of the belt, and to 300 counts /0.5 second for the center detector. This slight difference was to adjust for the more favorable counting geometry of the center detector.

A radium dial and a piece of metal containing thorium which had been extracted from the host soil by one of the scanning processes were used to qualitatively test the reliability and sensitivity of the system. The system was tested multiple times during each day by placing these items on a moving belt loaded with soil and verifying the system would alarm as the items passed beneath each detector. In multiple tests, these items always alarmed the system with 0.5 second counts of between 400 to 600, depending on detector location relative to the item on the belt.

The radium dial had an exposure rate of about 90 microroentgen per hour (µR/h) at 4 inch distance, exclusive of background, and the piece of thorium metal had an exposure rate of 9 µR/h at 4 inch distance, exclusive of background. The background exposure rate was about 7 µR/h, therefore the system was able to reliably alarm at about twice background in this configuration. The counting system was then checked with the radium dial and thorium metal placed on an empty moving belt. In this geometry, the sources were now approximately 7 inches from the detector. In every case, the sources correctly alarmed the system. Finally, the sources were placed on the bottom of the belt, and about 4 inches of soil cover was placed over the sources to attenuate the photon source strength. By this technique, it was believed that the maximum sensitivity of the system was attained using actual debris items collected from the site. Instrument response was reliable over all source configurations.

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3.0 CONFIRMATION SURVEY DESIGN

A confirmation survey was planned and conducted for each of the burial pits (Pits A/B, C-1, and C-2) associated with impacted outdoor soil areas. The survey was prepared in accordance with the *Radiological FSP* (Parsons, 2009) and the *Summary of Field Activities* (CABRERA, 2009) which is included in Attachment A of this report. The survey was established with the guidance presented in MARSSIM and following the data quality objective (DQO) process in order to ensure all impacted areas were surveyed with the necessary rigor that corresponds with the contamination potential. The DQO process includes the following seven steps:

Step 1: State the problem

Step 2: Identify the decisions

Step 3: Identify inputs to the decisions

Step 4: Define the study boundaries

Step 5: Develop a decision rule

Step 6: Specify the decisions

Step 7: Optimize the survey design

The following sections provide the design of the confirmation survey including survey planning parameters, instrumentation, measurement and sampling procedures, and the data quality assessments that were implemented.

3.1 Site Release Criteria

As described in Section 1.4 of this report, the release criteria for the SEDA site are as follows:

1) The level of residual radioactivity distinguishable from background at this site results in a total effective dose equivalent to an average member of the critical group of less than 10 mrem/yr as per NYSDEC standards (NYSDEC, 1993); and

2) The level of residual radioactivity which represents an excess lifetime risk, at a point of exposure to an average individual is no greater than between 10^{-4} and 10^{-6}.

The NRC applies a TEDE standard of 25 mrem/yr; the USEPA recommends a TEDE standard of 15 mrem/yr; for this site, a TEDE of 10 mrem/yr (a more restrictive criterion) based on the Technical and Administrative Guidance Memorandum (TAGM) 4003 guide was selected (NYSDEC, 1993).

Levels of residual radioactivity that correspond to the allowable radiation dose are calculated by analysis of various scenarios and pathways through which exposures could be reasonably expected to occur. The *Summary of Field Activities* (CABRERA, 2009) specified derived concentration guideline levels, or DCGLs, which are the concentration of residual radioactivity distinguishable from background that, if uniformly distributed throughout a survey unit, would result in a TEDE to an average member of a critical group equivalent to the allowable dose. These wide-area DCGLs were developed by Argonne National Laboratory (ANL) for use during the license termination effort at SEDA in 2003. These dose-based criteria did not properly account for the residual risk due to residual radioactivity above background at the site. Therefore, for the purposes of satisfying both dose- and risk-based criteria, the data from this survey of the final surfaces of the pits was included as the source term in site-specific dose and risk assessment using the computer code developed by ANL, *Residual Radioactivity (RESRAD), Version 6.5*.

3.2 Identification of Impacted Areas

Three impacted areas were identified during confirmation surveys (Pits A/B, Pit C-1, and C-2). Confirmation surveys of the final surfaces of these pits were based on MARSSIM guidance. Each pit was evaluated as a Class 1 survey unit [SU] in a fashion similar to a standard MARSSIM final status survey, except for a few key differences, which are described in Section 3.5. Burial pit sizes are provided in Table 3-1.

Table 3-1. Land Area Survey Units

IMPACTED OUTDOOR AREAS	IMPACTED AREA SIZE (SQUARE METERS)	MARSSIM RECOMMENDED CLASS 1 SURVEY UNIT LIMITS (SQUARE METERS)
Pit A/B	564	Up to 2,000
Pit C-1 (North Section)	1,341	
Pit C-2 (South Section)	1,562	

3.3 Background Reference Area

Background concentrations of ^{226}Ra and ^{232}Th and other naturally-occurring radionuclides were determined using the surface and subsurface data set from the SEAD-63 project conducted in 2004 (Plexus, 2005). Burial pits were excavated at SEAD-63 with health physics support in a similar fashion to SEAD-12. Unlike SEAD-12, however, no radioactive items were discovered during the SEAD-63 excavation support. Gamma spectroscopy data for ^{228}Ac, ^{214}Bi, Potassium-40 (^{40}K), and ^{234}Th, as well as gross alpha and beta results, were evaluated for statistical outliers and no anomalous data were identified. Therefore, the soils at SEAD-63 were considered to be unimpacted from a radiological perspective and soil sample data from the remediation was used as a background data set. The summary statistics of the evaluated radionuclides are presented in Table 3-2. These values were used to calculate the number of sampling locations as described in Section 3.5.

Table 3-2. SEAD-12 Soil Background Concentrations

RADIONUCLIDE	NUMBER OF MEASUREMENTS	AVERAGE (pCi/g)(1)	STANDARD DEVIATION (pCi/g)	MINIMUM (pCi/g)	MAXIMUM (pCi/g)
^{214}Bi (^{226}Ra)	35	0.6	0.1	0.0	0.8
^{228}Ac (^{232}Th)	35	1.0	0.2	0.0	1.3
^{40}K	35	25.1	2.1	21.0	29.4
^{234}Th	35	1.0	0.4	0.4	2.1
Gross Alpha	35	11.0	2.5	6.2	20.9
Gross Beta	35	26.5	4.9	12.5	42.6

(1) pCi/g = picocuries per gram.

3.4 Reference System

A reference coordinate system was utilized for confirmation survey measurements and sampling locations. Soil sample locations were referenced to global positioning system (GPS) coordinates (Central New York Planar) obtained using hand-held GPS units.

3.5 Survey Design

The MARSSIM guidelines for sampling design for a FSS were followed in determining the appropriate number of samples to be collected. The initial step is the determination of the relative shift using the following equation:

$$\text{Relative Shift} = \frac{\Delta}{\sigma} = \frac{DCGLw - LBGR}{\sigma}$$

Using the background data for ^{214}Bi and ^{228}Ac shown in Table 3-2, a combined σ was calculated to be 0.16 pCi/g. Using the sum of ratios and unity rule, the $DCGL_W$ is unity, and the lower bound of the grey region is set to 0.5 as a default value. A relative shift of 3.1 results, and from that relative shift, the random measurement probability (P_r) is determined to be 0.983039 from MARSSIM Table 5.2.

The following equation (MARSSIM Equation 5-1) was then used to determine the total number of samples in the survey unit/reference area pair:

$$N = \frac{\left(Z_{1-\alpha} + Z_{1-\beta}\right)^2}{3\left(P_r - 0.5\right)^2}$$

The terms $Z_{1-\alpha}$ and $Z_{1-\beta}$ both reflect the desired Type I and II error rates, both set at 0.05. The total number of samples was then divided by two and increased by a factor of 20%, per MARSSIM recommendations. The overall number of samples required per survey unit was calculated to be 10 samples.

The appropriate number of systematic samples within the pits was calculated to be 10 per 2000 square meters (m^2) Class 1 survey unit, or approximately 1.1 per 2500 square feet (ft^2). This frequency was met by utilizing the sampling points from the chemical sampling activity, which were collected at a frequency of at least 1 sample per 2500 ft^2 from the excavation floor and sidewalls. A grid of the pit areas consisting of 50 ft X 50 ft squares was established prior to the excavation activities and was used to guide sampling frequency. The grid is shown in Figure 3-1. A sample was also collected every 50 linear feet along the perimeter of each of the pits to ensure that area immediately surrounding each of the burial pits was not impacted by remedial activities.

Because of the nature of this remediation, these samples were co-located with chemical sampling locations on the basis of a square sampling grid in accordance with the *Radiological FSP* (Parsons, 2009) and the *Summary of Field Activities* (CABRERA, 2009). While the sample density was calculated in accordance with MARSSIM guidelines, the sample locations were not pre-selected based on a systematic triangular grid as is advised in MARSSIM. Biased samples were collected based on gamma walkover survey (GWS) results as is described in Section 3.6.1.

3.6 Integrated Survey Strategy

Confirmation surveys of open land areas consisted of performing GWS to identify locations of residual contamination and collecting soil samples to be analyzed for the project RCOCs. Additional biased measurements and samples were obtained, as necessary, from locations where scans indicated the potential for residual contamination.

GWS was performed using a Ludlum Model 44-20 three inch by three inch sodium iodide (3x3 NaI) detector coupled to a Ludlum Model 2221 ratemeter. This detector was linked to a GPS receiver/datalogger so that activity measurements could be spatially referenced. Scanning was performed in accordance with MARSSIM protocol by walking straight parallel lines with the detector approximately 10 centimeters (cm) above the ground surface. Survey passes were approximately 0.5 m apart and the scan rate was approximately 0.5 m per second.

Data collected during surface gamma scans in the burial pits was recorded every second along with corresponding easting and northing GPS coordinates. The measurements were plotted and color-coded for visual review and evaluation with the coordinates of the highest measurement identified for possible biased sampling. The average and standard deviation were calculated for each SU to allow evaluation of the data outliers via Z-score. Z-scores represent the number of standard deviations the result lies from the mean, based on following formula:

$$Z - score = \frac{CountRate - Mean}{StdDeviation}$$

All areas exceeding three standard deviations above the average (i.e., Z-score greater than or equal to 3.0), were flagged for further investigation. A biased sample was collected at the location with the maximum Z-score in each burial pit.

Surface soil samples were also collected from burial pit surfaces at locations co-located with chemical sampling locations on a square sampling grid as described in Section 3.5. Following collection, soil samples were maintained under formal chain-of-custody procedures, sent to the offsite laboratory, and analyzed by gamma spectroscopy, with analytical results reported in units of pCi/g. At least 11 samples were collected in each SU.

3.7 Gross Alpha/Beta Concentrations

All samples analyses included gross alpha and gross beta concentrations. Average gross alpha and gross beta concentrations from survey groups are compared with average background concentrations in Table 3-3. Elevated gross alpha or beta concentrations not corresponding with elevated RCOC concentrations could indicate the presence of previously unidentified radionuclides. No SEAD-12 sample group average for gross alpha or gross beta was elevated more than one standard deviation above background values.

Table 3-3. Gross Alpha and Gross Beta Averages

SAMPLE GROUP	NUMBER OF MEASUREMENTS	AVERAGE GROSS ALPHA (pCi/g)	AVERAGE GROSS BETA (pCi/g)
Background	35	11.0	26.5
Overburden	10	10.8	25.1
Disposal	13	13.0	27.3
Pit A	15	10.3	21.5
Pit B	11	10.7	28.6
Pit C-1	22	10.1	22.9
Pit C-2	42	11.0	30.6

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4.0 INSTRUMENTATION AND CALIBRATION

4.1 Confirmation Survey Field Instrumentation

Gamma scans were performed in Class 1 land area SUs with a Ludlum Model 44-20 3x3 NaI detector coupled to a Ludlum Model 2221. The 3x3 NaI detector scan MDC for natural thorium is 1.1 pCi/g and the scan MDC for natural radium is 1.5 pCi/g. The scan MDC calculations for each detector are provided in Attachment B.

4.2 Radiological Screening Instrumentation

Radiological screening instrumentation is described in detail in Section 2.0.

4.3 Off-Site Laboratory Instrumentation

FSS soil samples were prepared, submitted, and analyzed at GEL Laboratory LLC in Charleston, South Carolina. Soil samples were analyzed by gamma spectroscopy, allowing for 7 day ingrowth for progeny, and results reported in units of pCi/g. In the approved technical memorandum *Summary of Field Activities* (CABRERA, 2009), ^{226}Ra was to be measured indirectly by the 609 keV gamma emission of its progeny Bismuth-214 (^{214}Bi) with an assumption of 50% equilibrium in soil of the Radon-222 (^{222}Rn) daughter products (due to losses resulting from radon gas emanation) at the time of sealing of the sample. This method was included in the plan after receiving feedback from commercial radiochemistry laboratories that 50% or more of ^{222}Rn daughter products are retained at the time of sealing in soils, especially those soils containing ^{226}Ra contamination in the form of paint chips and small pieces of debris. As a conservative measure in the evaluation of the radiological soil sample data, only 25% equilibrium of ^{222}Rn daughter products was assumed at the time of sealing, and the mean of the ^{214}Bi results and the Lead-214 (^{214}Pb) results was calculated and reported as the ^{226}Ra result. Detailed explanation of derived sample concentration results are presented in footnotes to the Confirmation Survey result tables in Attachment C.

^{232}Th was measured by surrogate analysis of photon emissions from Actinium-228 (^{228}Ac); the second daughter progeny of ^{232}Th under an assumption of secular equilibrium.

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5.0 REMEDIAL SUPPORT SURVEY RESULTS

Release surveys were performed as described in Section 2.1. The release surveys performed are summarized on Table 5-1.

Table 5-1. Summary of Equipment Release Survey Results

SURVEY ID	DESCRIPTION	DATE	RANGE OF ACTIVITY MEASUREMENTS		
				FIXED (dpm/100cm^2)	REMOVABLE (dpm/100cm^2)
002	Dump Truck 38495JY	07/21/09	Alpha Beta	0 to 19.7 -741 to -215	0 to 2.7 -41 to 36
003	Flatbed Trailer	07/21/09	Alpha Beta	0 to 14.8 -873 to -586	0 to 2.7 -44 to 22
004	Bulldozer #7106	07/22/09	Alpha Beta	-4.9 to 9.9 -514 to 0	-1.4 to 2.7 -44 to 63
005	Fork Lift MHT00221	07/22/09	Alpha Beta	-4.9 to 29.6 -430 to 311	-1.4 to 1.4 -58 to 17
006	Rolloff # 21	08/03/09	Alpha Beta	N/A; Measurements with GM (44-9) at background levels	N/A
007	M60 Conveyor Belt 18-12-037	08/04/09	Alpha Beta	-9.9 to 14.8 -992 to -263	0 to 4.1 -19 to 47
008	Articulated Dump Truck 006	08/06/09	Alpha Beta	-4.9 to 9.9 -1076 to -227	-1.4 to 2.7 -187 to 72
009	Articulated Dump Truck 007	08/06/09	Alpha Beta	-4.9 to 9.9 -1016 to -251	-1.4 to 1.4 -52 to 47
010	Chieftain 1400 66-03-421	08/10/09	Alpha Beta	-4.9 to 29.6 -1124 to 311	-1.4 to 1.4 -94 to 28
011	Bulldozer #3247	08/11/09	Alpha Beta	0 to 19.7 -861 to 0	0 to 1.4 -47 to 41
012	Front Loader CPT30682	08/11/09	Alpha Beta	4.9 to 14.8 -777 to -382	0 to 2.7 -30 to 41
013	Gas Truck 83-5191	08/11/09	Alpha Beta	-4.9 to 9.9 -1040 to 394	0 to 4.1 -25 to 63
014	Excavator M1-325F	08/11/09	Alpha Beta	-4.9 to 4.9 -1398 to 263	0 to 4.1 -28 to 47
018	Front Loader CPT30682	08/13/09	Alpha Beta	0 to 14.8 -227 to 347	-1.4 to 0 -58 to -3
019	Skid Steer CYC289	08/13/09	Alpha Beta	4.9 to 19.7 -60 to 359	0 to 1.4 -105 to -6

In addition, scans with the 44-9 were at background levels when performed.

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6.0 CONFIRMATION SURVEY RESULTS

A summary of the confirmation survey results are presented below. Complete analytical data are provided in Attachment C.

The impacted areas of SEAD-12 consist of Pits A/B and Pits C-1 and C-2. Pit C-1 and C-2 results were combined into one data set (Pit C) to maintain consistency with the Risk Assessment that was performed at SEAD-12 in 2000. Ten samples were collected from clean overburden material overlying the actual burial pit locations. These clean overburden soils/fill were excavated from the top 2.5 feet at Pit A and B, the top 0.5 feet at Pit C Area 1 north, and the top 3 feet at Pit C Area 2 south and set aside for temporary staging (Parsons, 2009). Because these soils were intermixed during the backfill and restoration and used to backfill Pit A/B, the overburden sample results were added to the Pit A/B evaluation to represent the current condition of the backfilled pit.

Confirmation survey soil sample data from 2009 was combined with previous SEAD-12 radiological sample data from the original baseline risk assessment (BRA) to develop an updated risk/dose model for the site. A detailed description of this assessment is provided in Section 7.0. Analytical data the BRA are included in Attachment C.

Systematic soil sample summary results for the pit surveys are provided in Table 6-1. Biased soil sample summary results for the pit surveys are provided in Table 6-2.

Table 6-1. Burial Pit Systematic Sample Results Summary

^{232}TH SUMMARY						
SURFACE SOIL (0-15 CM) CONCENTRATION						
Impacted Area	Number of Samples Collected	Mean (pCi/g)	Median (pCi/g)	Standard Deviation (pCi/g)	Minimum (pCi/g)	Maximum (pCi/g)
Pits A/B[1]	32	0.76	0.86	0.36	0.00	1.32
Pits C-1/C-2	50	0.79	0.83	0.34	0.00	1.70
^{226}RA SUMMARY						
SURFACE SOIL (0-15 CM) CONCENTRATION						
Impacted Area	Number of Samples Collected	Mean (pCi/g)	Median (pCi/g)	Standard Deviation (pCi/g)	Minimum (pCi/g)	Maximum (pCi/g)
Pits A/B[1]	32	1.16	1.09	0.36	0.73	2.64
Pits C-1/C-2	50	0.98	0.95	0.20	0.69	1.69

Notes: (1) Sample statistics include overburden soil sample results

Table 6-2. Burial Pit Biased Sample Results Summary

^{232}TH SUMMARY						
SURFACE SOIL (0-15 CM) CONCENTRATION						
Impacted Area	Number of Samples Collected	Mean (pCi/g)	Median (pCi/g)	Standard Deviation (pCi/g)	Minimum (pCi/g)	Maximum (pCi/g)
Pits A/B[1]	3	0.97	0.96	0.16	0.81	1.13
Pits C-1/C-2[2]	2	1.12	1.12	0.11	1.04	1.20
^{226}RA SUMMARY						
SURFACE SOIL (0-15 CM) CONCENTRATION						
Impacted Area	Number of Samples Collected	Mean (pCi/g)	Median (pCi/g)	Standard Deviation (pCi/g)	Minimum (pCi/g)	Maximum (pCi/g)
Pits A/B[1]	3	1.01	1.08	0.14	0.85	1.09
Pits C-1/C-2[2]	2	1.07	1.07	0.18	0.94	1.19

Notes: (1) Three biased samples were collected
(2) Two biased samples were collected

Additional discussion of sampling results and statistical tests for each burial pit area in SEAD-12 is provided in the following sections. Soil sample analytical for each of the areas are provided in Attachment C.

Pit A/B

Confirmation survey activities in SEAD-12 Pit A/B included a GWS and collection of 22 systematic surface soil samples. Pit A/B is 564 m^2 in area. Three biased soil samples were collected based on the results of the GWS. Biased sample S12EXSW-N-10-01 was collected at the location of highest gamma activity along the northeast sidewall of Pit A. The GWS is displayed in Figure 6-1. Systematic and biased sample locations are displayed in Figure 6-2.

Pit C

Confirmation survey activities in SEAD-12 Pit C (consisting of Pits C-1 and C-2) included a GWS and collection of 50 systematic surface soil samples. Pit C is 2,903 m^2 in area. Additional biased soil sampling was performed based on the results of the GWS. Biased sample S12EXSW-N-10-01 was collected at the location of highest gamma activity along the southwest sidewall of Pit C-1. Biased sample S12EXSW-E-1-01 was collected at the location of highest gamma activity on the excavation sidewall of Pit C-1. Biased sample S12EXFL-K-3-01 was collected at the location of highest gamma activity on the excavation floor of Pit C-2. GWS results for pits C-1 and C-2 are displayed in Figures 6-3 and 6-5, respectively. Systematic and biased sample locations for pits C-1 and C-2 are displayed in Figures 6-4 and 6-6, respectively.

7.0 DOSE AND RISK ASSESSMENT FOR SEAD-12

Conservative site-specific human health residual dose and risk assessments were performed for the disposal pits A/B and Pit C, located in the Former Weapons Storage Area (SEAD-12) to confirm that the site had been protectively remediated and to verify that the selected remedy had met the response action objectives regarding dose and risk criteria so that the site could be released for use without any radiological restriction. In TAGM Number 4003, the State of NY established a dose criterion of 10 mrem/yr above background to the maximally exposed individual of the general public (NYSDEC, 1993). CERCLA established acceptable target risk range as the risk criteria for the Site. The USEPA defines the CERCLA target risk range as 10^{-6} to 10^{-4} where "the upper boundary of the risk range is not a discrete line at 1×10^{-4}…. A specific risk estimate around 1×10^{-4} may be considered acceptable if justified based on site-specific conditions." (USEPA, 1997).

Confirmation survey results from Pits A/B and C, documented in Section 6.0 of this report, were included as inputs into the dose/risk model. The remaining soil data included in the model were sample results from the BRA that was previously performed for SEAD-12 (Parsons, 2002). Only those soil sample results from the BRA that were determined to represent soils still on site (i.e. were not excavated during the 2009 removal action) were included in the most recent dose/risk assessment. These data are included in Attachment C of this report. These soil sample locations for Pits A/B and C are also displayed in Figures 7-1 and 7-2, respectively. Groundwater, surface water, and sediment sample data from the BRA was reevaluated, if necessary, and included as inputs into the dose/risk model.

During the RI and previous investigations, samples of soil, groundwater, surface water, and sediment were collected. Soil samples were collected from random surface soil locations, biased surface soil locations where contaminants were likely to accumulate, and soil borings and test pit locations. Groundwater samples were collected from groundwater monitoring wells situated throughout the greater SEAD-12 site. Surface water and sediment samples were collected from the drainage ditches throughout SEAD-12. During the Confirmation Survey in 2009, soil samples were collected from the final surfaces of the excavations (including excavation floors, walls, and perimeter benches) and from overburden soils that were used to backfill the Pit A/B excavation.

7.1 Dose and Risk Assessment Methodologies

The dose and risk assessment methodology for radiological constituents is presented in the following subsections of this report:

- Section 7.1.1 provides criteria that were used to evaluate and screen Site data and to determine the radionuclides of potential concern (ROPCs) for each disposal pit;
- Section 7.1.2 defines land use assumptions, receptors, and exposure scenarios used in the assessment;
- Section 7.1.3 presents the guidance that were used to perform the toxicity assessment;

- Section 7.1.4 presents the risk characterization as well as the results of the dose and risk assessments; and

- Section 7.1.5 evaluates the uncertainties associated with the assessments.

7.1.1 Identification of ROPCs

The RI report provides data on the nature and extent of site constituents at the site. These site constituents were designated based on the operational history of each area, including the chemicals and radionuclides known or suspected to have been used at each specific area. In this section of the report, the methodology to select ROPCs is presented. ROPCs differ from site constituents in that the ROPCs are the constituents that have been detected at the site that have gone through an extensive screening process and were then retained for quantitative analysis in the assessment. Four different types of screenings were performed to identify ROPCs for the site. The following sections summarize the screening processes.

(A) Data Reduction

For radiological constituents, any daughter product with a half-life of less than 180 days was not evaluated during this assessment. A six-month cutoff half-life was selected in the radiological dose and risk model. The risk model assumes that these decays products (daughters) are in secular equilibrium with respect to the parent radionuclide. Therefore, their contributions are already incorporated in the dose conversion factor (DCF) and risk coefficients of the parent. Due to this,

- ^{228}Ac (half-life = 6 hr), daughter product of ^{228}Ra, will be evaluated as ^{228}Ra.

- ^{214}Pb (half-life = 27 minutes) and ^{214}Bi (half-life = 20 minutes), daughters of ^{226} Ra, will not be inputted as separate source terms in the model.

- Lead-212 ([^{212}Pb] half-life = 11 hours), Bismuth-212 [^{212}Bi] (half-life = 61 minutes), and Thallium-208 [^{208}Tl] (half-life = 3 minutes), daughters of Thorium-228 (^{228}Th) will not be inputted as a separate source term in the model.

- Thorium-227 ([^{227}Th] half-life = 19 days), ^{223}Ra (half-life = 11 days) and Lead-211 ([^{211}Pb] half-life = 36 min) are daughter products of Actinium-227 (^{227}Ac). All of them will not be inputted as separate source terms in the model.

- ^{234}Th (half-life = 24 days), daughter product of Uranium-238 (^{238}U), will not be inputted as a separate source term.

- The half-life of ^{210}Pb is 22.3 years. After a thorough analysis of the data, of the 20 of 42 samples where ^{210}Pb was detected, the uncertainty associated with those results were usually 75-100% of the result. In the 22 of the 42 samples where ^{210}Pb was not detected, the results averaged 18.42 pCi/g. In these same results, the ^{226}Ra values averaged 1.62 pCi/g. Since ^{226}Ra decays directly to ^{210}Pb, the results would be expected to be much closer to a 1:1 ratio in soils. Gamma spectroscopy does not provide accurate results for ^{210}Pb in soils due to the difficulty in detecting its low energy (49 kev) gamma photon when it decays. The more common and accurate method to analyze for ^{210} Pb is alpha spectroscopy for polonium-210 (^{210}Po), which is a daughter product of ^{210}Pb. Given these reasons, ^{210}Pb sampling results were not used to determine the EPC for ^{210}Pb. The EPC for ^{210}Pb was set equal to that for ^{226}Ra during the dose and risk evaluation for the disposal pits.

(B) Weight-of-Evidence Screening

The weight-of-evidence screening was performed for all radiological constituents that passed the data reduction screening. If the frequency of detection for a chemical in a medium is 5% or less (i.e., a minimum of one detection out of 20 analytical results), generally, the chemical is excluded from further evaluation. This rationale is consistent with USEPA's *RAGS* guidance (USEPA, 1989). Under this screening, radiological constituents that were detected in less than five percent of the samples from a given medium may be artifacts in the data due to sampling, analytical, or other problems, and may not be related to site activities. These constituents were not included in the assessment.

(C) Background Screening

The background screening was performed for all radiological constituents that passed the first two screenings. This screening consisted of comparing the maximum detected concentration against background sample criteria. Background samples were collected during the BRA, and these results are included in Attachment C. If the maximum detected concentration was below background criteria, the site constituent was not considered for risk screening. However, if the site constituent was present at concentrations above background criteria, that site constituent was retained for risk screening.

(D) Risk-Based Screening

Risk-based screening for radionuclides present in soil cannot be performed as there is no soil screening values for radionuclides available in the guidance documents supplied by NYSDEC and USEPA. However, risk-based screening was performed for radiological constituents that are present in the groundwater and surface water. Under the risk screening, the maximum detected concentration of the radionuclide was compared against their corresponding USEPA maximum contaminant level (MCL). Any radionuclide that exceeded the MCL was retained as a ROPC for the Site.

Tables D-1, D-2, D-3, D-4, D-5, D-6, D-7, D-8, and D-9 of Attachment D present the screening process and identify the ROPCs for Disposal Pit A/B surface soil, Disposal Pit A/B surface and subsurface soil, Disposal Pit C surface soil, Disposal Pit C surface and subsurface soil, ground water, onsite surface water, downgradient surface water, onsite sediment and downgradient sediment, respectively.

7.1.2 Exposure Assessment

This section describes the receptors and exposure pathways that were evaluated in the risk assessment. The objectives of the exposure assessment were to estimate the magnitude, frequency, duration and routes of potential human exposures to ROPCs at the Site. Potential receptor groups are identified in the exposure assessment and estimates of exposure or radionuclide intake are calculated based on assumptions regarding exposure pathways and exposure parameters. The following sections of the report summarize the exposure assessment process utilized during this risk assessment.

(A) Current and Future Land Use Scenarios

In July 1995, the Base Realignment and Closure Act (BRAC) Commission voted to recommend closure of SEDA. As part of the BRAC process, a Land Redevelopment Authority produced a Land Reuse Plan. The plan designated various uses for different parcels of SEDA ranging from conservation/recreation to institutional, industrial, and residential. The area which contains SEAD-12 was designated “Conservation/Recreation Area”. In 2005, the Seneca County Industrial Development Agency redesignated land in the greater SEAD-12 area to be used for either conservation/recreational or for institutional/training purposes.

General access to the greater SEAD-12 continues to be restricted by high security fencing, which is maintained by the Army and by a private tenant. Since the redesignation of the land, the SCIDA has leased a portion of the overall SEAD-12 site to the Finger Lakes Communications Group Inc, who currently has established commercial operations in buildings that are located in the northern portion of the site, west northwest of the Disposal Pit excavation sites. For this human health assessment the future land use of SEAD-12 was considered to be conservation and recreation, which are more conservative or restrictive than the current commercial use. Furthermore, as an additional conservative approach, a future residential farmer scenario was also considered to satisfy the State of New York's requirement for evaluation of the site to pre-disposal conditions and the USEPA’s assessment of whether the site is suitable for unrestricted use and unlimited exposures.

(B) Exposure Scenario

An exposure pathway is the physical course a contaminant takes from the source to the exposed receptor. The sources evaluated in this assessment include soil, groundwater, surface water, and sediments.

For radiological constituents, external gamma is an important pathway of exposure and therefore, it was quantified in this evaluation. This pathway is not applicable for chemical constituents.

Humans routinely ingest small amounts of soil or soil-like materials each day primarily as a result of hand-to-mouth activity. As a rule, young children ingest greater quantities of such material than do older children and adults. Soil ingestion is frequently an important pathway of exposure and therefore, was quantified in this evaluation.

Dermal contact is also a likely route of exposure to chemicals in environmental media. Dermal contact with soils could result in the absorption of chemicals through the skin, therefore, dermal absorption of chemicals is usually evaluated for chemicals. However, radiological constituents are typically metals and do not easily pass through the skin. Therefore, dermal contact pathway was not be evaluated for radionuclides.

Inhalation exposure may result from inhaling chemicals which have volatilized, as well as radiological contaminated soil particles. These particles can be emitted into the air either by wind erosion or as a result of mechanical disturbance. The inhalation of radionuclides in soils was evaluated in this human health risk assessment (HHRA).

The groundwater beneath the SEAD-12 is not currently used as a drinking water source for current site workers and there is no current on-site use of groundwater as a potable water source. Additionally, it is unlikely that a groundwater well would be installed for use by future construction workers. Therefore, ingestion of groundwater is not considered a completed pathway for each of these scenarios. For other future receptors, the future plan for all areas of SEDA is to obtain potable water from the existing water supply line. Potable water is supplied to the Depot from a water supply line that passes through the Town of Varick. Water from the town of Varick is obtained from the water treatment plant at the Town of Waterloo. The source of this water is Lake Seneca. It is unlikely that groundwater wells would be installed for future drinking water use since a potable water pipeline exists. The shallow groundwater aquifer at the site is inadequate for both yield and quality. Nonetheless, since this use is not prevented via an institutional control such as a deed restriction, it was assumed that wells would be installed on site for potable water. Therefore, this is considered a complete pathway and data from the on-site wells are used to calculate exposure concentrations. Exposure via ingestion of groundwater was assessed for a future outdoor park worker, a future recreational visitor, and a future residential farmer.

Exposure to surface water and sediment while swimming on-site were considered to be unrealistic pathways of exposure because the depth of drainage ditches is at most only a few inches. As a conservative approach, accidental ingestion of surface water and sediment was considered for only onsite residential receptor scenario. However, exposure to surface water and sediment while wading were evaluated for a downstream receptor in Reeder Creek.

The radon pathway was not included during this evaluation. Radon is a radioactive noble gas that tends to accumulate in enclosed structures. In a Federal Register Notice (NRC, 1994) issued as a result of comments received from a radon workshop, the NRC noted that "radon would not be evaluated when developing release criteria due to: the ubiquitous nature of radon in the general environment, the large uncertainties in the models used to predict radon concentrations; and the inability to distinguish between naturally occurring radon and that which occurs due to licensed activities." It is notable that radon limits are based on concentration and not risk or dose. This difference is due partly to the fact that background radon concentrations are highly variable and can produce risk estimates well above exposure-based limits.

(C) Current and Future Receptor Scenarios

For purposes of this assessment, six types of potentially exposed populations were considered. Under the current land-use scenario, there is one single exposed population: site workers. Under the future land-use scenario, there are three (3) exposed populations: (1) Park workers; (2) Construction workers who work for a short term onsite; and (3) Recreational visitors, who occasionally visit the property. In addition, two other exposed populations were considered: (1) Residential Farmer (for pre-disposal goal evaluation); and (2) Off-site wader. Each of these receptor scenarios is summarized in the following paragraphs.

1. **Current Site Worker** - Current workers at the site spend their time throughout the entire SEDA. Therefore, the current site worker is assumed to visit SEAD-12 infrequently. During these visits, this worker inhales the ambient air at SEAD-12 and may ingest the surface soil there. Based on professional judgment, it was assumed that the current site worker visits SEAD-12 on 20 days per year for 25 years.

   Exposure pathways evaluated for the site worker scenario include:

   - external gamma radiation from radionuclides in the surface soil;
   - incidental ingestion of surface soil; and
   - inhalation of airborne contaminated dust or volatile emissions from surface soil.

2. **Future Construction Worker** - Future construction workers are assumed to spend one year working at SEAD-12, which is a typical duration for a significant construction project. These workers spend each working day at SEAD-12 (5 days/week for 50 weeks). During this time, this worker inhales the ambient air at SEAD-12 and may ingest or dermally contact the soil there. During the course of daily activities, an on-site construction worker will come into contact with the surface and subsurface soils during intrusive activities and may involuntarily ingest soil.

   Exposure pathways evaluated for the construction worker scenario include:

   - external gamma radiation from radionuclides in the soil;
   - incidental ingestion of soil; and

- inhalation of airborne contaminated dust or volatile emissions from soil.

3. **Future Park Workers** - The park worker is assumed to work onsite for only 8 months (35 weeks per year) from Spring through Autumn, when the conservation area would be used by recreational visitors. The workday (8 hours/day) and exposure duration (25 years) are the same as other workers. The outdoor worker spends nearly all of his/her time outdoors. This worker inhales the ambient air and ingests groundwater and soil.

   Exposure pathways evaluated for the site worker scenario include:

   - external gamma radiation from radionuclides in the surface soil;
   - incidental ingestion of surface soil;
   - inhalation of airborne contaminated dust or volatile emissions from soil; and
   - ingestion of groundwater.

4. **Future Recreational Visitor (Child)** - While both adults and children may visit the conservation area, potential risks would be expected to be higher for children, due to their higher soil ingestion rates and lower body weights. To be conservative, a child recreational visitor receptor is assessed. The recreational visitor is assumed to reside at the conservation area, such as in a campground, for a consecutive two-week period (24 hours/day, 14 days/year) each year for 5 years. During each visit, the child inhales the ambient air and ingests groundwater and soil.

   Exposure pathways evaluated for the future recreational visitor scenario include:

   - external gamma radiation from radionuclides in the soil;
   - incidental ingestion of soil;
   - inhalation of airborne contaminated dust or volatile emissions from soil; and
   - ingestion of groundwater.

5. **Future Residential Farmer** - The residential farmer is assumed to reside continuously at the site for 30 years. The resident is assumed to be a child for a portion of this duration (0 – 6 years of age) and an adult (18 – 42 years of age) for the balance of its exposure. The resident inhales the ambient air, ingests groundwater, and soil. Exposure to surface water and sediment while swimming on-site were considered to be unrealistic pathways of exposure because the depth of drainage ditches is at most only a few inches. Therefore, the resident may ingest surface water and sediment accidentally.

The onsite resident is assumed to spend 1 day every other day during the summer time near the surface water bodies present at the site. The resident is assumed to ingest 0.05 liters/day of water (USEPA, 2011) while being exposed to surface water pathway (incidental ingestion). The resident is also assumed to ingest 12 milligrams (mg) of sediment (10% of soil ingestion rate) while being exposed to contaminated sediment exposure pathway.

Exposure pathways evaluated for the residential scenario include the following:

- external gamma radiation from radionuclides in the soil;
- incidental ingestion of soil;
- inhalation of airborne contaminated dust or volatile emissions from soil;
- ingestion of foods from crops grown in the contaminated soil;
- ingestion of milk from livestock raised in the contaminated area;
- ingestion of fish from a nearby pond contaminated by water percolated through the contaminated area;
- ingestion of meat from livestock raised in the contaminated area;
- incidental ingestion of surface water;
- incidental ingestion of sediment; and
- ingestion of groundwater.

6. **Off-Site Wader** - The off-site wader is assumed to be a child, who periodically wades in Reeder Creek (downgradient from SEAD-12 and SEDA) over a 5-year period. It is assumed that the child visits the creek once per week in the summer (estimated to be 14 weeks). The off-site wader is exposed to surface water and sediment.

Attachment E presents the assigned values for exposure parameters related to each receptor scenario, and the applicable sources where the values were obtained.

(D) Determination of Source Term

Following the collection and validation of the radiological data, subsets of this collected data were utilized to establish the exposure point concentrations (EPCs), or the estimate of the constituent concentration a receptor is likely to come in contact with over the duration of exposure. To calculate a cancer risk, an EPC or an estimate must be made of the chemical concentration in the environmental medium to which an individual may be exposed. As a conservative approach, EPCs for various media were determined by calculating the 95% upper confidence limit (UCL) of the mean following the procedures presented in USEPA's 2002 guidance document, *Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites (OSWER 9285.6-10*) (USEPA, 2002). ProUCL program version 4.0 was utilized during the determination of appropriate UCL. When the percentage of non-detected samples in a data set is high, especially when multiple detection limits might be present, it is very difficult to reliably determine the distribution of the data set. In such situations, it is preferable to use a non-parametric method to determine the 95% UCL. The 95% UCL was used as the EPC, except in cases where the maximum detected value was less than the 95% UCL. In these cases, the maximum detected value was used as the EPC. The EPC was adjusted further by subtracting the background concentration for each radionuclide. The non-zero EPCs for each ROPC present in Disposal Pit A/B surface soil, Disposal Pit A/B surface and subsurface soil, Disposal Pit C surface soil, Disposal Pit C surface and subsurface soil, ground water, onsite surface water, downgradient surface water, onsite sediment and downgradient sediment are presented in Tables 7-1 and 7-2. These tables are also presented in greater detail in Attachment D of this report.

Table 7-1. Exposure Point Concentrations for Soil Radionuclides of Potential Concern

Radionuclides		Detect?	FOD	Concentration		Background Concentration	Dist[a]	UCL_{95}	EPC[b]
Parent	Daughter			Max	Min				
Surface Soil - Disposal Pit A/B (Unit of Concentration is pCi/g)									
Cesium-137	Cesium-137	ND	18/25	0.1	0.1	0.51	X	0.9	0.39
		DT		1.3	0.3				
Thorium-230	Thorium-230	ND	15/25	1.4	0.5	0.87	N	1.14	0.27
		DT		1.4	0.9				
Tritium	Tritium	ND	18/25	0.1	0.1	5.34	G	14.21	8.87
		DT		53.3	0.2				
Surface and Subsurface Soil - Disposal Pit A/B (Unit of Concentration is pCi/g)									
Actinium-227	Radium-223[c]	ND	3/32	0.6	0.3	0.29	X	0.59	0.30
		DT		2.1	0.4				
Cesium-137	Cesium-137	ND	23/32	0.2	0.1	0.51	G	0.63	0.12
		DT		1.3	0.2				
Thorium-230	Thorium-230	ND	18/32	1.4	0.5	0.87	N	1.08	0.21
		DT		1.4	0.6				
Tritium	Tritium	ND	18/32	0.1	0.1	5.34	X	25.43	20.09
		DT		53.3	0.2				
Surface Soil - Disposal Pit C (Unit of Concentration is pCi/g)									
Cesium-137	Cesium-137	ND	20/37	0.2	0.1	0.51	X	0.62	0.11
		DT		1	0.3				
Radium-228	Radium-228	ND	35/37	0.1	0.1	1.88	X	2.20	0.32
		DT		2.7	1.1				
Thorium-230	Thorium-230	ND	16/37	1.5	0.5	0.87	X	1.06	0.19
		DT		1.3	0.6				
Tritium	Tritium	ND	24/37	0.1	0.1	5.34	X	48.82	43.48
		DT		130	0.1				
Uranium-234	Uranium-234	ND	26/37	1	0.5	0.74	N	0.78	0.04
		DT		1	0.3				

Table 7-1. Exposure Point Concentrations for Soil Radionuclides of Potential Concern (continued)

Radionuclides		Detect?	FOD	Concentration		Background Concentration	Dist[a]	UCL_{95}	EPC[b]
Parent	Daughter			Max	Min				
Surface and Subsurface Soil - Disposal Pit C (Unit of Concentration is pCi/g)									
Cesium-137	Cesium-137	ND	22/42	0.2	0.1	0.51	X	0.62	0.11
		DT		1	0.3				
Radium-228	Radium-228	ND	39/42	0.2	0.1	1.88	X	2.23	0.35
		DT		3.5	1.1				
Thorium-230	Thorium-230	ND	18/42	1.5	0.5	0.87	G	1.07	0.20
		DT		1.3	0.6				
Tritium	Tritium	ND	28/42	0.1	0.1	5.34	X	55.18	49.84
		DT		130	0.1				
Uranium-234	Uranium-234	ND	31/42	1	0.5	0.74	X	0.77	0.03
		DT		1	0.3				

Footnotes:

ND = Non-detect; DT = Detect; FOD = Frequency of Detection; Max = Maximum; Min = Minimum; Dist = Distribution; UCL_{95} - 95% upper confidence limit of the mean; EPC = Exposure Point Concentration

[a] Dist = N = Normal; L= Lognormal; G = Gamma; X = Non-Parametric

[b] EPC = Minimum of (UCL_{95}, Maximum Detected Concentration) - Background Concentration

[c] Evaluated as a part of its parent.

Table 7-2. Exposure Point Concentrations for Other Media-Specific Radionuclides of Potential Concern

Radionuclides		FOD	Detected Concentration		Background Concentration	Dist[a]	UCL_{95}	EPC[b]
Parent	Daughter		Max	Min				
Groundwater (Unit of Concentration is pCi/L)								
Actinium-227	Radium-223	34/78	0.1	1.06	0.26	L	0.30	0.05
Onsite Surface Water (Unit of Concentration is pCi/L)								
Actinium-227	Radium-223	13/46	0.05	0.4	0.12	X	0.81	0.28
Downgradient Surface Water (Unit of Concentration is pCi/L)								
None								
Onsite Sediment (Unit of Concentration is pCi/g)								
Cs-137	Cesium-137	21/46	0.3	1.5	0.51	L	0.61	0.10
Promethium-147	Promethium-147	8/10	0.1	83	14.16	X	29.55	15.39
Uranium-234	Uranium-234	26/46	0.4	1.5	0.52	X	0.64	0.12
Uranium-238	Uranium-238	22/46	0.4	1	0.31	X	0.45	0.15
Downgradient Sediment (Unit of Concentration is pCi/g)								
Radium-228	Radium-228	10/11	3.2	1.1	2.077	N	2.38	0.30
Thorium-230	Thorium-230	1/11	3.4	3.4	1.419	X	3.4	1.98
Uranium-233/234	Uranium-233/234	8/11	1.7	0.8	0.517	N	1.14	0.63
Uranium-238	Uranium-238	7/11	1.2	0.6	0.306	X	0.85	0.54

Footnotes

ND = Non-detect; DT = Detect; FOD = Frequency of Detection; Max = Maximum; Min = Minimum; Dist = Distribution; UCL_{95} - 95% upper confidence limit of the mean; EPC = Exposure Point Concentration

[a] Dist = N = Normal; L= Lognormal; G = Gamma; X = Non-Parametric

[b] EPC = Minimum of (UCL_{95}, Maximum Detected Concentration) - Background Concentration

7.1.3 Toxicity Assessment for ROPCs

RESRAD 6.5 utilizes Federal Guidance Report (FGR) No 11 and 12 DCFs for determining radiological dose assessment to various receptors present at the site. Those DCFs are based on International Commission on Radiological Protection (ICRP) 30 publications. To estimate radiological risk, the RESRAD code utilizes FGR 13 risk coefficient values. The risk coefficients derived in FGR 13 are based on methods and models that take into account the age- and gender-dependence of radionuclide intake, metabolism, dosimetry, radiogenic risk, and competing causes of death in estimating the cancer risk from low-level exposures to radionuclides in the environment. These risk co-efficient slope factors are presented in units of risk per pCi (internal pathways) or risk per year per pCi/g (external pathways). Attachment F provides the risk coefficients for each ROPC present at the site.

7.1.4 Risk Characterization

Risk characterization integrates the findings of the exposure assessment and toxicity assessment to estimate the likelihood that a receptor may experience an adverse effect as the result of exposure to ROPCs (USEPA, 1989). For radionuclides, incremental lifetime cancer risks (ILCRs), or the increased lifetime probability of cancer, and radiological doses were calculated for each receptor scenario.

The resulting ILCRs were compared to the range specified in the *National Oil and Hazardous Substances Contingency Plan* (USEPA, 1990) of 10^{-6} to 10^{-4}, or 1 in 1 million to 1 in 10,000 persons developing cancer. ILCRs below 10^{-6} are considered acceptable risks. ILCRs above 10^{-4} are considered unacceptable risks. Risks between 10^{-6} and 10^{-4} are generally referred to as the "acceptable risk range". Radiological dose estimates in mrem/yr also were compared against dose-based goals. State of New York identified a dose limit criterion of 10 mrem/yr. The radiological dose results for each receptor scenario were compared with respect to 10 mrem/yr dose criterion.

Attachment G presents output radiological dose and risk assessment summary reports for each exposure scenario. Table 7-1 presented the summary of maximum radiological dose and risk assessments in a 1000 year period under current site worker, future construction worker, future park worker, future recreational visitor, and future resident, respectively. The results showed that the maximum doses for ROPCs occurred at year 0 or at year 1000. The results of radiological risk and dose assessments showed that the maximum risk and dose did not exceed their corresponding acceptable risk and dose criteria for both current and future receptor scenarios. Therefore, no further radiological remediation is recommended based on the results of this risk assessment.

Table 7-3. Results of Maximum Dose and Risk Assessments for Various Receptors

Disposal Pit	Exposure Media	Current Site Worker		Future Construction Worker		Future Park Worker		Future Recreational Visitor		Future Residential Farmer	
		Dose[1]	Risk	Dose[1]	Risk	Dose[1]	Risk	Dose[1]	Risk	Dose[1]	Risk
A/B	Soil	0.02	4E-07	0.74	2E-07	0.17	3E-06	0.11	2E-07	0.6	1.1E-05
	Groundwater	N/A[2]				0.13	1E-07	0.01	2E-09	0.4	3.6E-07
	Surface Water					N/A				0.07	1.3E-08
	Sediment									0.00	1.3E-09
	Cumulative	**0.02**	**4E-07**	**0.74**	**2E-07**	**0.30**	**3E-06**	**0.11**	**2E-07**	**1.0**	**1.1E-05**
C	Soil	0.05	9E-07	0.71	5E-07	0.54	1E-05	0.25	2E-06	1.4	4.1E-05
	Groundwater	N/A				0.13	1E-07	0.01	2E-09	0.4	3.6E-07
	Surface Water					N/A				0.1	1.3E-08
	Sediment									0.0	1.3E-09
	Cumulative	**0.05**	**9E-07**	**0.7**	**5E-07**	**0.7**	**1E-05**	**0.3**	**2E-06**	**1.9**	**4.1E-05**

[1] Units of Dose is mrem/yr [2] N/A = not applicable for this receptor scenario

Note: Residual dose and risk assessment was also performed for a wader due to exposure to offsite surface water and sediment pathways. The wader will be exposed to less than 1 mrem/yr above background dose and 2E-9 level of risk.

7.1.5 Uncertainty Assessment

The methodology used in this risk assessment is consistent with USEPA risk assessment guidance documents. However, due to many assumptions that must be made about exposure and toxicity, there is uncertainty associated with every risk assessment. Assumptions built into the risk assessment in general, overestimate rather than underestimate potential risks, but occasionally can result in underestimating risk. In the following section, an evaluation is presented of the sources of uncertainty in the assessments and the relative influence of these sources on the results of the evaluation. The results of the assessments are presented in terms of the potential for adverse effects based upon a number of conservative assumptions. The tendency to be conservative is an effort toward protecting health. Uncertainty can be found at all phases in the risk assessment: in the analytical data, the exposure assessment, the toxicity assessment, and the risk characterization. Where uncertainty does exist, the BRA uses conservative assumptions to ensure that the outcome will be protective.

(A) Uncertainties in Analytical Data

Uncertainty is introduced to the assessment when sample locations are selected and when samples are collected and analyzed. Based on the information regarding historical site operations, and gamma walkover surveys, samples were collected from areas of potential sources and releases. As a result, there is a conservative bias for EPC and associated risk estimates.

In the assessment, the long-term exposure concentrations were upper estimates of site concentrations (e.g., maximum detect or 95% UCL) rather than the sample mean to characterize each disposal pits. The uncertainty from a relatively small sample size (less than 5) requires a greater amount of conservatism during the estimation of mean, while a large sample size requires less conservatism during the estimation of mean. For either case, a conservative bias to overestimate potential exposure has been incorporated into the risk estimates. The uncertainty associated with the statistical analysis of environmental data is low, with little introduction of bias.

(B) Uncertainties in Exposure Assessment

Exposure assessment may introduce considerable uncertainty in the risk assessment process. Exposure assumptions are based on speculation regarding potential land use, assumptions concerning contaminant fate and transport, and receptor behavior. The uncertainty associated with the exposure assumptions used in the risk assessment is low to moderate, and most likely overestimates the actual risks.

The exposure scenarios, receptors, exposure pathways, exposure parameters, and media included in the assessment were selected to conservatively represent a variety of exposure scenarios that could occur at the Site area. The site is zoned as industrial. Therefore, six different types of receptors were considered for the current and future RME receptors for the sites. Dose and risk assessments were also performed for a very conservative residential receptor scenario.

Assumptions regarding uniform contamination across the actual size of each exposure unit with no soil cover are likely produce conservative dose and risk results. The assessment also assumed that the receptors will be exposed equally at each location within each disposal pit. The Site-wide RI report showed that the nature and extent of radiological contamination cover a small area (which would lower dose estimates) and may only reasonably expose a subset of individuals (e.g., utility workers) (Parsons, 2002). Therefore, equal exposures at each location are quite unlikely.

Exposure parameters were selected to provide a conservative, yet reasonable, estimate of potential risks to each receptor. Site-specific measurements and data were used, as appropriate, to describe site conditions as accurately as possible. Where site-specific data were not available, parameter values were chosen to provide reasonably conservative estimates of risk, or standard default values recommended by the *Exposure Factors Handbook* (USEPA, 2011) were used. Intake parameters for the various exposure pathways (soil ingestion, dermal contact, inhalation, external gamma) were conservatively assumed to be upper bound estimates to take account the uncertainty associated with those parameters.

The risk from gamma radiation is dependent on the source surface area and thickness. Slope factors for external gamma radiation assume that the source is a semi-infinite slab. This geometry may represent actual conditions resulting in an overestimate of risk. The radionuclide concentrations are spotty in nature. However, during this assessment, radionuclides are assumed to be uniformly contaminated across the thickness of the contaminated zone. This assumption resulted in an overestimation of dose and risk.

(C) Uncertainties Related to Toxicity Information

Although USEPA approved toxicity values were used for the HHRA, a significant amount of uncertainty may surround these values. Identification of the sources of this uncertainty enables the risk assessor to establish the degree of confidence associated with the toxicity measures.

Uncertainty is inherent within the toxicity assessment and is primarily due to differences in study design, species, sex, routes of exposure, or dose-response relationships. A major source of uncertainty involves using toxicity values based on experimental studies that substantially differ from typical human exposure scenarios. The derivation of the toxicity values must take into account such differences as 1) using dose-response information from animal studies to predict effects in humans, 2) extrapolating dose-response information from high-dose studies to predict adverse health effects from low doses, 3) using data from short-term studies to predict chronic effects, and 4) extrapolating from uniform animal populations to variable human populations.

The cancer slope factors in particular are based on studies that may differ greatly from realistic situations. Experimental cancer bioassays typically expose animals to very high levels of chemicals (i.e., the maximum tolerated dose) for their entire lifetime. After appropriate studies have been identified, the slope factor is calculated as the 95% UCL of the slope of the dose-response curve. This introduces conservatism into the risk assessment. In addition, carcinogens are assumed to be human carcinogens regardless of USEPA's weight-of-evidence classification.

Lifetime cancer risk estimates are provided for exposure to constituents and are compared to the CERCLA target risk range of 10^{-6} to 10^{-4}. Radiological risk slope factors have been developed primarily using data from groups such as the Japanese atomic bomb survivors. These individuals received large doses of radiation over a short period of time. By contrast, potential receptors in this assessment receive relatively small radiological doses over a long period of time. Although cancerous effects have only been detected at doses several orders of magnitude larger than those estimated at the Site, it is assumed that the slope factors apply to both large and small radiological doses. Non-radiological cancer slope factors (CSFs) are developed mostly from animal studies, and slope factors for radionuclides and non-radiological incorporate several differences that may result in incompatibility. USEPA, therefore, acknowledges a large (undefined) uncertainty in risk estimates and recommends that radiological and chemical risks be presented separately (USEPA, 1996).

A series of reports published by the National Research Council's Committee on the Biological Effects of Ionizing Radiation (BEIR) lists additional uncertainties resulting from the use of CSFs for radionuclides. BEIR reports point out that cancer risks from exposure to radionuclides at environmental levels (typical background radiation produces approximately 300 mrem/yr) are very difficult to distinguish from background cancer rates. In addition, the calculation of CSFs is based on radium dial painter studies, atomic bomb survivor studies, etc., each considering doses many orders of magnitude higher than those received at environmental levels. The applicability of the linear no-threshold model has been debated by many professional societies. However, the linear no-threshold model (i.e., assuming risk is linear with exposure and is possible for even the smallest doses) has been adopted by all relevant United States regulating agencies. Using this model, risks at environmental levels are calculated even at dose levels a small fraction of background.

An additional area of uncertainty is exposure to multiple chemicals. Toxicological criteria are developed for individual chemicals. Potential interactions between chemicals could occur, leading to uncertainty in the risk estimates for multiple-chemical exposures. The risk assessment assumes that toxicity is additive across chemicals. This assumption would underestimate risk for chemicals that are synergistic or potentiometric with regard to toxicity, and overestimate risk for chemicals that are antagonistic with regard to toxicity. In addition, if chemical toxicological mechanisms differ or affect different organ systems, the assumption of additivity is conservative.

In October 1999, Washington State University, under contract to the USACE, published a report titled *Determination of the In Vitro Dissolution Rates of Selected Radionuclides in Soils* and Subsequent ICRP 30 Solubility Classification for Dosimetry that may be used to support radiological dose and risk estimates. In vitro dissolution rates are broken into three classes: D, W and Y, with Class D being the most soluble and Class Y being the least soluble. RESRAD conservatively assumes by default that all radionuclides are present as Class Y because Class Y would cause the calculated dose and risk estimates to be higher.

(D) Uncertainties in Risk Characterization

Uncertainties in the EPC estimation, exposure assessment, and toxicity assessment affect the degree of confidence in the assessment of risks. If the uncertainty in the EPC is low and the risk-driving chemical is a known human carcinogen (Class A), the corresponding uncertainty in the risk characterization is considered low. For cases where the EPC uncertainty is low, but the toxicity criteria are more uncertain, the corresponding uncertainty is considered low to moderate. Finally, if the EPC uncertainty is moderate to high, then the corresponding uncertainty in the risk characterization is considered moderate to high.

Combining the upper bound exposure assumptions, upper bound toxicity assumptions, and upper bound exposure concentrations, as in the RME approach, is a conservative approach typically utilized in risk assessment. This approach assumes, for example, that individuals who are most sensitive to the potential cancer effects of a chemical will also have a breathing rate and exposure duration (e.g., time at one residence) that exceeds most of the population. With numerous upper bound exposure assumptions combined, the risk is typically overestimated for the population. The corollary is that virtually all potentially exposed individuals will have a much lower level of potential risk than that which is estimated by the conservative assumptions employed in this assessment.

8.0 QUALITY ASSURANCE / QUALITY CONTROL

Only qualified and trained personnel operated the equipment and instrumentation used in the remediation and confirmation survey field activities. Personnel were trained in the technical, quality control (QC), and health and safety aspects of the project, as well as in the calibration, maintenance, and operating procedures for their assigned equipment.

8.1 Instrumentation Requirements

The CABRERA Project Health Physicist (HP) was responsible for determining the instrumentation required to complete the requirements of this confirmation survey. Only instrumentation approved by the CABRERA Project HP was used to collect radiological data. The CABRERA Project HP was responsible for ensuring individuals were appropriately trained to use project instrumentation and other equipment, and that instrumentation met the required detection sensitivities. Instrumentation were operated in accordance with either a written procedure or manufacturers' manual, as determined by the CABRERA Project HP. The procedure and/or manual provided guidance to field personnel on the proper use and limitations of the instrument.

Instrument QC checks were performed as presented in the project Work Plan. Instruments used to obtain radiological data, including GPS equipment, were inspected for physical damage, current calibration and erroneous readings in accordance with applicable procedures and/or protocols. The individual performing these tasks documented the results in accordance with the associated instrument procedure and/or protocols. Instrumentation not meeting the specified requirements of calibration, inspection, or response check would have been removed from operation. All instruments met these QC requirements during field activities, and thus, none were removed from service.

8.1.1 Calibration Requirements

Instruments used during the confirmation survey had current calibration and maintenance records on site for review and inspection. The records included the following:

- name of the equipment
- equipment identification (model and serial number)
- manufacturer
- date of calibration
- calibration due date

Instrumentation was maintained and calibrated to manufacturers' specifications to ensure that required traceability, sensitivity, accuracy and precision of the equipment/instruments was maintained. Instruments were under current calibration. The calibration records for the instruments used in support of this FSS are presented in Attachment H.

8.1.2 Instrument QC Source Checks

Prior to daily use, project instrumentation was QC checked by comparing instrument response to a benchmark response. Prior to the commencement of field operations, site reference locations were selected for performance of these checks; subsequent QC checks were performed at these locations. QC source checks consisted of a one-minute integrated count with the designated source positioned in a reproducible geometry performed at the reference location. Prior to the start of initial surveys, this procedure was repeated at least ten times to establish average instrument response. Instrument responses to designated QC check sources were recorded and evaluated against the average established at the start of the field activities. An acceptance criterion of ± 20% was required for direct measurement detectors. The QC results for the instruments used in support this FSS are presented in Attachment H.

9.0 CONCLUSIONS

Remedial activities were performed at SEAD-12 within burial pits A/B, C-1, and C-2 to remove multiple radioactive military items, including dials containing radium and presumed facsimiles of classified system components containing thorium. A confirmation survey, including gamma walkover surveys and systematic/biased soil sampling, was performed on the final surfaces of the excavated pits. This soil sample data was compiled, combined with applicable soil sample data collected as a part of the BRA performed in 2001 (Parsons, 2002), and these data were included as inputs into a residual radiological dose and risk assessment. This dose and risk assessment was performed using the dose modeling computer code RESRAD to determine the following:

1) The level of residual radioactivity distinguishable from background at this site would result in a total effective dose equivalent to an average member of the critical group of 10 mrem/yr or less as per NYSDEC standards; and

2) The level of residual radioactivity represents an excess lifetime risk of cancer, at a point of exposure, to an average individual no greater than between 10^{-4} and 10^{-6}.

As described in detail in Section 7.0, the total radiological dose and risk for the residential farmer receptor scenario in Pit A/B are 1.0 mrem/yr and an excess risk of 1.1E-5, respectively. The total radiological dose and risk for the residential farmer receptor scenario in Pit C are 1.9 mrem/yr and an excess risk of 4.1E-5, respectively. These calculated radiological dose and risk values comply with the requirements listed in 1) and 2) above. Therefore, it is concluded that SEAD-12 meets the criteria for unrestricted release.

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10.0 REFERENCES

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FIGURES

Figure 1-1: Site Location
Figure 1-2: Site Layout
Figure 2-1: Conveyor Detector Setup for Soil Screening
Figure 3-1: Excavation Areas Grid Layout
Figure 7-1: Pit A/B Gamma Walkover Survey
Figure 7-2: Pit A/B Sample Locations
Figure 7-3: Pit C-1 Gamma Walkover Survey
Figure 7-4: Pit C-1 Sample Locations
Figure 7-5: Pit C-2 Gamma Walkover Survey
Figure 7-6: Pit C-2 Sample Locations
Figure 7-7: Dose/Risk Assessment Sample Locations

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Legend

- Survey Units
- SEAD Sections

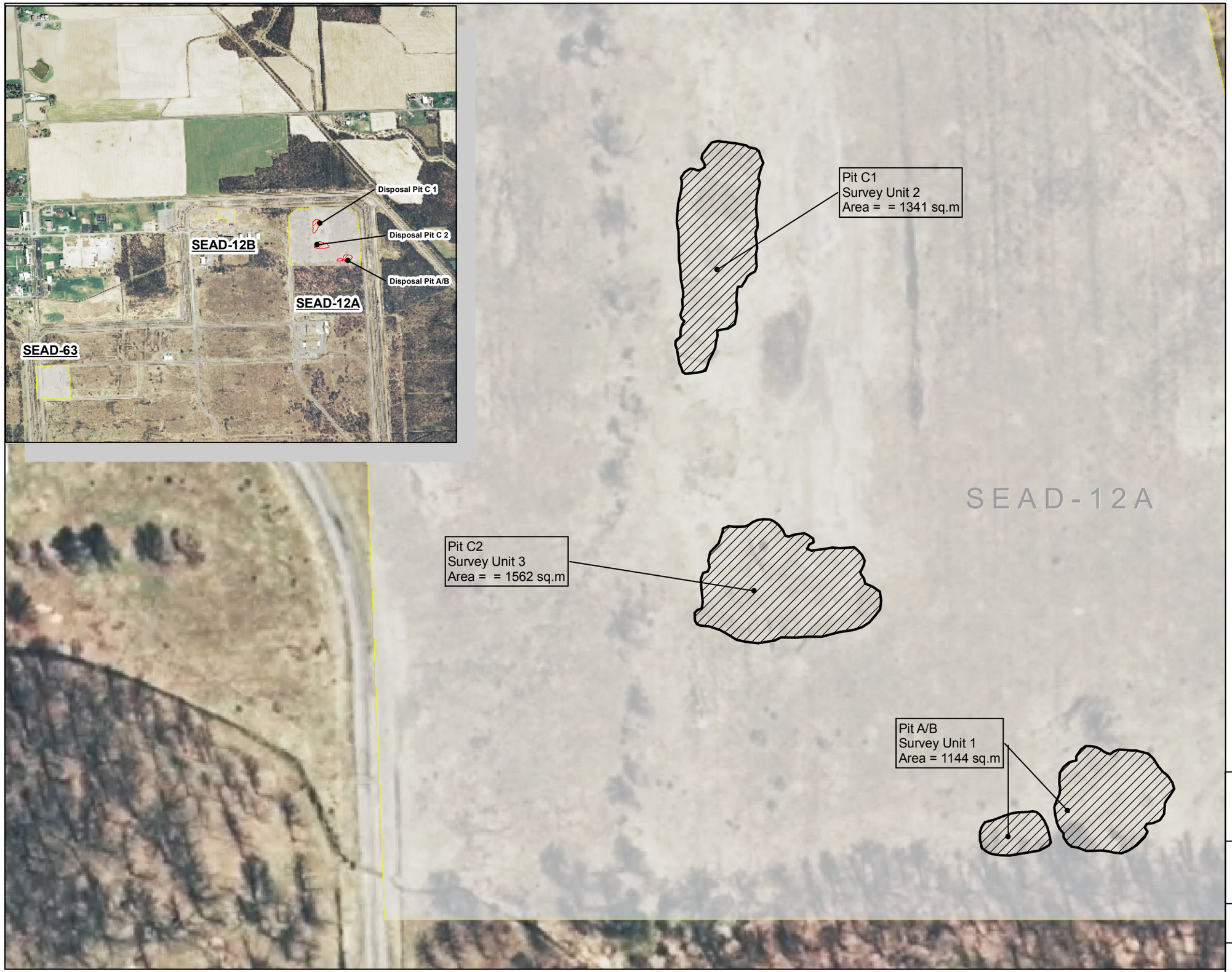
N

0 420 840 Feet

SITE LOCATION

SENECA ARMY DEPOT ACTIVITY
SEAD-12 FINAL STATUS SURVEY

01/10	CABRERA Project No. 09-1030.00	FIGURE 1-1
	Cabrera Services 473 Silver In East Hartford, CT, 06066	U.S. Army Corps of Engineers,



Legend

Survey Units

SEAD Sections

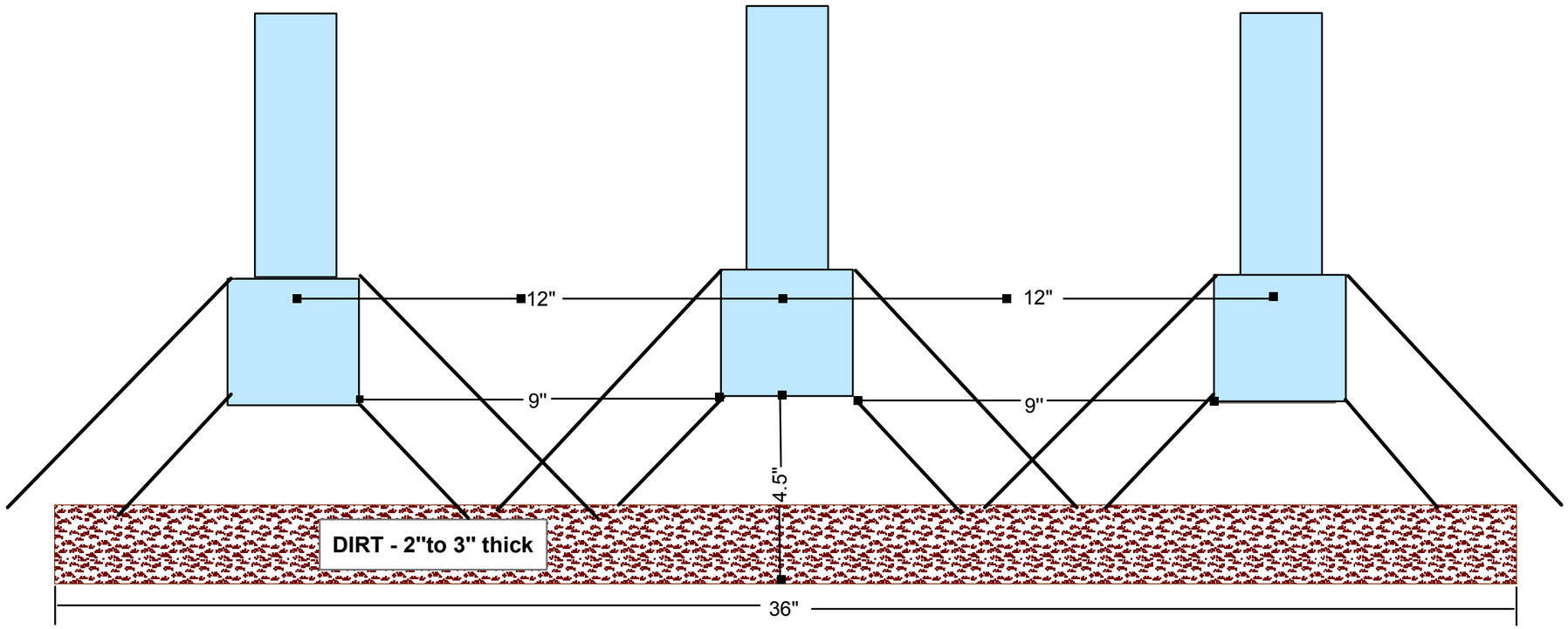
N

0 100 200 Feet

SITE LAYOUT

SENECA ARMY DEPOT ACTIVITY
SEAD-12 FINAL STATUS SURVEY

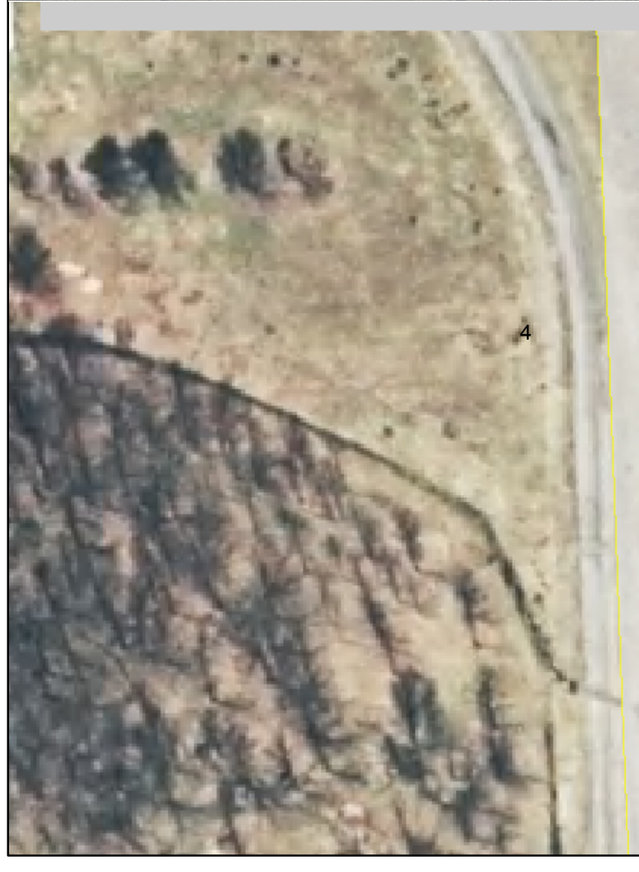
02/10	CABRERA Project No. 09-1030.00	FIGURE 1-2
Cabrera Services 473 Silver In East Hartford, CT, 06066		U.S. Army Corps of Engineers,

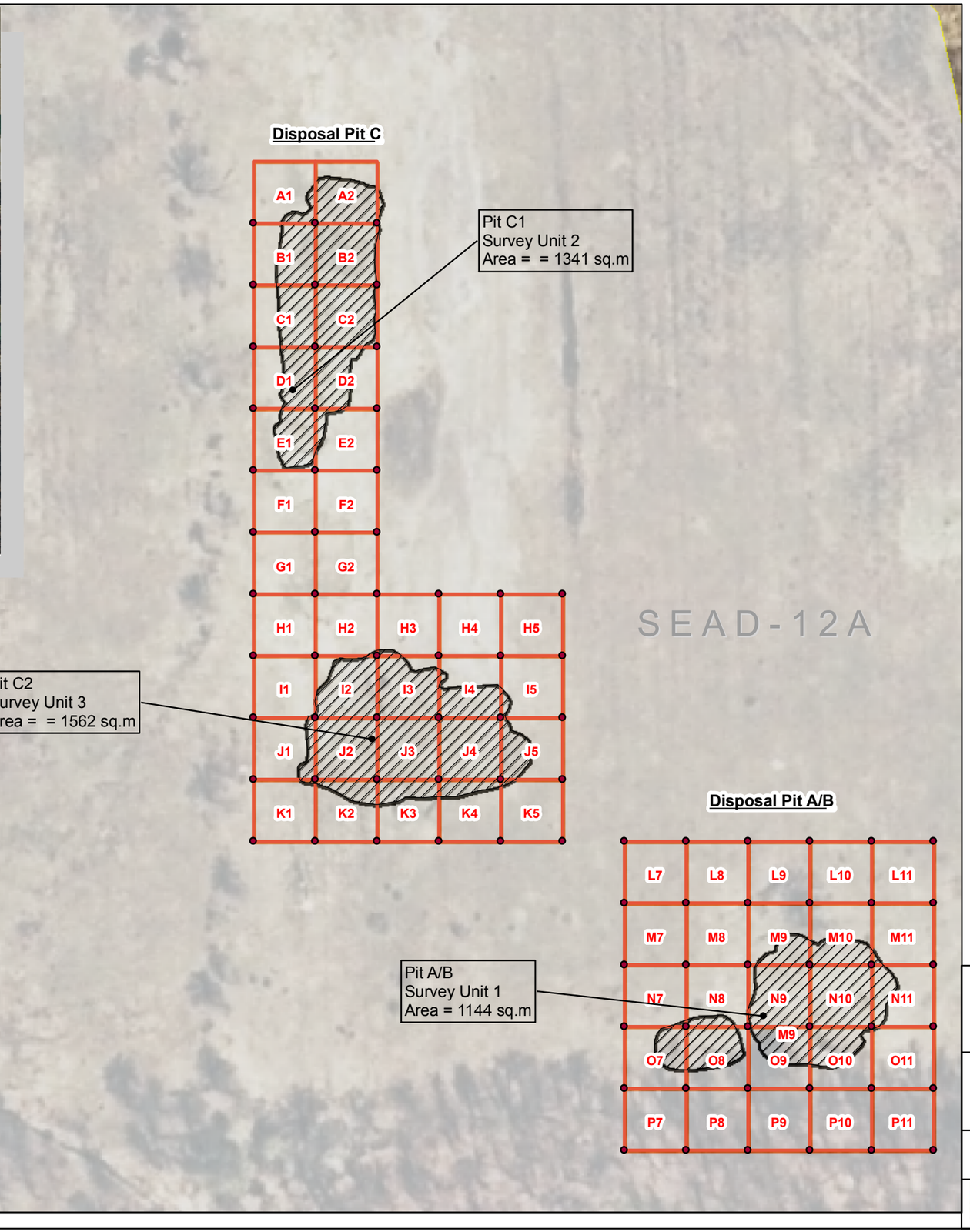


CONVEYOR DETECTOR SETUP FOR SOIL SCREENING

SENECA ARMY DEPOT ACTIVITY
SEAD-12 FINAL STATUS SURVEY

02/10	CABRERA Project No. 09-1030.00	FIGURE 2-1
Cabrera Services 473 Silver In East Hartford, CT, 06066		U.S. Army Corps of Engineers,





Legend

- SEAD Sections
- Survey Units
- Exavation Sampling Grids

N

0 110 220 Feet

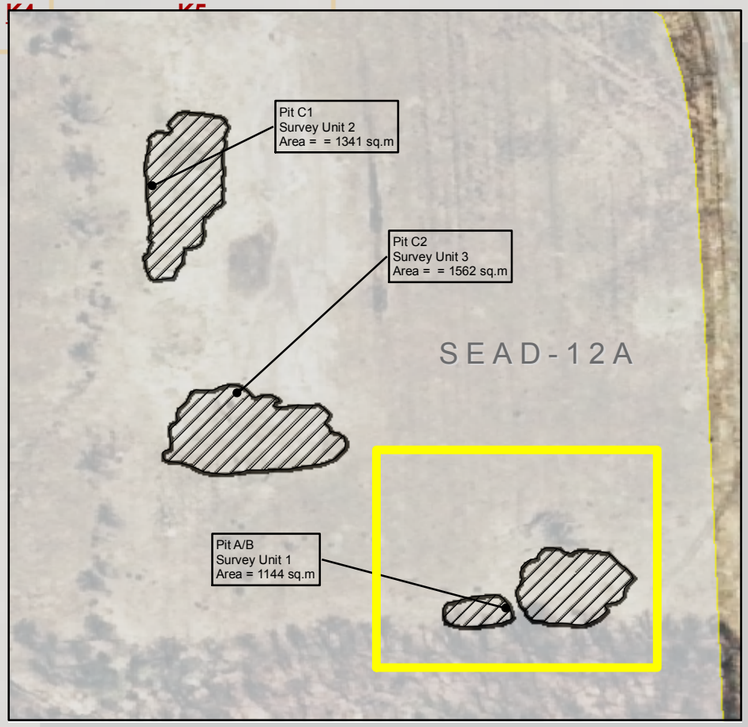
EXCAVATION AREAS SAMPLING GRIDS

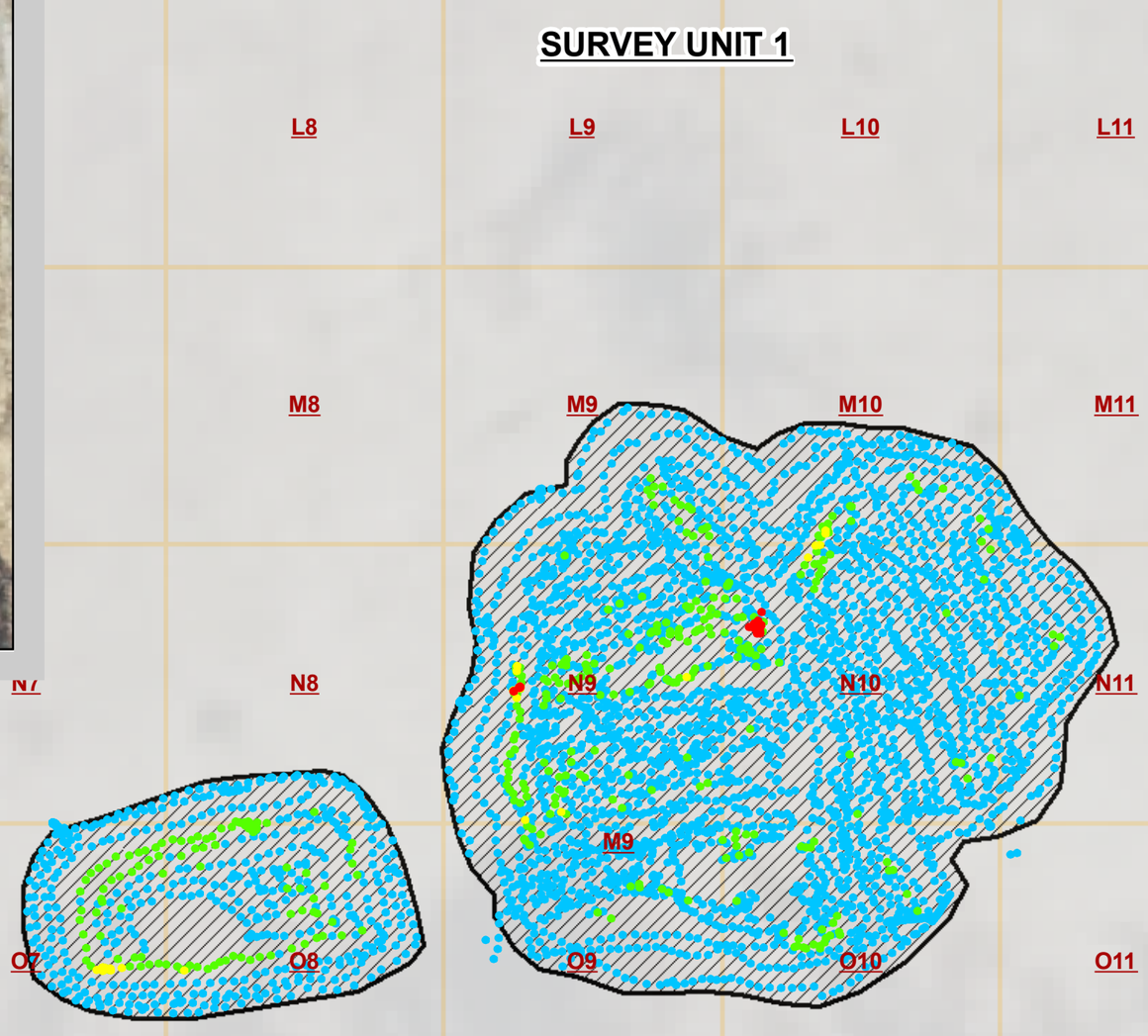
SENECA ARMY DEPOT ACTIVITY
SEAD-12 FINAL STATUS SURVEY

02/10	CABRERA Project No. 09-1030.00	FIGURE 3-1
Cabrera Services 473 Silver In East Hartford, CT, 06066		U.S. Army Corps of Engineers,

Disposal Pit A/B

SURVEY UNIT 1





Legend

Zscore of CPM

- <1
- 1-2
- 2-3
- >3
- SEAD Sections
- Survey Units
- Sample Grid Layout

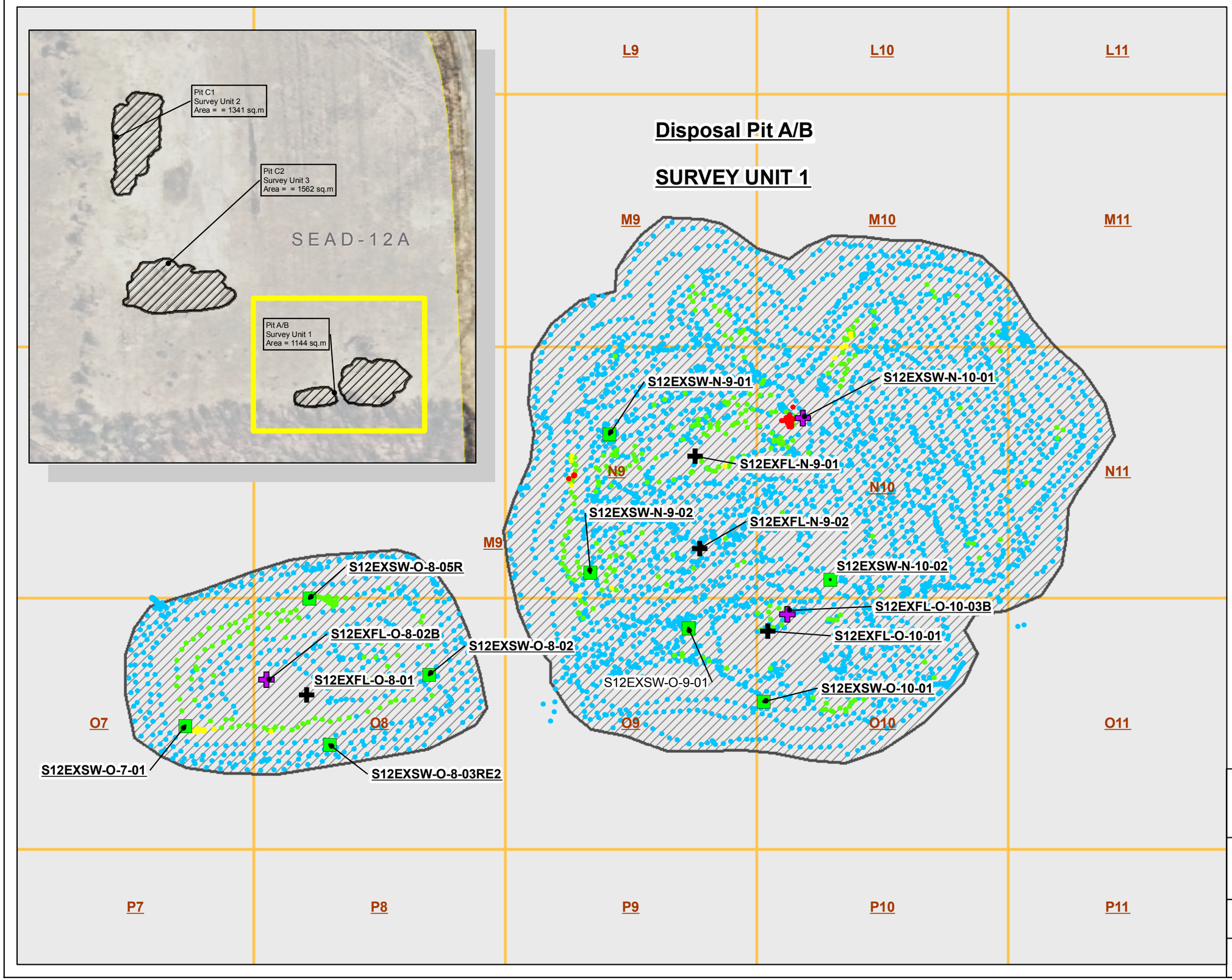
N

0 30 60 Feet

SURVEY UNIT 1 GAMMA WALKOVER SURVEY

SENECA ARMY DEPOT ACTIVITY
SEAD-12 FINAL STATUS SURVEY

02/10	CABRERA Project No. 09-1030.00	FIGURE 7-1
	Cabrera Services 473 Silver In East Hartford, CT, 06066	U.S. Army Corps of Engineers,



Legend

- Biased Samples
- Excavation Wall Samples
- Excavation Floor Samples

Zscore of CPM

- <1
- 1-2
- 2-3
- >3
- SEAD Sections
- Survey Units
- Excavation Sampling Grids

N

0 20 40 Feet

SURVEY UNIT 1 SAMPLE LOCATIONS

SENECA army DEPOT ACTIVITY
SEAD-12 FINAL STATUS SURVEY

02/10	CABRERA Project No. 09-1030.00	FIGURE 7-2
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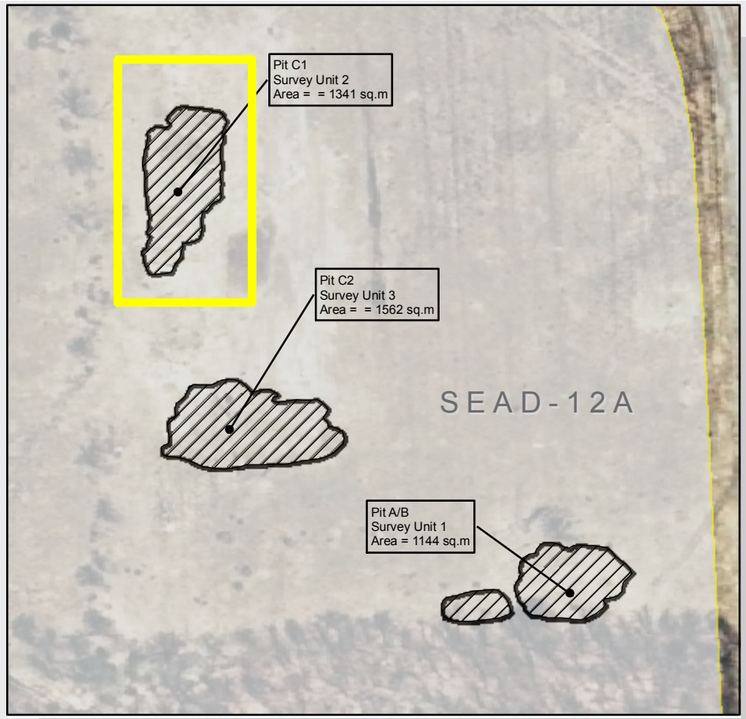

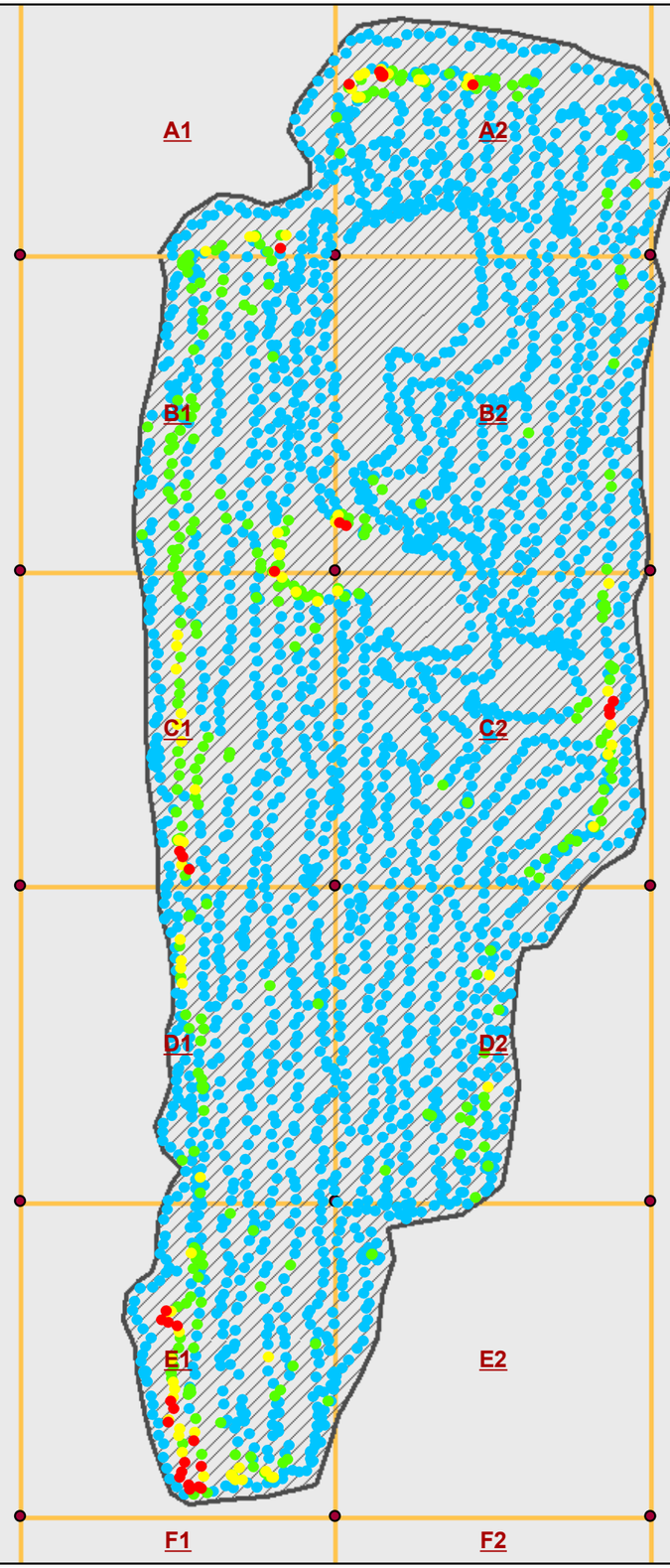

Disposal Pit C1

SURVEY UNIT 2

Legend

Zscore of CPM

- <1
- 1-2
- 2-3
- >3

SEAD Sections

Survey Units

Sample Grid Layout

N

0 25 50 Feet

SURVEY UNIT 2 GAMMA WALKOVER SURVEY

SENECA ARMY DEPOT ACTIVITY
SEAD-12 FINAL STATUS SURVEY

02/10	CABRERA Project No. 09-1030.00	FIGURE 7-3
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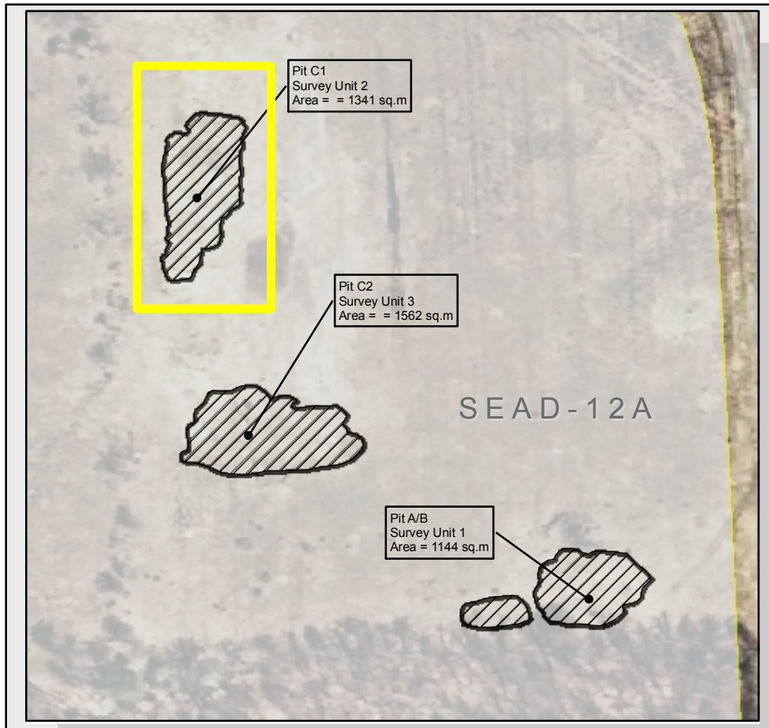
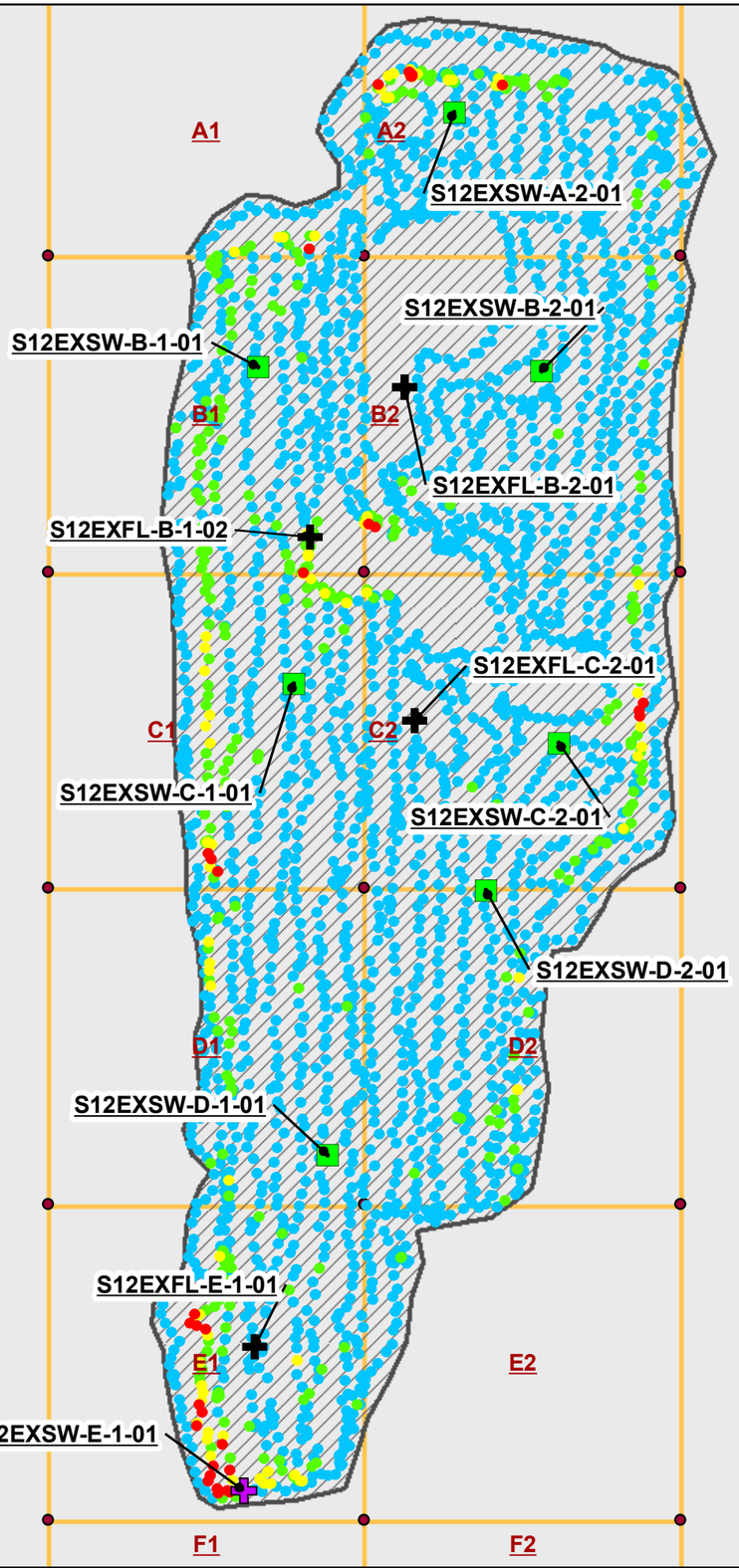




Disposal Pit C1

SURVEY UNIT 2

Legend

- Biased Samples
- Excavation Wall Samples
- Excavation Floor Samples

Zscore of CPM

- <1
- 1-2
- 2-3
- >3
- SEAD Sections
- Survey Units
- Sample Grid Layout

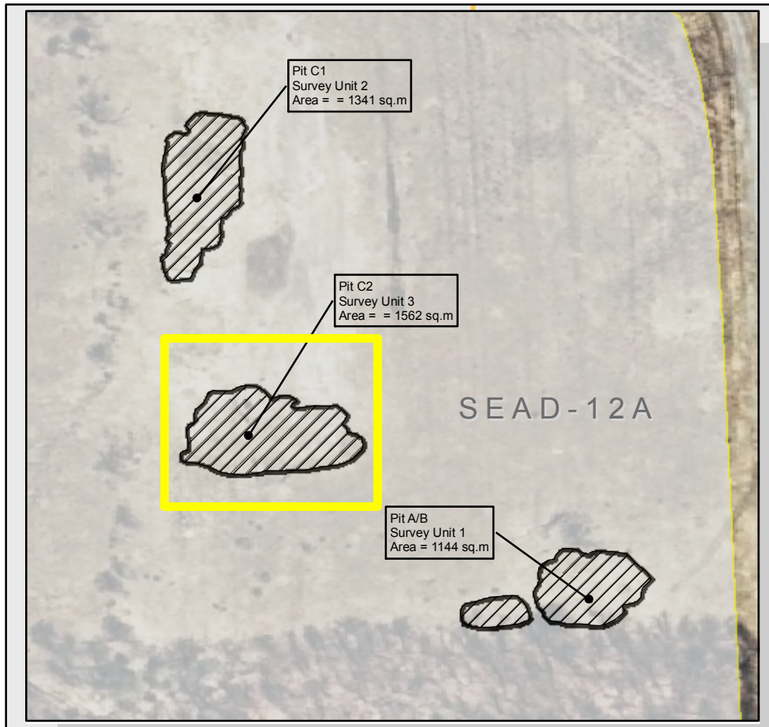
N

0 25 50 Feet

SURVEY UNIT 2 SAMPLE LOCATIONS

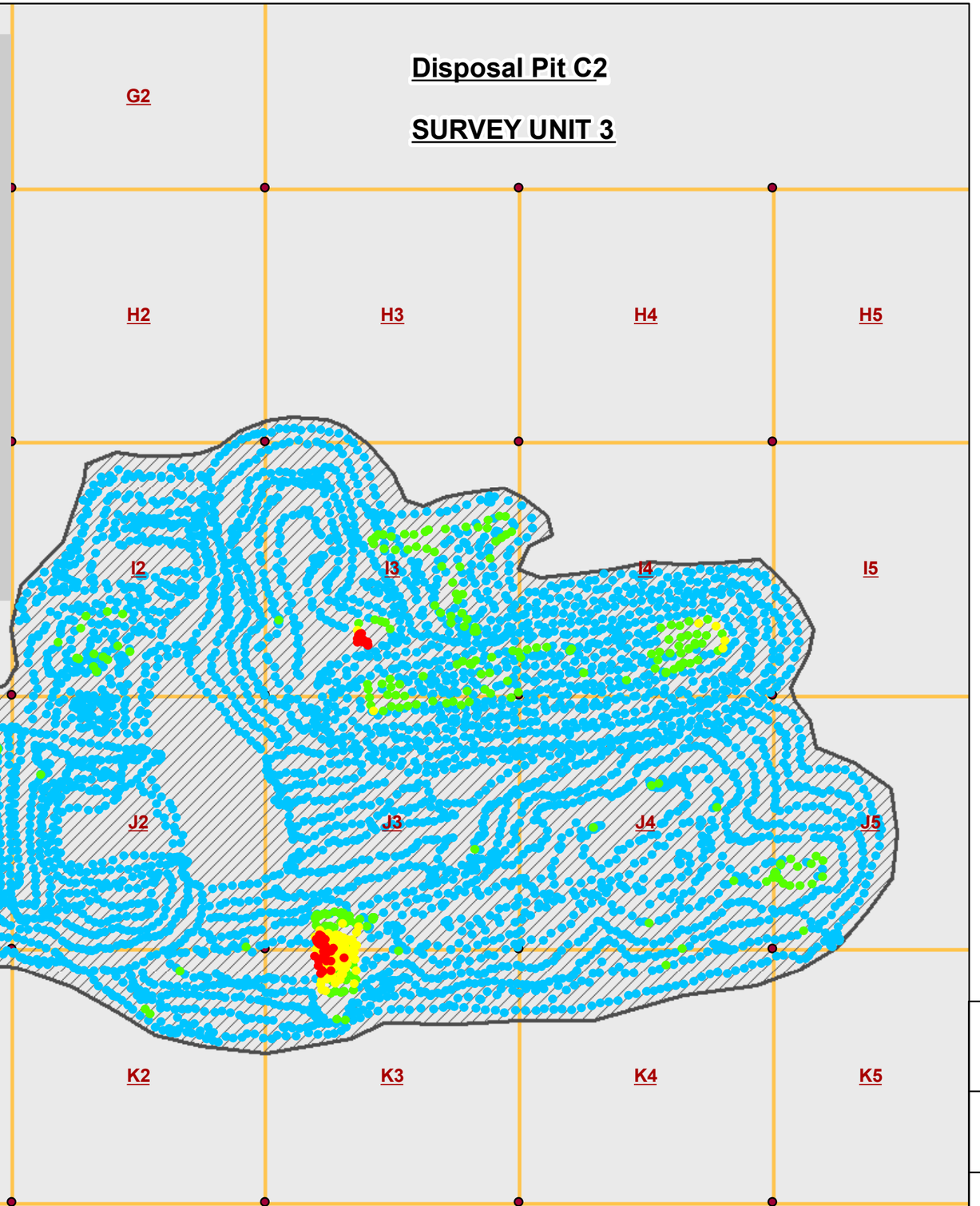
SENECA army DEPOT ACTIVITY
SEAD-12 FINAL STATUS SURVEY

02/10	CABRERA Project No. 09-1030.00	FIGURE 7-4
Cabrera Services 473 Silver In East Hartford, CT, 06066		U.S. Army Corps of Engineers,



Disposal Pit C2

SURVEY UNIT 3



Legend

Zscore of CPM

- <1
- 1-2
- 2-3
- >3

SEAD Sections

Survey Units

Sample Grid Layout

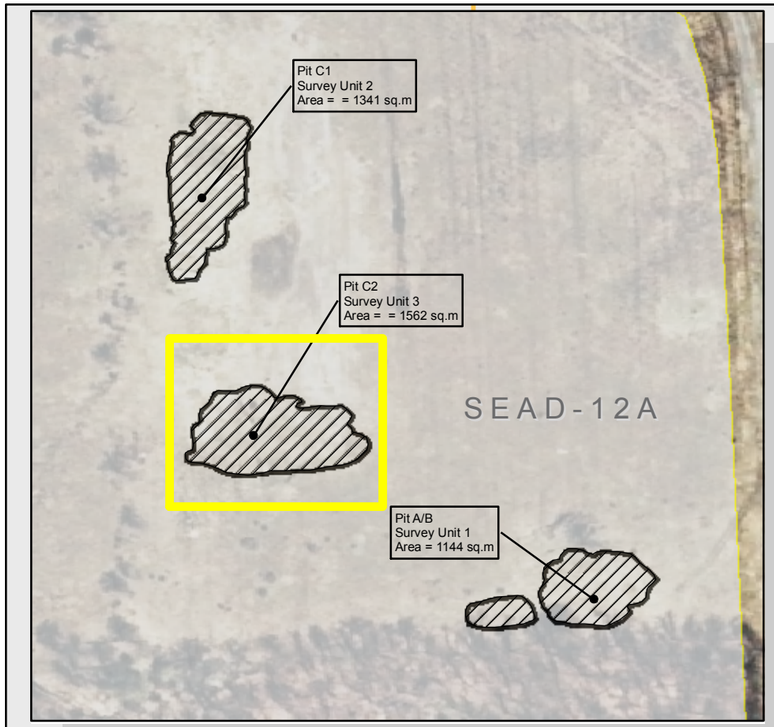
N

0 25 50 Feet

SURVEY UNIT 3 GAMMA WALKOVER SURVEY

SENECA ARMY DEPOT ACTIVITY
SEAD-12 FINAL STATUS SURVEY

02/10	CABRERA Project No. 09-1030.00	FIGURE 7-5
Cabrera Services 473 Silver In East Hartford, CT, 06066		U.S. Army Corps of Engineers,



Disposal Pit C2

SURVEY UNIT 3

G2 H2 H3 H4 H5

I2 I3 I4 I5

J1 J2 J3 J4 J5

K1 K2 K3 K4 K5

S12EXSW-I-3-01
S12EXSW-I-2-02
S12EXSW-I-3-02
S12EXFL-I-3-01RE
S12EXFL-I-4-01
S12EXSW-I-2-01
S12EXFL-J-2-02
S12EXSW-J-4-02
S12EXSW-J-3-01
S12EXSW-J-2-02
S12EXSW-J-4-01
S12EXSW-J-2-01
S12EXFL-K-3-01
S12EXFL-J-4-01
S12EXSW-J-4-03
S12EXSW-J-5-01
S12EXSW-K-4-01
S12EXSW-K-3-01

Legend

- Biased Samples
- Excavation Wall Samples
- Excavation Floor Samples

Zscore of CPM

- <1
- 1-2
- 2-3
- >3
- SEAD Sections
- Survey Units
- Sample Grid Layout

N

0 25 50 Feet

SURVEY UNIT 3 SAMPLE LOCATIONS

SENECA ARMY DEPOT ACTIVITY
SEAD-12 FINAL STATUS SURVEY

02/10	CABRERA Project No. 09-1030.00	FIGURE 7-6
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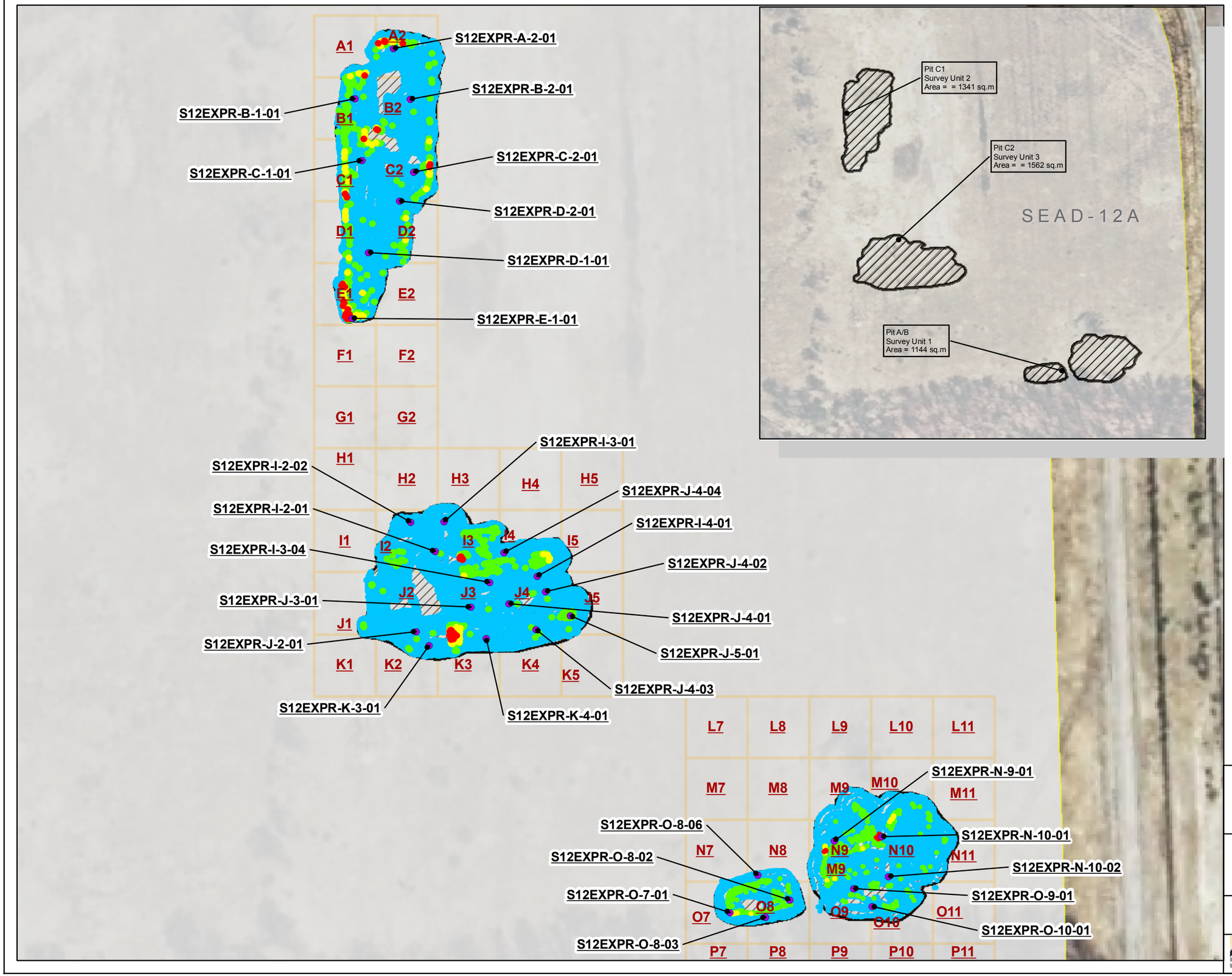

Legend

- Perimeter Samples

Zscore of CPM

- <1
- 1-2
- 2-3
- >3
- SEAD Sections
- Survey Units
- Sample Grid Layout

N

0 90 180 Feet

SURVEY UNIT 4 SAMPLE LOCATIONS

SENECA ARMY DEPOT ACTIVITY
SEAD-12 FINAL STATUS SURVEY

02/10	CABRERA Project No. 09-1030.00	FIGURE 7-7
Cabrera Services 473 Silver In East Hartford, CT, 06066		U.S. Army Corps of Engineers,

ATTACHMENTS

Attachment A: Summary of Field Activities (technical memorandum)

Attachment B: Survey Minimum Detectable Concentration Calculations

Attachment C: Confirmation Survey and Baseline Risk Assessment Sample Results

Attachment D: Identification of ROPCs and Determination of EPC for ROPCs

Attachment E: Assigned Values for RESRAD Input Parameters

Attachment F: Toxicological Properties of ROPCs

Attachment G: Receptor Results and Output Summary Dose and Risk Reports

Attachment H: Instrument Quality Control Records and Certificates of Calibration

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ATTACHMENT A

Summary of Field Activities (technical memorandum)

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Summary of Field Activities

SEAD-12 Excavation
Seneca Army Depot Activity, Romulus, New York

1.0 INTRODUCTION

Cabrera Services, Inc. (CABRERA) is contracted with Parsons Infrastructure and Technology, Inc. (Parsons) to provide health physics support services during the excavation of three previously identified areas at SEAD-12, Seneca Army Depot Activity in Romulus, New York. The excavations, at Disposal Pits A/B and C, were subject to surface gamma walkover and geophysical surveys, test-pitting, and soil sampling during the Remedial Investigation (RI) performed at the site in the late 1990s. The RI concluded that no further action at the site was warranted. In 2008, the Army decided to move forward with an effort to fully remove all military items identified in the test pits prior to leasing the property to a private tenant. The excavation began on 13 July 2009.

Parsons prepared a project Work Plan (Parsons 2009) under the assumption that the excavation would proceed in a manner similar to that performed by Plexus (with support from Cabrera) at SEAD-63 in 2004 (Plexus 2005). The desired disposition of the excavated materials was either final disposal at a local solid waste landfill or reuse as backfill materials.

The excavation has resulted in the discovery of multiple radioactive military items, including dials containing radium and/or thorium, and presumed facsimiles of classified weapons system components containing thorium. Some limited contamination of soils, consisting of small dial fragments, has been observed. Based on the change in the underlying assumptions of the current project work plan, additional documentation regarding the project approach is required.

The scope of this memorandum is to document the radiological screening approach, the capabilities and limitations of debris and soil screening surveys, discuss the applicable and appropriate derived concentration guideline levels (DCGLs) used to demonstrate compliance with release criteria, and present the sampling plan for confirmation sampling of waste soils prior to disposal and the final excavations prior to backfill.

2.0 RADIOLOGICAL SCREENING METHODOLOGY

2.1 Surface Baseline Survey

To document the pre-excavation conditions of the ground surfaces at the presumed excavation pit footprints and planned support areas, a Trimble global positioning system (GPS)-enabled gamma walkover survey (GWS) was performed using a Ludlum 44-20 3”x3” sodium iodide (NaI) gamma scintillation detector. The data were logged and uploaded to geographical information system (GIS) mapping software and statistically evaluated to identify any outliers or anomalies. The footprints of Pit A, Pit B, Pit C-2, the sorting/segregation area, and the background area were scanning. Logged scans at Pit C-1 were not performed prior to excavation; due to some initial setup problems with the GPS unit, only qualitative data were collected from the C-1 footprint. One point of interest (POI) with above-background radiation levels was identified in the C-1 footprint. Further investigation found a small piece of brown sandstone-like material for which subsequent laboratory analyses identified elevated levels of radionuclides associated with both the natural uranium and thorium decay series.

2.2 Initial Excavation Screening

Excavation began at Pit B. Material was transferred from the track excavator to an end dump truck, which drove to the staging area where material was placed on a plastic liner. A bulldozer was used to evenly spread the excavated material to facilitate gamma scanning measurements. Scanning was performed using a Ludlum 44-20; the technician utilized the audio response to identify locations with elevated readings, which were flagged. Following the scan, the technician returned to the flagged locations to investigate and manually remove the radioactive source. If needed, the bulldozer was used to assist in digging out any large objects. Radioactive sources were placed into B-12 waste containers.

The scanning, flagging, and removal process continued on the excavated material piles during the excavation of all pits. The thickness of material placed on the waste pile at any one time was limited to 6 inches; however due to the volume of material removed (particularly from Pit A) lifts may have exceeded 6 inches.

The minimum detectable concentration (MDC) of the Ludlum 44-20 used in the gamma scanning was calculated using the methodology from NUREG-1507 (NRC 1998). Based on the initial identification of dials with radium luminescent paint, the primary radionuclide of concern identified is radium-226 (^{226}Ra). The detector response to ^{226}Ra in equilibrium with its progeny with varying thicknesses of soil cover was modeled. Assuming no soil cover, a MDC of 1.5 picocuries per gram (pCi/g) is achievable. With a soil cover of 3 inches, the MDC is modeled to be 4.1 pCi/g.

2.3 Secondary Excavation Screening

To accomplish the objective of sorting the excavated materials by size, a screen plant was brought onsite. Excavated material was sorted into less than 6-inch diameter (i.e., mostly soils) and greater than 6-inch diameter streams. Additional gamma scanning was performed on the lift removed from the excavated material pile prior to loading that material into the screen plant. In addition, a gamma detection system was installed on the less than 6-inch diameter output conveyor of the plant to allow for an additional check on the previous scans. The alarm of the conveyor detection system was set at slightly above natural background to allow for the most conservative approach in screening the material. When the alarm sounded, the screen plant was shut down, and manual screening was performed on the material to identify the source.

The screen plant detector system consisted of three Ludlum 44-20 3”x3” NaI detectors connected to a Ludlum 4609 multi-detector control box. The detectors were suspended approximately 3 inches over the soil on the output conveyor. At the operating speed of the conveyor (6 feet per second), each individual detector has a modeled MDC of 3.0 pCi/g with no soil cover. Under a soil cover of 3 inches (the maximum observed soil thickness on the conveyor), the modeled MDC is 8.2 pCi/g. However, the intent of the detector system is to identify discrete sources that may have been missed during the previous scans, and to not assess low-level distributed activity in the soils. The waste soils are subject to additional soil sampling as described in Section 3.1.

2.4 Radionuclide Identification

After discovery of the radioactive components, three samples of material and four smear samples with activity detected above background were sent to GEL Laboratory in Charleston, South Carolina, for quick screen gamma spectroscopy analyses. The results were used to confirm the

suspected radionuclides of concern (ROCs) for this project. Table 2-1 lists the samples and detected results.

Table 2-1. Gamma Spectroscopy Quick Screen Results

SAMPLE ID	MATERIAL	DETECTED RADIONUCLIDES (1)
S12DS01; S12WS04	Brown sandstone material	Elevated natural uranium (^{238}U) progeny: ^{214}Bi (250 pCi/g); ^{214}Pb (249 pCi/g); ^{210}Pb (243 pCi/g) Elevated natural thorium (^{232}Th) progeny: ^{228}Ac (408 pCi/g); ^{212}Bi (258 pCi/g); ^{212}Pb (368 pCi/g); ^{208}Tl (157 pCi/g)
S12DS02; S12WS03	White metal piece	Elevated natural thorium (^{232}Th) progeny: ^{228}Ac (1,080 pCi/g); ^{212}Bi (685 pCi/g); ^{212}Pb (1,120 pCi/g); ^{208}Tl (403 pCi/g)
S12DS03; S12WS02	Clump of mud with paint/metal flakes	Radium (^{226}Ra) progeny: ^{214}Bi (2,080 pCi/g); ^{214}Pb (1,470 pCi/g); ^{210}Pb (1,960 pCi/g)
S12WS01	Smear of excavated component	No radionuclides reported as detected.

(1) Bi = bismuth; Pb = lead; Ac = actinium; Tl = thallium.

A discussion of the samples with reported detections appears below:

- S12DS01: This sample consisted of the material identified during the initial baseline scanning survey of the surface footprint Pit C-2. The location was flagged and excavated using shovels - the source material was found approximately six inches below the ground surface. Measurements returned to background levels following its removal.

  Based on the detection of radionuclides associated with both the naturally-occurring uranium and thorium decay series, the material is assumed to be unprocessed. One historical mission of SEDA was the storage of valuable ores, including pitchblende ore (in SEAD-48) and columbite ore (in SEAD-XXX). With the rock's location in the surface soil it is unlikely it was intentionally placed in the area for burial. No additional similar material was found over the course of the excavation and/or screening process.

- S12DS02: This sample was collected from the vicinity several items that had a large white-colored light metal sleeve with above-background radiation levels, and appears to be the same type of material. The results indicate the presence of natural thorium (^{232}Th) progeny. The items themselves were not identified, but thorium alloys with aluminum, magnesium, and other light metals are common in aircraft parts and other components that must maintain structural integrity in high temperatures.

- S12DS03: This sample consisted of a clump of clay with small pieces of metal or paint, apparently from a damaged radium dial or gauge. The detection of three progeny of radium-226 (^{226}Ra) without detections of uranium decay series progeny above ^{226}Ra, such as thorium-234 (^{234}Th) confirm the presence of radium.

To further assist in identification of the radionuclides present in components or debris, a Canberra Inspector 1000 portable multi-channel analyzer (MCA) was brought onsite. The

Inspector 1000 system consisted of a NaI-based detector to allow for quick identification of detected gamma energies. Measurements were conducted on excavated debris using the manufacturer's recommendations. A cesium-137 (^{137}Cs) source was used during the measurement to provide a reference energy (661 keV) to determine potential spectral shift due to temperature or other fluctuations in operating parameters.

3.0 SAMPLING DESIGN

The following subsections describe the requirements for confirmation and final sampling of the excavated soils as well as the excavated pits. The sample protocol was developed using the Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM; NRC 2000).

3.1 Radionuclides of Concern

Based on the results of the quick screen gamma spectroscopy results as well as the onsite screening with the MCA, the primary ROCs for this project are ^{226}Ra and ^{232}Th in equilibrium with progeny. To facilitate analytical requirements, ^{226}Ra will be measured indirectly by the 609 keV gamma emission of its progeny bismuth-214 (^{214}Bi) with an assumption of 50% equilibrium in soil (due to losses resulting from radon gas emanation). Similarly, ^{232}Th will be measured by the 911 keV gamma emission of its progeny actinium-228 (^{228}Ac) under an assumption of 100% equilibrium. Both analyses were performed by gamma spectroscopy, with a required MDC of 0.2 pCi/g.

Background concentrations of ^{226}Ra and ^{232}Th and other naturally-occurring radionuclides were determined using the surface and subsurface data set from the SEAD-63 project conducted in 2004 (Plexus 2005). Unlike SEAD-12, no radioactive items were discovered during the SEAD-63 excavation support. Gamma spectroscopy data for ^{228}Ac, ^{214}Bi, potassium-40 (^{40}K), and thorium-234 (^{234}Th), as well as gross alpha and beta results, were evaluated for statistical outliers and no anomalous data were identified. Therefore, the soils data from SEAD-63 is considered appropriate to use as a background data set. The summary statistics of the evaluated radionuclides are presented in Table 3-1.

Table 3-1. SEAD-12 Soil Background Concentrations

RADIONUCLIDE	NUMBER OF MEASUREMENTS	AVERAGE (pCi/g)(1)	STANDARD DEVIATION (pCi/g)	MINIMUM (pCi/g)	MAXIMUM (pCi/g)
^{214}Bi (^{226}Ra)	35	0.6	0.1	0.0	0.8
^{228}Ac (^{232}Th)	35	1.0	0.2	0.0	1.3
^{40}K	35	25.1	2.1	21.0	29.4
^{234}Th	35	1.0	0.4	0.4	2.1
Gross Alpha	35	11.0	2.5	6.2	20.9
Gross Beta	35	26.5	4.9	12.5	42.6

(1) pCi/g = picocuries per gram.

3.2 Release Criteria

Wide-area derived concentration guideline levels ($DCGL_W$s) were developed by Argonne National Laboratory (ANL) for use during the license termination effort at SEDA in 2003. The License Termination Plan (LTP; ANL 2003) was reviewed and approved by Nuclear Regulatory Commission (NRC) Region I for use in evaluating residual radioactivity levels across SEDA. Pursuant to NRC review comments, a probabilistic analysis of input parameters for the dose modeling code RESRAD was performed. The final $DCGL_W$s correspond to a total effective dose equivalent (TEDE) of 10 millirem per year (mrem/yr). The LTP DCGLs were adopted for use at the SEAD-48 site, and are applicable and appropriate for the SEAD-12 excavation site.

Table 3-2. Soil Release Criteria

RADIONUCLIDE	$DCGL_W$ (pCi/g)[1]
^{226}Ra	1.7
^{232}Th	1.5

To determine compliance with the overall dose limit, the sum of ratios (SOR) is applied to the analytical results using the following equation:

$$SOR_{DCGL_W} = \left(\frac{Conc_{Ra-226}}{DCGL_{Ra-226}} + \frac{Conc_{Th-232}}{DCGL_{Th-232}} \right)$$

An SOR greater than 1 for a given sample indicates the sample results exceed the dose limit.

3.3 Waste Confirmation Sampling

To verify that waste soils do not exceed the release criteria specified in Section 3.2, soil samples were collected. At the time of sampling, the waste soils had been subject to three gamma scanning surveys. In the absence of any positive scanning results, the soil was expected to have no residual contamination present, or residual contamination present at a small fraction of the DCGLs. These conditions meet the definition of a Class 3 survey unit, per MARSSIM Section 2.2. However, as MARSSIM does not define specific sampling requirements for Class 3 survey units, the waste soil was conservatively considered to be a Class 2 survey unit to facilitate the sampling design.

The MARSSIM guidelines for sampling design for a final status survey (FSS) utilizing the Wilcoxon Rank Sum (WRS) test were followed in determining the appropriate number of samples to be collected. The initial step is the determination of the relative shift using the following equation:

$$\text{Relative Shift} = \frac{\Delta}{\sigma} = \frac{DCGLw - LBGR}{\sigma}$$

Using the background data for ^{214}Bi and ^{228}Ac shown in Table 3-1, a combined σ was calculated to be 0.16 pCi/g. Using the SOR and unity rule, the $DCGL_W$ is unity, and the lower bound of the grey region (LBGR) is set to 0.5 as a default value. A relative shift of 3.1 results, and from that

relative shift, the random measurement probability (P_r) is determined to be 0.983039 from MARSSIM Table 5.2.

The following equation (MARSSIM Equation 5-1) was then used to determine the total number of samples in the survey unit/reference area pair:

$$N = \frac{\left(Z_{1-\alpha} + Z_{1-\beta}\right)^2}{3\left(P_r - 0.5\right)^2}$$

The terms $Z_{1-\alpha}$ and $Z_{1-\beta}$ both reflect the desired Type I and II error rates, both set at 0.05. The total number of samples was then divided by two and increased by a factor of 20%, per MARSSIM recommendations. The overall number of samples required per survey unit was calculated to be 10 samples.

To determine the sampling frequency, the maximum surface area of 10,000 square meters (m^2) for a Class 2 survey unit was considered. Assuming a surface soil thickness of 6", the total volume of soil represented by a Class 2 survey unit is equal to 1524 cubic meters (m^3), or 1993 cubic yards (cy). Using the required number of samples calculated above, the sampling frequency is calculated to be 1 per 199 cy. This frequency is consistent with the radiological sampling requirement of 1 sample per 200 cy stipulated in the Work Plan.

3.4 Excavation Confirmation Sampling and Scanning

The limits of excavation for the burial pits were based on the visual identification of bedrock and/or native soils, as well as the absence of any buried debris or scrap. Initially chemical sampling was performed to verify that potential chemical of concern are at acceptable levels. Following receipt and review of chemical results, the excavations will undergo final radiological scanning and sampling consistent with a Class 1 survey unit.

Scanning will consist of measurements with a GPS-enabled Ludlum 44-20 3"x3" NaI with a data logger. The data will be statistically evaluated for outliers and will be plotted to identify spatial trends. Using the methodology described in Section 3.3, the appropriate number of systematic samples within the pits was calculated to be 10 per 2000 m^2 Class 1 survey unit, or 1.1 per 2500 square feet (ft^2). This frequency can be met by utilizing the sampling points from the chemical sampling activity (collected at a frequency of 1 sample per 2500 ft^2) and including an additional biased sample for every 10 systematic samples.

Each sample location will be logged by GPS, and will be subject to both a pre- and post-sampling one-minute scaler count with the 44-20.

ATTACHMENT B

Survey Minimum Detectable Concentration Calculations

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Seneca Army Depot Activity
SEAD-12 Radiological Confirmation Survey Report Attachment B
Ra-226 Scan MDC Calculation

Seneca 3x3 NaI Scan for Ra-226 in equilibrium with progeny @ 1pCi/g, No Soil Cover, 15 cm thick x 28 cm Radius
Fluence rate to exposure rate (FRER, no units) = ~ (1 uR/h)/(Eγ)(u_{en}/ρ)air

TABLE 1		
Energy$_\gamma$, keV	**$(u_{en}/\rho)_{air}$, cm^2/g**	**FRER**
15	1.29	0.0517
20	0.516	0.0969
30	0.147	0.2268
40	0.064	0.3906
50	0.0384	0.5208
60	0.0292	0.5708
80	0.0236	0.5297
100	0.0231	0.4329
150	0.0251	0.2656
200	0.0268	0.1866
300	0.0288	0.1157
400	0.0296	0.0845
500	0.0297	0.0673
600	0.0296	0.0563
800	0.0289	0.0433
1,000	0.0280	0.0357
1,500	0.0255	0.0261
2,000	0.0234	0.0214

Probability of interaction (P) through end of detector for given energy is

Probability = $1-e^{-(\mu/\rho)NaI\ (x)\ (\rho NaI)}$

TABLE 2		
Energy$_\gamma$, keV	$(\mu/\rho)_{NaI}$, cm^2/g	P
15	47.4	1.00
20	22.3	1.00
30	7.45	1.00
40	19.3	1.00
50	10.7	1.00
60	6.62	1.00
80	3.12	1.00
100	1.72	1.00
150	0.625	1.00
200	0.334	1.00
300	0.167	0.99
400	0.117	0.96
500	0.0955	0.93
600	0.0826	0.90
800	0.0676	0.85
1,000	0.0586	0.80
1,500	0.0469	0.73
2,000	0.0413	0.68

for Ludlum 3x3 Model 44-20 7.6 cm dia x 7.6 cm thick NaI crystal use aluminum window per Ludlum ~0.05 inch thick

x = 7.6 cm

ρ = 3.67 g/cm^3

Seneca Army Depot Activity
SEAD-12 Radiological Confirmation Survey Report Attachment B
Ra-226 Scan MDC Calculation

Relative Detector Response (RDR) = relative fluence-to-exposure rate (FRER) times probability (P) of interaction

TABLE 3

$Energy_{\gamma}$, keV	FRER	P	RDR
15	0.0517	1.00	0.0517
20	0.0969	1.00	0.0969
30	0.2268	1.00	0.2268
40	0.3906	1.00	0.3906
50	0.5208	1.00	0.5208
60	0.5708	1.00	0.5708
80	0.5297	1.00	0.5297
100	0.4329	1.00	0.4329
150	0.2656	1.00	0.2656
200	0.1866	1.00	0.1866
300	0.1157	0.99	0.1146
400	0.0845	0.96	0.0812
500	0.0673	0.93	0.0626
600	0.0563	0.90	0.0507
800	0.0433	0.85	0.0367
1,000	0.0357	0.80	0.0287
1,500	0.0261	0.73	0.0191
2,000	0.0214	0.68	0.0146

Estimated Ludlum 44-20 7.6 cm dia x 7.6 cm thick NaI response for Cs-137 is 2700 cpm/uR/hr

Use same methodology and interpolating for Cs-137 response have:

$Energy_{\gamma}$, keV	$(u_{en}/\rho)_{air}$, cm^2/g		
662	0.0294	FRER ~	0.0514
$Energy_{\gamma}$, keV	$(\mu/\rho)_{NaI}$, cm^2/g		
662	0.0780	Probability =	0.89
		RDR =	0.0455

For this detector the response to another energy is based on the ratio of the relative detector response, RDR, to the Cs-137 energy cpm/μR/h, $E_i = (cpm_{cs\text{-}137})*(RDR_{Ei})/(RDR_{Cs\text{-}137})$

TABLE 4

$Energy_{\gamma}$, keV	RDR_{Ei}	Ludlum 44-20 3x3 NaI Detector, E_i, cpm per μR/hr
15	0.0517	3064
20	0.0969	5745
30	0.2268	13445
40	0.3906	23161
50	0.5208	30881
60	0.5708	33842
80	0.5297	31404
100	0.4329	25667
150	0.2656	15748

Seneca Army Depot Activity
SEAD-12 Radiological Confirmation Survey Report Attachment B
Ra-226 Scan MDC Calculation

200	0.1866	11061
300	0.1146	6797
400	0.0812	4816
500	0.0626	3714
600	0.0507	3005
662	0.0455	2700
800	0.0367	2175
1,000	0.0287	1704
1,500	0.0191	1131
2,000	0.0146	867

MDC for Cs-137 energy

Assume 10 μR/hr bkg then have 27,000 cpm

b_i = 450 counts
MDCR = 1756.453244 cpm
$MDCR_{surveyor}$ = 2484 cpm

minimum detectable exposure rate = 0.92 μR/hr

Table 5

keV	MicroShield Exposure Rate, μR/hr (with buildup)	cpm/μR/hr	cpm/μR/hr (weighted)	Percent of NaI detector response
15	0.000E+00	3064	0	0.0%
20	0.000E+00	5745	0	0.0%
30	0.000E+00	13445	0	0.0%
40	0.000E+00	23161	0	0.0%
50	7.508E-05	30881	3	0.1%
60	0.000E+00	33842	0	0.0%
80	3.941E-03	31404	179	7.4%
100	3.566E-05	25667	1	0.1%
150	0.000E+00	15748	0	0.0%
200	8.348E-03	11061	133	5.5%
300	2.616E-02	6797	257	10.6%
400	6.621E-02	4816	461	19.0%
500	3.887E-03	3714	21	0.9%
600	1.247E-01	3005	541	22.3%
800	3.177E-02	2175	100	4.1%
1000	1.283E-01	1704	316	13.0%
1500	1.084E-01	1131	177	7.3%
2000	1.903E-01	867	238	9.8%
Total	6.921E-01		2428	100%

Minimum Detectable Exposure Rate =

MDCR surveyor/(cpm/μr/hr)
1.0231 μr/hr

and MDC for Ra-226 in equilibrium with progeny based on a normalized 1 pCi/g in soil with density of 1.6

Seneca Army Depot Activity
SEAD-12 Radiological Confirmation Survey Report Attachment B
Ra-226 Scan MDC Calculation

Scan MDC = (Assumed MDC Ra-226$_{Conc}$) x (Exposure Rate MDCR$_{Surveyor}$)/(Exposure Rate$_{assumed\ Ra\text{-}226\ Conc}$)

Scan MDC =	1.48	pCi/g
	55	Bq/kg

Seneca Army Depot Activity
SEAD-12 Radiological Confirmation Survey Report Attachment B
Th-232 Scan MDC Calculation

3x3 NaI Scan for Th232 Nat @ 1pCi/g, NO SOIL COVER 15 cm thick x 28 cm RADIUS
Fluence rate to exposure rate (FRER, no units) = ~ (1 uR/h)/(Eγ)(u_{en}/ρ)air

TABLE 1

Energy$_\gamma$, keV	$(u_{en}/\rho)_{air}$, cm^2/g	FRER
40	0.064	0.3906
60	0.0292	0.5708
80	0.0236	0.5297
100	0.0231	0.4329
150	0.0251	0.2656
200	0.0268	0.1866
300	0.0288	0.1157
400	0.0296	0.0845
500	0.0297	0.0673
600	0.0296	0.0563
800	0.0289	0.0433
1,000	0.0280	0.0357
1,500	0.0255	0.0261
2,000	0.0234	0.0214
3,000	0.0205	0.0163

Probability of interaction (P) through end of detector for given energy is

Probability = $1-e^{-(\mu/\rho)NaI\ (x)\ (\rho NaI)}$

TABLE 2

Energy$_\gamma$, keV	$(\mu/\rho)_{NaI}$, cm^2/g	P
40	18.3	1.00
60	6.23	1.00
80	2.86	1.00
100	1.58	1.00
150	0.566	1.00
200	0.302	1.00
300	0.153	0.99
400	0.11	0.95
500	0.0904	0.92
600	0.079	0.89
800	0.0657	0.84
1,000	0.0576	0.80
1,500	0.0464	0.73
2,000	0.0412	0.68
3,000	0.0367	0.64

for Ludlum 3x3 Model 44-20 7.6 cm dia x 7.6 cm thick NaI crystal use aluminum window per Ludlum ~0.05 inch thick

x = 7.6 cm

ρ = 3.67 g/cm^3

Seneca Army Depot Activity
SEAD-12 Radiological Confirmation Survey Report Attachment B
Th-232 Scan MDC Calculation

Relative Detector Response (RDR) = relative fluence-to-exposure rate (FRER) times probability (P) of interaction

TABLE 3

$Energy_{\gamma}$, keV	FRER	P	RDR
40	0.3906	1.00	0.3906
60	0.5708	1.00	0.5708
80	0.5297	1.00	0.5297
100	0.4329	1.00	0.4329
150	0.2656	1.00	0.2656
200	0.1866	1.00	0.1865
300	0.1157	0.99	0.1141
400	0.0845	0.95	0.0805
500	0.0673	0.92	0.0619
600	0.0563	0.89	0.0501
800	0.0433	0.84	0.0363
1,000	0.0357	0.80	0.0286
1,500	0.0214	0.73	0.0155
2,000	0.0214	0.68	0.0146
3,000	0.0163	0.64	0.0104

Estimated Ludlum 44-20 7.6 cm dia x 7.6 cm thick NaI response for Cs-137 is 2700 cpm/uR/hr

Use same methodology and interpolating for Cs-137 response have:

$Energy_{\gamma}$, keV	$(\mu_{en}/\rho)_{air}$, cm^2/g		
662	0.0294	FRER ~	0.0514
$Energy_{\gamma}$, keV	$(\mu_{en}/\rho)_{NaI}$, cm^2/g		
662	0.0780	Probability =	0.89
		RDR =	0.0455

1.59333333

For this detector the response to another energy is based on the ratio of the relative detector response, RDR to the Cs-137 energy
cpm/μR/h, $E_i = (cpm_{cs\text{-}137})*(RDR_{Ei})/(RDR_{Cs\text{-}137})$

TABLE 4

$Energy_{\gamma}$, keV	RDR_{Ei}	Ludlum 44-20 3x3 NaI Detector, E_i, cpm per μR/hr
40	0.3906	23161
60	0.5708	33842
80	0.5297	31404
100	0.4329	25667
150	0.2656	15748
200	0.1865	11059
300	0.1141	6766

Seneca Army Depot Activity
SEAD-12 Radiological Confirmation Survey Report Attachment B
Th-232 Scan MDC Calculation

400	0.0805	4775
500	0.0619	3672
600	0.0501	2970
662	0.0455	2700
800	0.0363	2154
1,000	0.0286	1693
1,500	0.0155	920
2,000	0.0146	865
3,000	0.0104	618

MDC for Cs-137 energy

Assume 10 μR/hr bkg then have 27,000 cpm

b_i = 450 counts
MDCR = 1756.453244 cpm
$MDCR_{surveyor}$ = 2484 cpm

minimum detectable exposure rate = 0.92 μR/hr

Table 5

keV	MicroShield Exposure Rate, μR/hr (with buildup)	cpm/μR/hr	cpm/μR/hr (weighted)	Percent of NaI detector response
40	3.940E-05	23161	1	0.0%
60	6.276E-05	33842	2	0.1%
80	7.070E-03	31404	233	9.9%
100	1.804E-03	25667	49	2.1%
150	2.121E-03	15748	35	1.5%
200	4.115E-02	11059	478	20.2%
300	3.238E-02	6766	230	9.7%
400	4.014E-03	4775	20	0.9%
500	2.958E-02	3672	114	4.8%
600	8.056E-02	2970	251	10.6%
800	1.051E-01	2154	238	10.1%
1000	2.343E-01	1693	416	17.6%
1500	7.503E-02	920	72	3.1%
2000	2.120E-03	865	2	0.1%
3000	3.370E-01	618	219	9.3%
Total	9.523E-01		2361	100%

Minimum Detectable Exposure Rate =

MDCR surveyor/(cpm/μr/hr)
1.0523 μr/hr

Seneca Army Depot Activity
SEAD-12 Radiological Confirmation Survey Report Attachment B
Th-232 Scan MDC Calculation

and MDC for Th232 and 50-year equilibrium progeny based on a normalized 1 pCi/g Th232 in soil with a density of 1.6

Scan MDC = (Assumed $MDC_{Th232\ Conc}$) x (Exposure Rate $MDCR_{Surveyor}$)/(Exposure $Rate_{assumed\ Th\ Conc}$)

Scan MDC =	1.10	pCi/g
	40.9	Bq/kg

ATTACHMENT C

Confirmation Survey and Baseline Risk Assessment Sample Results

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Table C-1A: Pit A/B Confirmation Survey Soil Sample Data

Surface Soil Samples

		Analytical Results		Net Results	
Sample Number	Loc ID / Sample ID	Ra-226 (Bi-214) Result (pCi/g)	Th-232 (Ac-228) Result (pCi/g)	Ra-net	Th-net
1	S12EXFL-N-9-01	1.26	1.07	0.66	0.07
2	S12EXFL-N-9-02	1.10	1.02	0.50	0.02
3	S12EXFL-O-10-01	2.64	0.72	2.04	0.00
4	S12EXSW-N-10-02	0.90	0.00	0.30	0.00
5	S12EXSW-N-9-01	0.93	0.88	0.33	0.00
6	S12EXSW-N-9-02	0.89	0.94	0.29	0.00
7	S12EXSW-O-10-01	0.85	0.81	0.25	0.00
8	S12EXSW-O-9-01	0.85	0.81	0.25	0.00
9	S12EXFL-O-8-01	0.91	0.90	0.31	0.00
10	S12EXSW-O-7-01	1.05	0.00	0.45	0.00
11	S12EXSW-O-8-02	0.88	0.86	0.28	0.00
12	S12EXSW-O-8-03RE2	1.22	1.32	0.62	0.32
13	S12EXSW-O-8-05R	1.04	0.91	0.44	0.00
14	S12EXFL-O-10-03B	0.73	0.81	0.13	0.00
15	S12EXFL-O-8-02B	1.08	1.13	0.48	0.13
16	S12EXSW-N-10-01	1.09	0.96	0.49	0.00
17	S12EXPR-N-10-01	0.80	0.88	0.20	0.00
18	S12EXPR-N-10-02	1.01	0.00	0.41	0.00
19	S12EXPR-N-9-01	1.10	0.86	0.50	0.00
20	S12EXPR-O-10-01	1.00	0.92	0.40	0.00
21	S12EXPR-O-9-01	1.00	0.67	0.40	0.00
22	S12EXPR-O-7-01	1.11	0.97	0.51	0.00
23	S12EXPR-O-8-02	0.88	0.83	0.28	0.00
24	S12EXPR-O-8-03	1.08	0.79	0.48	0.00
25	S12EXPR-O-8-06	0.86	0.78	0.26	0.00
26	S12STOCK-C1-02	1.34	0.00	0.74	0.00
27	S12STOCK-C1-03	1.41	1.07	0.81	0.07
28	S12STOCK-C1-04	1.48	0.62	0.88	0.00
29	S12STOCK-C1-05	1.30	0.00	0.70	0.00
30	S12STOCK-C1-06	1.12	0.94	0.52	0.00

Table C-1A: Pit A/B Confirmation Survey Soil Sample Data

Surface Soil Samples

		Analytical Results		Net Results	
Sample Number	Loc ID / Sample ID	Ra-226 (Bi-214) Result (pCi/g)	Th-232 (Ac-228) Result (pCi/g)	Ra-net	Th-net
31	S12STOCK-C1-07	1.44	0.82	0.84	0.00
32	S12STOCK-C1-08	1.45	1.00	0.85	0.00
33	S12STOCK-C1-09	1.50	0.86	0.90	0.00
34	S12STOCK-C1-10	1.60	1.13	1.00	0.13
35	S12STOCK-C1-11	1.25	0.85	0.65	0.00
	Mean	**1.15**	**0.77**	**0.55**	**0.02**
	Median	**1.08**	**0.86**	**0.48**	**0.00**
	Standard Dev.	**0.34**	**0.35**	**0.34**	**0.06**
	Max	**2.64**	**1.32**	**2.04**	**0.32**
	Min	**0.73**	**0.00**	**0.13**	**0.00**

NOTES:

	0.6	pCi/g Ra-226 (Bi-214)
Soil Bkg.	1.0	pCi/g Th-232 (Ac-228)

Sample IDs are as follows: **S12EXAA-B-B-CC**
The first three characters note the Area of Concern (i.e., SEAD-12).
EX designates that the sample is from an excavation.
AA Designates where in the excavation the sample was collected (FL=floor, SW=sidewall, PR=perimeter of top)
B-B designates the grid where the sample was collected
CC designates the sample number, assigned sequentially
If AA = STOCK, then sample was collected from overburden soils. These soils were used to backfill the pits, and thus, these results are reported along with pit surface results to represent current conditions in the pits.
Highlighted sample IDs are biased samples collected based on elevated gamma walkover survey results.

Results were derived as follows:

$$\frac{WMA}{\left(1-e^{-\lambda t}\right)} = \frac{WMA}{\left(1-e^{(-0.693\ /\ 3.8235^{*}\ 24)\ ^{*}(X\ +1.9117\ ^{*}24}\right)}$$

WMA = The weighted mean activity of ^{214}Bi and ^{214}Pb results, or $\left(\frac{\frac{^{214}Bi}{^{214}Bi_{CSV}} + \frac{^{214}Pb}{^{214}Pb_{CSV}}}{\frac{1}{^{214}Bi_{CSV}} + \frac{1}{^{214}Pb_{CSV}}} \right)$

where CSV is the combined standard variance of the result, calculated as follows: $\left(\frac{^{214}Bi_{TPU\ 95\%UL}}{1.96} \right)^2$

λ = -0.693 divided by 3.8235*24 (the half-life of ^{222}Rn in hours);
t = X (the elapsed in-growth time between the drying and sealing of the sample and the analysis of the sample in hours) plus 1.9117*24 (represents an assumption of 25% equilibrium of ^{222}Rn daughter products at the time of sealing).

Table C-1B: Pit C Confirmation Survey Soil Sample Data

Surface Soil Samples

		Analytical Results		Net Results	
Sample Number	Sample ID	Ra-226 (Bi-214) Result (pCi/g)	Th-232 (Ac-228) Result (pCi/g)	Ra-net	Th-net
1	S12EXFL-B-1-02	1.07	0.98	0.47	0.00
2	S12EXFL-B-2-01	0.77	0.80	0.17	0.00
3	S12EXFL-C-2-01	1.51	0.95	0.91	0.00
4	S12EXFL-E-1-01	0.95	0.80	0.35	0.00
5	S12EXSW-A-2-01	0.96	0.92	0.36	0.00
6	S12EXSW-B-1-01	0.84	0.89	0.24	0.00
7	S12EXSW-B-2-01	0.89	0.56	0.29	0.00
8	S12EXSW-C-1-01	1.19	0.84	0.59	0.00
9	S12EXSW-C-2-01	1.02	0.00	0.42	0.00
10	S12EXSW-D-1-01	1.12	1.00	0.52	0.00
11	S12EXSW-D-2-01	0.82	0.86	0.22	0.00
12	S12EXFL-I-3-01RE	0.77	0.96	0.17	0.00
13	S12EXFL-I-4-01	0.75	0.00	0.15	0.00
14	S12EXFL-J-2-01	0.87	0.74	0.27	0.00
15	S12EXFL-J-4-01	0.79	0.74	0.19	0.00
16	S12EXFL-K-3-01RE	0.94	1.20	0.34	0.20
17	S12EXSW-I-2-01	0.91	0.67	0.31	0.00
18	S12EXSW-I-2-02	1.06	0.00	0.46	0.00
19	S12EXSW-I-3-01RE	0.80	0.84	0.20	0.00
20	S12EXSW-I-3-02	0.76	0.71	0.16	0.00
21	S12EXSW-J-2-01	1.14	0.95	0.54	0.00
22	S12EXSW-J-2-02	0.84	0.76	0.24	0.00
23	S12EXSW-J-3-01	1.02	0.61	0.42	0.00
24	S12EXSW-J-4-01	0.88	0.76	0.28	0.00
25	S12EXSW-J-4-02	0.96	0.64	0.36	0.00
26	S12EXSW-J-4-03	1.26	1.70	0.66	0.70
27	S12EXSW-J-5-01	1.16	1.01	0.56	0.01
28	S12EXSW-K-4-01	0.84	0.82	0.24	0.00
29	S12EXPR-A-2-01	1.04	0.84	0.44	0.00
30	S12EXPR-B-1-01	1.10	0.00	0.50	0.00
31	S12EXPR-B-2-01	1.07	0.83	0.47	0.00
32	S12EXPR-C-1-01	0.89	1.03	0.29	0.03
33	S12EXPR-C-2-01	0.69	0.83	0.09	0.00
34	S12EXPR-D-1-01	1.69	1.52	1.09	0.52
35	S12EXPR-D-2-01	0.85	0.87	0.25	0.00
36	S12EXPR-E-1-01	1.31	0.99	0.71	0.00
37	S12EXPR-I-2-01	1.09	0.72	0.49	0.00
38	S12EXPR-I-2-02	0.95	1.10	0.35	0.10
39	S12EXPR-I-3-01	0.83	0.63	0.23	0.00
40	S12EXPR-I-3-04	0.78	0.00	0.18	0.00
41	S12EXPR-I-4-01	0.86	0.83	0.26	0.00
42	S12EXPR-J-2-01	0.94	0.58	0.34	0.00

Table C-1B: Pit C Confirmation Survey Soil Sample Data

Surface Soil Samples

		Analytical Results		Net Results	
Sample Number	Sample ID	Ra-226 (Bi-214) Result (pCi/g)	Th-232 (Ac-228) Result (pCi/g)	Ra-net	Th-net
43	S12EXPR-J-3-01	1.21	0.95	0.61	0.00
44	S12EXPR-J-4-01	1.23	1.09	0.63	0.09
45	S12EXPR-J-4-02	0.85	0.79	0.25	0.00
46	S12EXPR-J-4-03	0.95	0.84	0.35	0.00
47	S12EXPR-J-4-04	0.73	0.82	0.13	0.00
48	S12EXPR-J-5-01	1.00	0.76	0.40	0.00
49	S12EXPR-K-3-01	0.83	1.06	0.23	0.06
50	S12EXPR-K-4-01	1.01	1.08	0.41	0.08
51	S12EXSW-E-1-01	1.19	1.04	0.59	0.04
52	S12EXSW-K-3-01	1.16	1.09	0.56	0.09
	Mean	**0.98**	**0.81**	**0.38**	**0.04**
	Median	**0.95**	**0.83**	**0.35**	**0.00**
	Standard Dev.	**0.20**	**0.34**	**0.20**	**0.12**
	Max	**1.69**	**1.70**	**1.09**	**0.70**
	Min	**0.69**	**0.00**	**0.09**	**0.00**

NOTES:

	0.6	pCi/g Ra-226 (Bi-214)
Soil Bkg.	1.0	pCi/g Th-232 (Ac-228)

The first three char; Sample IDs are as follows: **S12EXAA-B-B-CC**
EX designates that the sample is from an excavation.
AA Designates where in the excavation the sample was collected (FL=floor, SW=sidewall, PR=perimeter of top)
B-B designates the grid where the sample was collected
CC designates the sample number, assigned sequentially
Highlighted sample IDs are biased samples collected based on elevated gamma walkover survey results.

Results were derived as follows:

$$\frac{WMA}{\left(1-e^{-\lambda t}\right)} = \frac{WMA}{\left(1-e^{(-0.693\ /\ 3.8235*\ 24)*(X+1.9117\ *24}\right)}$$

WMA = The weighted mean activity of ^{214}Bi and ^{214}Pb results, or $\left(\frac{\frac{^{214}Bi}{^{214}Bi_{CSV}}+\frac{^{214}Pb}{^{214}Pb_{CSV}}}{\frac{1}{^{214}Bi_{CSV}}+\frac{1}{^{214}Pb_{CSV}}}\right)$

where CSV is the combined standard variance of the result, calculated as follows: $\left(\frac{^{214}Bi_{TPU\ 95\%UL}}{1.96}\right)^2$

λ = -0.693 divided by 3.8235*24 (the half-life of ^{222}Rn in hours);
t = X (the elapsed in-growth time between the drying and sealing of the sample and the analysis of the sample in hours) plus 1.9117*24 (represents an assumption of 25% equilibrium of ^{222}Rn daughter products at the time of sealing).

Table C-2A: Baseline Risk Assessment Disposal Pit A/B Soil Samples

FACILITY		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID		SB12-2		SB12-2		SB12-2		SB12-4		TP12-1C		TP12-2B		TP12-2C		SS12-168		SS12-169	
SAMPLE ID		123113		12533		123114		12529		123144		123146		123147		123363		123396	
DEPTH TO TOP OF SAMPLE		6		8		10		4		6		3.5		6		0		0	
DEPTH TO BOTTOM OF SAMPLE		8		10		12		6		6		3.5		6		0.2		0.2	
PARAMETER	UNIT	N		N		N		N		N		N		N		N		N	
Actinium-228	pCi/g																		
Bismuth-214	pCi/g	1.3		1.5	U	1.5		1.7		1.9	J	1.9	J	2.2	J	1.3		1.2	
Cesium-137	pCi/g	0.2		0.2	U	0.2		0.1	U	0.3		0.2		0.3		0.1	U	1	
Cobalt-57	pCi/g	0.1		0.1	U	0.1		0.1	U	0.1		0.1	U	0.1	U	0.2		0.1	U
Cobalt-60	pCi/g	0.6	J	0.3	U	0.4	J	0.2	U	0.6	J	0.2	J	0.2	J	0.1	U	0.1	U
Gross Alpha	pCi/g																		
Gross Beta	pCi/g																		
Lead-210	pCi/g	4.5	J	40.8	U	5	J	3.7	U	4.2		5.5		5.9		5.1		29.5	UJ
Lead-211	pCi/g	0.8	UJ	5.4	U	1.6	UJ	9.1	U	1.8	UJ	5.3	J	1.9	UJ	3.3	U	1.9	U
Lead-214	pCi/g	1.2		1.1		1.4		1.5		1.9		1.5		1.5		1.8		1.5	
Plutonium-239/240	pCi/g	0.1	U	0.2		0.1	U	0.2	UJ	0.1	U	0.1	U	0.1	U	0.1	UJ	0.2	UJ
Promethium-147	pCi/g	3.9	UJ			3	UJ												
Radium-223	pCi/g	0.7		0.3	U	2.1		0.4	U	0.5	U	0.5	U	0.5	U	0.5	U	0.4	U
Radium-226	pCi/g	1.3		1.5	U	1.5		1.7		1.9	J	1.9	J	2.2	J	1.3		1.2	J
Radium-228	pCi/g	1.6	J	1.6		2.1	J	1.8		2.3		1.9		1.4		1.5		1.7	
Thallium-208	pCi/g																		
Thorium-227	pCi/g			0.3	UJ			0.1	UJ										
Thorium-230	pCi/g	1	U	0.6	J	0.8	U	1	UJ	0.8	J	0.9	J	0.6	UJ	1.2	U	0.9	U
Thorium-232	pCi/g	0.9		1.1	J	0.7		0.5	UJ	0.8	J	0.7	J	0.9	J	1.2		0.8	
Thorium-234	pCi/g																		
Tritium	pCi/g	0.1	UJ	0.1	UJ	0.1	UJ	0.1	U	0.1	U	0.1	U	0.1	U	21.9	J	5.6	J
Uranium-233/234	pCi/g	0.7		0.7		0.5	U	0.6	UJ	0.8		0.6		0.6	J	0.6	J	0.4	J
Uranium-235	pCi/g	0.1	U	0.1		0.1	U	0.1	UJ	0.1	U	0.1		0.1	U	0.2	U	0.2	UJ
Uranium-238	pCi/g	0.8		0.6		0.7		0.4	UJ	0.6	J	0.8	J	0.6	J	0.6		0.6	

Table C-2A: Baseline Risk Assessment Disposal Pit A/B Soil Samples

FACILITY		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID		SS12-169		SS12-170		SS12-172		SS12-173		SS12-174		SS12-175		SS12-176		SS12-177		SS12-178		SS12-179		SS12-180	
SAMPLE ID		123364		123365		123366		123367		123368		123369		123370		123371		123372		123373		123374	
DEPTH TO TOP OF SAMPLE		0		0		0		0		0		0		0		0		0		0		0	
DEPTH TO BOTTOM OF SAMPLE		0.2		0.2		0.2		0.2		0.2		0.2		0.2		0.2		0.2		0.2		0.2	
PARAMETER	UNIT	N		N		N		N		N		N		N		N		N		N		N	
Actinium-228	pCi/g																						
Bismuth-214	pCi/g	1.7		1.8		1	J	2.5		1.4		1.7		1.3		2		1.8		1.4		1.3	
Cesium-137	pCi/g	1.2		0.1	UJ	0.8		1.3		0.8		1.2	J	0.7	J	0.9	J	0.7		0.3	J	0.4	J
Cobalt-57	pCi/g	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
Cobalt-60	pCi/g	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
Gross Alpha	pCi/g																						
Gross Beta	pCi/g																						
Lead-210	pCi/g	5.1	J	23.8	UJ	36	U	6.3		33.2	U	4.1	J	3.7	J	5.9		24.1	U	38.6	J	3.5	J
Lead-211	pCi/g	2	UJ	0.9	U	7.4	J	2.7	U	2	U	3.1	U	3.7	U	2	U	1.6	U	0.8	U	1.6	U
Lead-214	pCi/g	1.5		1.6		1.3	J	1.7		1.2		1.6		1.9		2.6		1.8		1.2		1.6	
Plutonium-239/240	pCi/g	0.1	UJ	0.1		0.1		0.2	UJ	0.2	UJ	0.1		0.1		0.1	U	0.3	UJ	0.1		0.1	U
Promethium-147	pCi/g																						
Radium-223	pCi/g	0.4	U	0.5	U	0.4		0.6	U	0.4	U	0.4	U	0.4	U	0.5	U	0.5	U	0.4	U	0.3	U
Radium-226	pCi/g	1.7	J	1.8		1	J	2.5		1.4		1.7		1.3		2		1.8		1.4		1.3	
Radium-228	pCi/g	1.5		1.5		1.7	J	2.5		1.4		1.9		1		1.5		1.4		1.6		1.4	
Thallium-208	pCi/g																						
Thorium-227	pCi/g																						
Thorium-230	pCi/g	0.7	UJ	1.1	J	1.4	U	1	U	0.9	U	1.2	J	0.5	U	1.1		1.2	U	1.4	J	0.9	
Thorium-232	pCi/g	0.8	J	0.9	J	0.7		0.7		0.9		0.8	J	0.8		1		0.8		1.5	J	0.7	
Thorium-234	pCi/g																						
Tritium	pCi/g	11.1		2	J	53.3		3.1	J	3.9	J	0.1	UJ	1	J	0.8		4.7	J	0.2	J	19.4	J
Uranium-233/234	pCi/g	0.6	J	0.6		0.5		0.6	J	0.5	J	0.4		0.5	J	0.5	U	1	J	1		0.8	
Uranium-235	pCi/g	0.1	J	0.1	U	0.1	U	0.2	U	0.1	J	0.1	U	0.1	U	0.1	U	0.2		0.1	U	0.1	U
Uranium-238	pCi/g	0.5	J	0.6	J	0.6		0.8		0.7	J	0.6	J	0.5	J	1		1		0.9	J	0.7	J

Table C-2A: Baseline Risk Assessment Disposal Pit A/B Soil Samples

FACILITY		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID		SS12-181		SS12-184		SS12-189		SS12-192		SS12-193		SS12-194		SS12-195		SS12-196		SS12-197		SS12-198		SS12-199		SS12-200	
SAMPLE ID		123375		123378		123383		123386		123387		123388		123389		123390		123391		123392		123393		123394	
DEPTH TO TOP OF SAMPLE		0		0		0		0		0		0		0		0		0		0		0		0	
DEPTH TO BOTTOM OF SAMPLE		0.2		0.2		0.2		0.2		0.2		0.2		0.2		0.2		0.2		0.2		0.2		0.2	
PARAMETER	UNIT	N		N		N		N		N		N		N		N		N		N		N		N	
Actinium-228	pCi/g																								
Bismuth-214	pCi/g	2.1		1.2		1.5		1.1		3.1		1.3		1.5	J	1.5		1.2		1.1		1.6		1.9	
Cesium-137	pCi/g	0.1	U	0.4	J	0.1	UJ	0.1	UJ	0.6	J	0.1	UJ	0.1	U	0.5	J	0.5	J	0.5	J	0.5	J	1	J
Cobalt-57	pCi/g	0.1		0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.2		0.1	U	0.1	U	0.1	U	0.1	U	0.1	
Cobalt-60	pCi/g	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
Gross Alpha	pCi/g																								
Gross Beta	pCi/g																								
Lead-210	pCi/g	2.9		15.4	UJ	5		29.8	UJ	2.5	U	21.8	U	39.1	U	3.4	J	24.2	UJ	3.7	J	26.2	UJ	3.3	J
Lead-211	pCi/g	3.1	U	1.1	U	9.6		1.6	U	4.7		0.8	U	2.7	UJ	2.2	U	0.6	U	2.7	U	4.3		0.8	U
Lead-214	pCi/g	1.5		1.4		2.1		1.1		2.8		1.5		1.2	J	1.6		1.3		1.3		1.2		1.5	
Plutonium-239/240	pCi/g	0.2	UJ	0.2	U	0.2	U	0.2	U	0.2	U	0.1	U	0.2	U	0.2	U	0.1		0.1	U	0.1		0.2	U
Promethium-147	pCi/g																								
Radium-223	pCi/g	0.5	U	0.3	U	0.4	U	0.3	U	0.5	U	0.4	U	0.5	U	0.4	U	0.4	U	0.4	U	0.3	U	0.4	U
Radium-226	pCi/g	2.1		1.2		1.5		1.1		3.1		1.3		1.5	J	1.5		1.2		1.1		1.6		1.9	
Radium-228	pCi/g	2.2		1.6		2		2		1.9		3.2		1.6	J	1.6		1.6		1.3		1.4		1.4	
Thallium-208	pCi/g																								
Thorium-227	pCi/g																								
Thorium-230	pCi/g	0.7	U	1		1.4		1.1	J	0.9		0.9		1	U	1.3		0.9	J	1.2		1.3	J	1.2	J
Thorium-232	pCi/g	0.7		0.7		1.1		0.9	J	1		0.6		0.7		0.7		0.9	J	0.6		1.4	J	1.3	J
Thorium-234	pCi/g																								
Tritium	pCi/g	5.5	J	1.5	J	0.1	U	0.1	UJ	0.1	U	0.1	U	20.5		0.1	UJ	0.1	UJ	24.1	J	1.9	J	0.5	J
Uranium-233/234	pCi/g	0.5	J	0.6		0.7		0.6		0.5	U	0.6	UJ	0.5		0.4	J	0.9		0.6		0.6		0.6	
Uranium-235	pCi/g	0.3		0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	J	0.1	U	0.1	U	0.1		0.1	
Uranium-238	pCi/g	0.6		0.5	J	0.7		0.7	J	0.3		0.6	J	0.7		0.6	J	0.6	J	0.6	J	0.6	J	0.8	J

Table C-2B: Baseline Risk Assessment Disposal Pit C Soil Samples

FACILITY		SEAD-12			SEAD-12			SEAD-12			SEAD-12			SEAD-12			SEAD-12			SEAD-12		
LOCATION ID		TP12-5C			TP12-6A			TP12-6B			TP12-6C			TP12-23C			SS12-147			SS12-148		
SAMPLE DATE		123091			123158			123159			123160			123141			123342			123343		
DEPTH TO TOP OF SAMPLE		8			2.5			3			3.5			3			0			0		
DEPTH TO BOTTOM OF SAMPLE		8			2.5			3			3.5			3			0.2			0.2		
PARAMETER	UNIT	N			N			N			N			VALUE	(Q)	error	N			N		
Actinium-228	pCi/g																					
Bismuth-214	pCi/g	1.9		+/-0.5	1.7		+/-0.4	2		+/-0.3	1.7		+/-0.5	1.7	J	+/-0.5	1.8		+/-0.5	1.8	J	+/-0.5
Cesium-137	pCi/g	0.1	UJ		0.6		+/-0.3	0.7		+/-0.2	0.2	U		0.6		+/-0.3	0.1	UJ		0.8		+/-0.2
Cobalt-57	pCi/g	0.1		+/-0.1	0.1	U		0.1	U		0.1		+/-0.1	0.1		+/-0.1	0.1	U		0.1	U	
Cobalt-60	pCi/g	0.2		+/-0.1	0.5	J	+/-0.1	0.4	J	+/-0.1	0.3	J	+/-0.1	0.4	J	+/-0.1	0.1	U		0.1	U	
Gross Alpha	pCi/g																					
Gross Beta	pCi/g																					
Lead-210	pCi/g	2.9	J	+/-2.1	1.9		+/-1.6	5.8		+/-2.7	2.3		+/-1.5	3.1		+/-1.7	20.8	U		19	U	
Lead-211	pCi/g	11.9	J	+/-6.6	1.3	UJ		1.7	UJ		0.9	UJ		12	J	+/-3.5	0.9	U		1.3	UJ	
Lead-214	pCi/g	1.6		+/-0.4	1.4		+/-0.4	1.9		+/-0.4	1.4		+/-0.4	1.5		+/-0.4	1.2		+/-0.3	1.1	J	+/-0.3
Plutonium-239/24	pCi/g	0.1	J	+/-0.1	0.1	U	+/-0.1	0.1	U	+/-0.1	0.1	U	+/-0.1	0.1	U	+/-0.1	0.2	U	+/-0.1	0.1		+/-0.1
Promethium-147	pCi/g																					
Radium-223	pCi/g	0.5	U		0.5	U		0.4	U		0.5	U		0.5	U		0.4	U		0.5	U	
Radium-226	pCi/g	1.9		+/-0.5	1.7		+/-0.4	2		+/-0.3	1.7		+/-0.5	1.7	J	+/-0.5	1.8		+/-0.5	1.8	J	+/-0.5
Radium-228	pCi/g	2.4		+/-0.5	2		+/-0.6	1.4		+/-0.5	2		+/-0.4	2		+/-0.7	1.5		+/-0.4	2.5	J	+/-0.6
Thallium-208	pCi/g																					
Thorium-230	pCi/g	0.8	UJ	+/-0.4	0.8	J	+/-0.3	1	J	+/-0.4	0.9	J	+/-0.3	1.1	J	+/-0.4	0.7	U	+/-0.3	1	U	+/-0.3
Thorium-232	pCi/g	0.9	J	+/-0.4	0.8		+/-0.3	0.8		+/-0.3	0.9		+/-0.3	1.2	J	+/-0.4	0.8		+/-0.3	0.7		+/-0.3
Thorium-234	pCi/g																					
Tritium	pCi/g	0.1	U	+/-0.1	2.1		+/-0.1	0.1	U	+/-0.1	0.1		+/-0.1	0.2		+/-0.1	0.2		+/-0.1	87.4		+/-0.5
Uranium-234	pCi/g	0.8		+/-0.3	0.5	J	+/-0.2	0.7		+/-0.2	0.4	J	+/-0.2	0.9		+/-0.3	0.8	U	+/-0.3	0.9		+/-0.3
Uranium-235	pCi/g	0.1		+/-0.1	0.1	U	+/-0.1	0.1	U	+/-0.1	0.1	U	+/-0.1	0.1	U	+/-0.1	0.2		+/-0.1	0.1	U	+/-0.1
Uranium-238	pCi/g	0.6		+/-0.2	0.7	J	+/-0.2	0.8	J	+/-0.3	0.6	J	+/-0.2	1	J	+/-0.3	0.6		+/-0.3	0.8		+/-0.3

Table C-2B: Baseline Risk Assessment Disposal Pit C Soil Samples

FACILITY		SEAD-12			SEAD-12			SEAD-12			SEAD-12			SEAD-12			SEAD-12			SEAD-12			SEAD-12		
LOCATION ID		SS12-149			SS12-150			SS12-151			SS12-152			SS12-153			SS12-154			SS12-155			SS12-155		
SAMPLE DATE		123344			123345			123346			123347			123348			123349			123350			123479		
DEPTH TO TOP OF SAMPLE		0			0			0			0			0			0			0			0		
DEPTH TO BOTTOM OF SAMPLE		0.2			0.2			0.2			0.2			0.2			0.2			0.2			0.2		
PARAMETER	UNIT	N			N			N			N			N			VALUE	(Q)	error	N			N		
Actinium-228	pCi/g																								
Bismuth-214	pCi/g	1.5		+/-0.2	2.3	J	+/-0.4	1.8		+/-0.5	1		+/-0.2	1.7		+/-0.4	1.3		+/-0.3	1.9	J	+/-0.4	1.2	J	+/-0.3
Cesium-137	pCi/g	0.1	U		0.1	U		1		+/-0.2	0.7		+/-0.1	0.1	U		0.5		+/-0.3	0.1	U		0.1	U	
Cobalt-57	pCi/g	0.1	U		0.1		+/-0.1	0.1		+/-0.1	0.1	U		0.1	U		0.1	U		0.1		+/-0.1	0.1	U	
Cobalt-60	pCi/g	0.1	U		0.1	U		0.1	U		0.1	U		0.1	U		0.1	U		0.1	U		0.1	U	
Gross Alpha	pCi/g																								
Gross Beta	pCi/g																								
Lead-210	pCi/g	1.2	U		4.1		+/-3.6	5		+/-2.1	27.8	U		2.2		+/-1.5	4.1		+/-2	31.7	U		25.5	J	+/-25.2
Lead-211	pCi/g	2.6	U		20.3	J	+/-4.7	1.5	U		0.6	U		2	U		3.1	U		3	UJ		1.7	UJ	
Lead-214	pCi/g	1.7		+/-0.4	2	J	+/-0.4	1.4		+/-0.5	1		+/-0.3	1.3		+/-0.3	1.5		+/-0.3	1.9	J	+/-0.4	1.3		+/-0.2
Plutonium-239/24	pCi/g	0.1	U	+/-0.1	0.1	U	+/-0.1	0.1	UJ	+/-0.1	0.1	UJ	+/-0.1	0.1	UJ	+/-0.1	0.2	UJ	+/-0.1	0.1		+/-0.1	0.2	U	+/-0.1
Promethium-147	pCi/g																								
Radium-223	pCi/g	0.5	U		0.6	U		0.4	U		1.5		+/-0.3	0.4	U		0.4	U		0.6	U		0.4	U	
Radium-226	pCi/g	1.5		+/-0.2	2.3	J	+/-0.4	1.8		+/-0.5	1		+/-0.2	1.7		+/-0.4	1.3		+/-0.3	1.9	J	+/-0.4	1.2	J	+/-0.3
Radium-228	pCi/g	2.4		+/-0.5	0.1	UJ		2		+/-0.4	1.7		+/-0.4	1.4		+/-0.4	1.7		+/-0.6	1.6	J	+/-0.6	1.8	J	+/-0.5
Thallium-208	pCi/g																								
Thorium-230	pCi/g	1.1	UJ	+/-0.6	1.1	U	+/-0.4	0.5	UJ	+/-0.3	1.5	UJ	+/-0.6	0.8	U	+/-0.4	1.1	U	+/-0.4	1.3	U	+/-0.4	0.8		+/-0.3
Thorium-232	pCi/g	1.3	J	+/-0.6	1		+/-0.3	1.2	J	+/-0.5	1.1	J	+/-0.5	0.6	U	+/-0.3	0.8		+/-0.3	1.1		+/-0.4	0.8		+/-0.3
Thorium-234	pCi/g																								
Tritium	pCi/g	1.6		+/-0.1	11.1		+/-0.2	4.5		+/-0.1	4.7		+/-0.2	0.1		+/-0.1	11.9	J	+/-0.2	6.4		+/-0.1	6.8	J	+/-0.1
Uranium-234	pCi/g	0.6	U	+/-0.2	0.8		+/-0.3	0.7	J	+/-0.2	0.6	U	+/-0.2	0.6		+/-0.2	0.9	J	+/-0.4	1		+/-0.3	0.9		+/-0.3
Uranium-235	pCi/g	0.1	U	+/-0.1	0.1		+/-0.1	0.1	J	+/-0.1	0.1	U	+/-0.1	0.1	U	+/-0.1	0.2	U	+/-0.1	0.1	U	+/-0.1	0.1	U	+/-0.1
Uranium-238	pCi/g	0.8	J	+/-0.3	1		+/-0.3	0.7	J	+/-0.2	0.8	J	+/-0.2	0.6	J	+/-0.2	1		+/-0.4	1		+/-0.3	1	J	+/-0.3

Table C-2B: Baseline Risk Assessment Disposal Pit C Soil Samples

FACILITY		SEAD-12			SEAD-12			SEAD-12			SEAD-12			SEAD-12			SEAD-12			SEAD-12			SEAD-12			SEAD-12		
LOCATION ID		SS12-156			SS12-157			SS12-158			SS12-159			SS12-160			SS12-161			SS12-162			SS12-163		
SAMPLE DATE		123351			123352			123353			123354			123355			123356			123357			123358		
DEPTH TO TOP OF SAMPLE		0			0			0			0			0			0			0			0		
DEPTH TO BOTTOM OF SAMPLE		0.2			0.2			0.2			0.2			0.2			0.2			0.2			0.2		
PARAMETER	UNIT	N			N			N			N			N			N			N			N		
Actinium-228	pCi/g																								
Bismuth-214	pCi/g	1.1		+/-0.2	1.4		+/-0.4	5.8	J	+/-0.8	1.8		+/-0.4	2.5		+/-0.5	1.1		+/-0.3	1.3		+/-0.4	1.2		+/-0.3
Cesium-137	pCi/g	0.1	U		0.3		+/-0.1	1		+/-0.3	0.1	UJ		0.6	J	+/-0.3	0.9		+/-0.2	0.7		+/-0.3	0.7		+/-0.2
Cobalt-57	pCi/g	0.1		+/-0.1	0.1	U		0.1	U		0.1	U		0.1	U		0.1	U		0.1	U		0.1	U	
Cobalt-60	pCi/g	0.1	U		0.1	U		0.1	U		0.1	U		0.1	U		0.1	U		0.1	U		0.1	U	
Gross Alpha	pCi/g																								
Gross Beta	pCi/g																								
Lead-210	pCi/g	24.2	U		4.4		+/-2.7	4.7		+/-4.5	33.5	U		2.2	U		43.3		+/-27.1	2.9		+/-1.8	19.9	U	
Lead-211	pCi/g	0.7	U		2.8	U		5.7	J	+/-5.3	2.5	U		2.4	U		1.5	U		2.4	U		1.3	U	
Lead-214	pCi/g	0.9		+/-0.2	2		+/-0.4	3.4	J	+/-0.6	1.3		+/-0.2	2.6		+/-0.5	1.2		+/-0.3	1.4		+/-0.3	1.1		+/-0.2
Plutonium-239/24	pCi/g	0.3	UJ	+/-0.1	0.2	UJ	+/-0.1	0.1		+/-0.1	0.1	U	+/-0.1	0.2	U	+/-0.1	0.1	UJ	+/-0.1	0.2	UJ	+/-0.1	0.1	UJ	+/-0.1
Promethium-147	pCi/g																								
Radium-223	pCi/g	0.3	U		0.5	U		0.6	U		0.5	U		0.5	U		0.5	U		0.4	U		0.3	U	
Radium-226	pCi/g	1.1		+/-0.2	1.4		+/-0.4	5.8	J	+/-0.8	1.8		+/-0.4	2.5		+/-0.5	1.1		+/-0.3	1.3		+/-0.4	1.2		+/-0.3
Radium-228	pCi/g	1.6		+/-0.4	2.4		+/-0.5	2.7	J	+/-0.6	2		+/-0.5	2.5		+/-0.6	2		+/-0.6	2.1		+/-0.4	2.1		+/-0.4
Thallium-208	pCi/g																								
Thorium-230	pCi/g	0.9	U	+/-0.4	1.3	U	+/-0.4	1	U	+/-0.3	1.4	U	+/-0.5	1	U	+/-0.3	0.9	U	+/-0.4	1.3	UJ	+/-0.6	1.2	UJ	+/-0.6
Thorium-232	pCi/g	1		+/-0.4	1		+/-0.3	0.9		+/-0.3	1.2		+/-0.4	1		+/-0.3	0.9		+/-0.4	0.8	J	+/-0.4	1	J	+/-0.5
Thorium-234	pCi/g																								
Tritium	pCi/g	0.1	U	+/-0.1	0.1	J	+/-0.1	0.3		+/-0.1	1.1		+/-0.1	1.3		+/-0.1	1.3		+/-0.1	0.1	U	+/-0.1	0.4		+/-0.1
Uranium-234	pCi/g	0.3	J	+/-0.3	0.6	J	+/-0.3	0.8		+/-0.3	1	U	+/-0.3	0.9	U	+/-0.3	0.8	J	+/-0.3	0.7		+/-0.2	0.7	J	+/-0.2
Uranium-235	pCi/g	0.2		+/-0.2	0.2	U	+/-0.1	0.1		+/-0.1	0.1		+/-0.1	0.1		+/-0.1	0.1	U	+/-0.1	0.1	U	+/-0.1	0.1	J	+/-0.1
Uranium-238	pCi/g	0.8		+/-0.4	0.6		+/-0.3	1		+/-0.3	0.5		+/-0.2	0.7		+/-0.3	0.9	J	+/-0.3	0.6	UJ	+/-0.2	0.7	J	+/-0.2

Table C-2B: Baseline Risk Assessment Disposal Pit C Soil Samples

FACILITY		SEAD-12			SEAD-12			SEAD-12			SEAD-12			SEAD-12			SEAD-12			SEAD-12			SEAD-12			SEAD-12		
LOCATION ID		SS12-164			SS12-165			SS12-166			SS12-201			SS12-201			SS12-202			SS12-203			SS12-204			SS12-205		
SAMPLE DATE		123359			123360			123361			123430			123395			123397			123398			123399			123400		
DEPTH TO TOP OF SAMPLE		0			0			0			0			0			0			0			0			0		
DEPTH TO BOTTOM OF SAMPLE		0.2			0.2			0.2			0.2			0.2			0.2			0.2			0.2			0.2		
PARAMETER	UNIT	VALUE	(Q)	error	N			N			N			N			N			N			N			N		
Actinium-228	pCi/g																											
Bismuth-214	pCi/g	1.7		+/-0.3	2		+/-0.5	1.5		+/-0.4	1.4		+/-0.3	1.5		+/-0.4	1.6		+/-0.5	1		+/-0.6	2		+/-0.5	1.4		+/-0.4
Cesium-137	pCi/g	0.1	U		0.1	UJ		0.9		+/-0.2	0.7	J	+/-0.2	0.8	J	+/-0.2	0.3	J	+/-0.1	0.4	J	+/-0.1	0.3	J	+/-0.2	0.1	UJ	
Cobalt-57	pCi/g	0.1	U		0.1	U		0.1	U		0.1	U		0.1	U		0.1	U		0.1	U		0.1	U		0.1	U	
Cobalt-60	pCi/g	0.1	U		0.1	U		0.1	U		0.1	U		0.1	U		0.1	U		0.1	U		0.1	U		0.1	U	
Gross Alpha	pCi/g																											
Gross Beta	pCi/g																											
Lead-210	pCi/g	16.4	U		1.6	U		2.8		+/-2	17.8	UJ		2.4	J	+/-2.3	20.8	U		1.6	U		1.2	U		53.9		+/-49
Lead-211	pCi/g	2.2	U		1.4	U		2	U		0.9	U		3.1	U		2.5	U		2.4	U		10.3		+/-3.5	3.1	U	
Lead-214	pCi/g	1.3		+/-0.4	2		+/-0.4	1.2		+/-0.3	1.1		+/-0.3	1.6		+/-0.5	1.4		+/-0.3	1.3		+/-0.3	1.2		+/-0.3	1.3		+/-0.3
Plutonium-239/24	pCi/g	0.2	UJ	+/-0.1	0.1	U	+/-0.1	0.1	UJ	+/-0.1	0.1		+/-0.1	0.1	U	+/-0.1	0.1	U	+/-0.1	0.1	U	+/-0.1	0.2	U	+/-0.1	0.1	U	+/-0.1
Promethium-147	pCi/g																											
Radium-223	pCi/g	0.4	U		0.5	U		0.4	U		0.4	U		0.5	U		0.4	U		0.4	U		0.4	U		0.4	U	
Radium-226	pCi/g	1.7		+/-0.3	2		+/-0.5	1.5		+/-0.4	1.4		+/-0.3	1.5		+/-0.4	1.6		+/-0.5	1		+/-0.6	2		+/-0.5	1.4		+/-0.4
Radium-228	pCi/g	0.1	U		2.4		+/-0.5	1.2		+/-0.3	1.9		+/-0.6	2.3		+/-0.5	1.7		+/-0.5	1.1		+/-0.5	1.2		+/-0.5	1.8		+/-0.4
Thallium-208	pCi/g																											
Thorium-230	pCi/g	1.3		+/-0.5	0.9	U	+/-0.3	1.1	U	+/-0.4	1.3	J	+/-0.5	0.6	J	+/-0.3	0.6		+/-0.3	0.7		+/-0.3	0.8		+/-0.3	1.1		+/-0.4
Thorium-232	pCi/g	0.9		+/-0.4	0.7		+/-0.3	0.9		+/-0.4	0.8		+/-0.3	1		+/-0.4	1.2		+/-0.4	0.9		+/-0.3	0.7		+/-0.3	0.9		+/-0.3
Thorium-234	pCi/g																											
Tritium	pCi/g	3.7	J	+/-0.1	4.9		+/-0.1	0.1	U	+/-0.1	0.1	UJ	+/-0.1	0.2	J	+/-0.1	0.1	U	+/-0.1	0.1	U	+/-0.1	0.1	U	+/-0.1	0.1	U	+/-0.1
Uranium-234	pCi/g	1	J	+/-0.5	0.8	U	+/-0.3	0.7	U	+/-0.3	0.6	U	+/-0.2	0.8	J	+/-0.2	0.8		+/-0.3	0.6	U	+/-0.2	0.6	U	+/-0.2	0.7	J	+/-0.3
Uranium-235	pCi/g	0.1		+/-0.1	0.1		+/-0.1	0.1		+/-0.1	0.1	U	+/-0.1	0.1	UJ	+/-0.1	0.1	U	+/-0.1	0.1	U	+/-0.1	0.1	U	+/-0.1	0.1	UJ	+/-0.1
Uranium-238	pCi/g	0.8		+/-0.4	1		+/-0.4	0.6	J	+/-0.2	0.7		+/-0.2	0.7	J	+/-0.2	1		+/-0.3	0.6		+/-0.2	0.9		+/-0.3	0.7	J	+/-0.2

Table C-2B: Baseline Risk Assessment Disposal Pit C Soil Samples

FACILITY		SEAD-12			SEAD-12			SEAD-12			SEAD-12			SEAD-12			SEAD-12			SEAD-12			SEAD-12			SEAD-12		
LOCATION ID		SS12-206			SS12-207			SS12-211			SS12-212			SS12-213			SS12-214			SS12-218			SS12-219			SS12-225		
SAMPLE DATE		123401			123402			123406			123407			123408			123409			123413			123414			123420		
DEPTH TO TOP OF SAMPLE		0			0			0			0			0			0			0			0			0		
DEPTH TO BOTTOM OF SAMPLE		0.2			0.2			0.2			0.2			0.2			0.2			0.2			0.2			0.2		
PARAMETER	UNIT	N			N			N			N			N			N			N			N			N		
Actinium-228	pCi/g																											
Bismuth-214	pCi/g	1.7		+/-0.5	2.6	J	+/-0.5	1.3	J	+/-0.3	1.7		+/-0.4	1.6	J	+/-0.3	1.6	J	+/-0.3	1.7	J	+/-0.3	1.8		+/-0.3	1.4		+/-0.5
Cesium-137	pCi/g	0.3	J	+/-0.2	0.1	U		0.1	U		0.1	UJ		0.1	U		0.1	U		0.1	U		0.1	U		1		+/-0.3
Cobalt-57	pCi/g	0.1	U		0.1	U		0.1	U		0.1	U		0.1	U		0.1		+/-0.1	0.1	U		0.1	U		0.1	U	
Cobalt-60	pCi/g	0.1	U		0.1	U		0.1	U		0.1	U		0.1	U		0.1	U		0.1	U		0.1	U		0.1	U	
Gross Alpha	pCi/g																											
Gross Beta	pCi/g																											
Lead-210	pCi/g	5.9		+/-3.6	4.6		+/-2.2	21.5	UJ		1.9	U		34.5	UJ		38.1	UJ		68.9		+/-47.5	32.7	UJ		8.7	J	+/-4
Lead-211	pCi/g	2.9	U		3.5	UJ		1.6	U		2.7	U		4.3		+/-1.9	2.8	U		1.1	UJ		0.8	U		7.2		+/-5.9
Lead-214	pCi/g	1.6		+/-0.4	2.1	J	+/-0.5	1.1	J	+/-0.2	1.6		+/-0.4	1	J	+/-0.3	1.3	J	+/-0.3	1.5	J	+/-0.3	1.2		+/-0.3	2.3		+/-0.5
Plutonium-239/24	pCi/g	0.4	UJ	+/-0.1	0.2		+/-0.1	0.1	U	+/-0.1	0.2	U	+/-0.1	0.2	U	+/-0.1	0.2	U	+/-0.1	0.2		+/-0.1	0.1	U	+/-0.1	0.2	UJ	+/-0.2
Promethium-147	pCi/g																											
Radium-223	pCi/g	0.5	U		0.5	U		0.4	UJ		0.5	U		0.4	UJ		0.3	UJ		0.4	U		0.4	U		0.6	U	
Radium-226	pCi/g	1.7		+/-0.5	2.6	J	+/-0.5	1.3	J	+/-0.3	1.7		+/-0.4	1.6	J	+/-0.3	1.6	J	+/-0.3	1.7	J	+/-0.3	1.8		+/-0.3	1.4		+/-0.5
Radium-228	pCi/g	1.5		+/-0.5	2.2	J	+/-0.5	1.8		+/-0.4	1.6		+/-0.4	1.5		+/-0.5	1.5		+/-0.4	2.1	J	+/-0.5	0.2	U		3.5		+/-0.8
Thallium-208	pCi/g																											
Thorium-230	pCi/g	0.9		+/-0.3	1.4	U	+/-0.5	0.9	J	+/-0.4	0.7		+/-0.3	1		+/-0.4	1.2	J	+/-0.5	0.9	U	+/-0.3	1.1	U	+/-0.4	1.1	U	+/-0.4
Thorium-232	pCi/g	0.7		+/-0.3	0.9		+/-0.4	0.8	J	+/-0.4	0.5		+/-0.2	1.3		+/-0.5	1.1	J	+/-0.5	0.7		+/-0.3	1.2		+/-0.4	1.1		+/-0.4
Thorium-234	pCi/g																											
Tritium	pCi/g	130		+/-0.4	0.1	U	+/-0.1	0.1	UJ	+/-0.1	0.1	U	+/-0.1	0.7	J	+/-0.1	0.2	J	+/-0.1	0.1	U	+/-0.1	3.6		+/-0.1	122		+/-0.6
Uranium-234	pCi/g	0.9		+/-0.3	0.8		+/-0.3	0.6		+/-0.3	0.5	U	+/-0.2	0.8		+/-0.3	0.7		+/-0.3	0.7		+/-0.2	0.5	J	+/-0.2	0.9	J	+/-0.3
Uranium-235	pCi/g	0.1	U	+/-0.1	0.1	U	+/-0.1	0.1	U	+/-0.1	0.1	U	+/-0.1	0.1		+/-0.1	0.1		+/-0.1	0.1	U	+/-0.1	0.1		+/-0.1	0.1		+/-0.1
Uranium-238	pCi/g	0.8		+/-0.3	0.5		+/-0.2	0.5		+/-0.2	0.6		+/-0.2	0.6		+/-0.3	0.9		+/-0.3	0.6		+/-0.2	0.7		+/-0.3	1		+/-0.3

Table C-2B: Baseline Risk Assessment Disposal Pit C Soil Samples

FACILITY		SEAD-12			SEAD-12			SEAD-12			SEAD-12			SEAD-12			SEAD-12		
LOCATION ID		SS12-230			TP12A-3			TP12A-5			TP12A-6			TP12A-7			TP12A-8		
SAMPLE DATE		123425			TP12A-3-2			TP12A-5-1			TP12A-6-2			TP12A-7-1			TP12A-8-1		
DEPTH TO TOP OF SAMPLE		0			6			3			7			4			7		
DEPTH TO BOTTOM OF SAMPLE		0.2			6			3			7			4			7		
PARAMETER	UNIT	N			VALUE	(Q)	error	VALUE	(Q)	error	VALUE	(Q)	error	VALUE	(Q)	error	VALUE	(Q)	error
Actinium-228	pCi/g				0.96		+/-0.26	0.72		+/-0.25	0.66		+/-0.19	0.84		+/-0.24	0.74		+/-0.26
Bismuth-214	pCi/g	1.6	J	+/-0.5	0.84		+/-0.28	0.61		+/-0.1	0.78		+/-0.25	0.96		+/-0.13	0.78		+/-0.26
Cesium-137	pCi/g	0.8		+/-0.3															
Cobalt-57	pCi/g	0.1	U																
Cobalt-60	pCi/g	0.1	U																
Gross Alpha	pCi/g				10		+/-6	8		+/-6	10		+/-6	20		+/-7	5		+/-6
Gross Beta	pCi/g				27		+/-6	22		+/-6	21		+/-6	30		+/-6	23		+/-6
Lead-210	pCi/g	5.8	J	+/-2.9															
Lead-211	pCi/g	3.3	U																
Lead-214	pCi/g	1.5	J	+/-0.4	0.85		+/-0.15	0.72		+/-0.1	0.71		+/-0.15	0.94		+/-0.12	0.65		+/-0.13
Plutonium-239/24	pCi/g	0.1	U	+/-0.2															
Promethium-147	pCi/g																		
Radium-223	pCi/g	0.5	UJ																
Radium-226	pCi/g	1.6	J	+/-0.5															
Radium-228	pCi/g	1.6		+/-0.4															
Thallium-208	pCi/g				0.89		0.66	0.24		0.05	0.67		0.75	0.37		0.22	0.34		0.21
Thorium-230	pCi/g	1		+/-0.4															
Thorium-232	pCi/g	0.9		+/-0.4															
Thorium-234	pCi/g				0.52		+/-0.39	0.36		+/-0.24	0.38		+/-0.17	0.54		+/-0.43	0.44		+/-0.38
Tritium	pCi/g	1.3	J	+/-0.1															
Uranium-234	pCi/g	0.6		+/-0.2															
Uranium-235	pCi/g	0.1		+/-0.1															
Uranium-238	pCi/g	0.8		+/-0.3															

Table C-2C: Baseline Risk Assessment Background Soil Sample Results

FACILITY		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID		MW12-1		MW12-1		MW12-1		MW12-2		MW12-2		MW12-3		MW12-3		MW12-3		MW12-4	
MATRIX		SOIL		SOIL		SOIL		SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
SAMPLE ID		12507		12506		12508		12512		12513		12509		12510		12511		12505	
DEPTH TO TOP OF SAMPLE		0		0.2		4		0		2		0		0.2		6		0	
DEPTH TO BOTTOM OF SAMPLE		0.2		2		6		0.2		4		0.2		2		8		0.2	
PARAMETER	UNIT	N		N		N		N		N		N		N		N		N	
Bismuth-214	pCi/g	1.3	UJ	1.2	J	1.4	J	1.1	J	1.6	UJ	1.4	J	1.5	J	1.5	J	1.9	J
Cesium-137	pCi/g	0.6		0.2	U	0.2	U	0.7		0.2	U	0.9	U	0.1	U	0.1	U	0.7	
Cobalt-57	pCi/g	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.2	U
Cobalt-60	pCi/g	0.2	U	0.2	U	0.3	U	0.4	U	0.4	U	0.1	U	0.3	U	0.5	U	0.3	U
Lead-210	pCi/g	23.2	U	21.6	U	1.2	U	25.9	U	3.1	U	2.3	U	14.7	U	4.1	U	1.3	U
Lead-211	pCi/g	13.8	U	4.5	U	2	U	11.6	U	1.4	U	6.3	U	4.1	U	5.3	U	9.7	U
Lead-214	pCi/g	1.3		1.2		1.2		1.3		1.8		1.3		1.5		1.1		1.1	
Plutonium-239/240	pCi/g	0.2	J	0.2		0.1		0.3	U	0.3	UJ	0.2	J	0.3	UJ	0.2		0.2	
Promethium-147	pCi/g	14.4	U	13.3	U	9.6	U	10.3	U	5.1	U	8.3	U	5.6	U	6.5	U	7.9	U
Radium-223	pCi/g	0.3	U	0.4	U	0.4	U	0.4	U	0.4	U	0.5	U	0.4	U	0.4	U	0.6	U
Radium-226	pCi/g	1.3	UJ	1.2	J	1.4	J	1.1	J	1.6	UJ	1.4	J	1.5	J	1.5	J	1.9	J
Radium-228	pCi/g	1.8	J	2	J	2.1	J	1.7	J	3.5	J	1.4	J	2.1	J	1.7	J	1.5	J
Thorium-227	pCi/g	0.6	U	0.3	UJ	0.4	UJ	0.1	J	0.1		0.1		0.2	U	0.2		0.3	J
Thorium-230	pCi/g	1.8	U	1.7	UJ	1.8	UJ	2.1	UJ	1	U	1.5	U	2.9	U	1.1	U	2.7	J
Thorium-232	pCi/g	1.3		0.9	J	1.1	J	1.2	J	0.9		1.1		1.2		0.8		0.9	UJ
Tritium	pCi/g	0.1	UJ	0.1	UJ	0.1	UJ	0.1	U	0.1	U	0.4	UJ	0.1	U	0.1	U	0.5	J
Uranium-233/234	pCi/g	0.6	UJ	1.1	UJ	1.1	UJ	1.6	UJ	0.7	UJ	0.7	UJ	0.5	UJ	1	UJ	0.9	UJ
Uranium-235	pCi/g	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
Uranium-238	pCi/g	0.7		0.6	J	1		0.8		0.7		0.6	U	0.6	U	0.7		0.8	

Table C-2C: Baseline Risk Assessment Background Soil Sample Results

FACILITY		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID		MW12-4		MW12-4		MW12-5		MW12-5		MW12-5		MW12-6		MW12-6		MW12-6		SB12-7		SB12-8		SB12-9		SS12-1	
MATRIX		SOIL		SOIL		SOIL		SOIL		SOIL		SOIL		SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
SAMPLE ID		12501		12502		12504		12500		12503		123190		123191		123192		123194		123193		123189		12536	
DEPTH TO TOP OF SAMPLE		4		6		0		2		8		0		4		6		4		4		4		0	
DEPTH TO BOTTOM OF SAMPLE		5.4		8		0.2		3.5		9.7		0.2		6		8		5		6		6		0.2	
PARAMETER	UNIT	N		N		N		N		N		N		N		N		N		N		N		N	
Bismuth-214	pCi/g	1	J	1	J	1.5	J	1.2	J	1.1	J	1.7		1.2		1.4		1.6		2.3		2.2		1.6	J
Cesium-137	pCi/g	0.1	U	0.3	U	0.9	U	0.1	U	0.1	U	0.6		0.3		0.4		0.2		0.5		0.1		0.4	U
Cobalt-57	pCi/g	0.1	U	0.1	U	0.2	U	0.1		0.1	U	0.1	U	0.1		0.1		0.1	U	0.1		0.1		0.1	U
Cobalt-60	pCi/g	0.1	U	0.2	U	0.1	U	0.2	U	0.1	U	0.1		0.2		0.1		0.4		0.3		0.1		0.1	U
Lead-210	pCi/g	17	U	1.2	U	3.9	U	3.7	U	15.6	U	4.3	J	1.5	UJ	2.6	J	2.9	J	4	J	1.8	UJ	33.6	U
Lead-211	pCi/g	0.8	U	2.2	U	10.7	U	1.5	U	1.3	U	1.8	U	10		1.5	U	1.9	U	1.4	U	1.3	U	9.7	
Lead-214	pCi/g	1		1.3		1.4		1.5		1		1.3		1.5		1.2		1.5		1.7		1.9		1.5	
Plutonium-239/240	pCi/g	0.1		0.1	J	0.3	UJ	0.2	U	0.3	U	0.2	U	0.2	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	UJ
Promethium-147	pCi/g	3.2		2.1		8.9	U	10		2.1														13.4	
Radium-223	pCi/g	0.3	U	0.3	U	0.6	U	0.4	U	0.3	U	0.4	U	0.4	U	0.3	U	0.4	U	0.4	U	0.5	U	1.4	U
Radium-226	pCi/g	1	J	1	J	1.5	J	1.2	J	1.1	J	1.7		1.2		1.4		1.6		2.3		2.2		1.6	J
Radium-228	pCi/g	1.5	J	1	J	1.6	J	1.8	J	1.1	J	1.2	J	1.5	J	1.5	J	1.8	J	2.6	J	1.3	J	1.5	J
Thorium-227	pCi/g	0.5	UJ	0.1		0.3	U	0.4	J	0.3	J													0.1	UJ
Thorium-230	pCi/g	1.8	UJ	0.9	U	1.5	U	1.9	UJ	1.7	UJ	1	J	0.5	J	0.2	J	0.8	J	0.9	J	0.8	J	0.5	UJ
Thorium-232	pCi/g	2	J	0.9		1.2		1.4	J	0.8	J	1.1		0.5		0.7	J	1	J	0.7		0.7		0.9	J
Tritium	pCi/g	0.1	UJ	0.1	UJ	0.5	J	0.1	UJ	0.1	UJ	14.2	J	0.1	UJ	0.1	UJ	0.1	UJ	0.1	UJ	0.1	UJ	0.1	UJ
Uranium-233/234	pCi/g	0.9	UJ	1	UJ	0.6	UJ	0.7	UJ	1	UJ	1		0.6		0.5		0.8		0.7		0.9		0.5	U
Uranium-235	pCi/g	0.1	U	0.1	U	0.1	U	0.2	U	0.1	U	0.1		0.1		0.1		0.1		0.1		0.1		0.1	
Uranium-238	pCi/g	0.6		0.5	U	0.9		0.7		0.9		1.2		0.8		0.4		1.1		0.7		0.9		0.6	U

Table C-2C: Baseline Risk Assessment Background Soil Sample Results

FACILITY		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID		SS12-10		SS12-11		SS12-12		SS12-13		SS12-13		SS12-14		SS12-2		SS12-3		SS12-4		SS12-5		SS12-6		SS12-7		SS12-8		SS12-9	
MATRIX		SOIL		SOIL		SOIL		SOIL		SOIL		SOIL		SOIL		SOIL		SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
SAMPLE ID		12545		12542		12544		12212		12543		12541		12535		12537		12547		12538		12539		12540		12548		12546	
DEPTH TO TOP OF SAMPLE		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
DEPTH TO BOTTOM OF SAMPLE		0.2		0.2		0.2		0.2		0.2		0.2		0.2		0.2		0.2		0.2		0.2		0.2		0.2		0.2	
PARAMETER	UNIT	N		N		N		N		N		N		N		N		N		N		N		N		N		N	
Bismuth-214	pCi/g	1.4	UJ	1.2	UJ	1.4	J	1.3	J	1.6	UJ	1.5	UJ	1.7	J	2.6	J	1.3	J	1.5	UJ	1.8	J	1.4	J	1.6	J	2.5	UJ
Cesium-137	pCi/g	0.7		0.6		0.9	U	0.5	J	0.6	UJ	0.3	U	0.2	U	1.1	U	1	U	0.6	U	0.8	U	0.2	U	0.4	U	1.1	U
Cobalt-57	pCi/g	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.2	U	0.1	U	0.1	U	0.1	U	0.2	U	0.1	U
Cobalt-60	pCi/g	0.2	U	0.5	U	0.3	U	0.3	U	0.4	U	0.3	U	0.3	U	0.1	U	0.2	U	0.1	U	0.1	U	0.1	U	0.1	U	0.4	U
Lead-210	pCi/g	23.6	U	42.2	U	4.8	U	21.7	U	4.3	U	3.7		5	U	3.9	U	23	U	25.9	U	3.7	U	23.1	U	17.9	U	6.3	U
Lead-211	pCi/g	1.3	U	3.9		0.9	U	1.2	U	10	U	3.5	U	8.3	U	12.1	U	1.3	U	4.8	U	2.5	U	5.8	U	9.9		21.5	U
Lead-214	pCi/g	2		1.2		2.2		1.9		2		1.5		2.5		2.4		1.3		1.2	U	1.4	U	1.6		1.7		2.2	
Plutonium-239/240	pCi/g	0.2	U	0.3	UJ	0.4	UJ	0.3	UJ	0.2	U	0.3	UJ	0.2	UJ	0.3	UJ	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Promethium-147	pCi/g	7.8	U	15.2	U	17.8		10.5	U	7.7	U	9.5	U	12.8		10.1	U	15.5		12		9.5	U	16.8		12.4	U	11.5	U
Radium-223	pCi/g	0.4	U	0.3	U	0.4	U	0.4	U	0.5	U	0.5	U	0.5	U	0.7		0.4	U	0.3	U	0.5	U	0.5	U	0.5	U	0.4	U
Radium-226	pCi/g	1.4	UJ	1.2	UJ	1.4	J	1.3	J	1.6	UJ	1.5	UJ	1.7	J	2.6	J	1.3	J	1.5	UJ	1.8	J	1.4	J	1.6	J	2.5	UJ
Radium-228	pCi/g	1.6	J	1.7	J	1.9	J	1.4	J	1.7	J	2.3	J	2.1	J	2.2	J	2	J	1.2	J	1.4	J	1	J	2.5	J	2.3	UJ
Thorium-227	pCi/g	0.3	UJ	0.5	U	0.5	U	0.3	U	0.1	U	0.6	UJ	0.2	U	0.6	U	0.5	U	0.1	U	0.1	U	0.5	U	1.1	UJ	0.7	U
Thorium-230	pCi/g	1.7	J	1.1	UJ	1.3	UJ	1	UJ	1.4	UJ	0.8	UJ	1.6	J	0.5	UJ	0.6	UJ	0.5	UJ	1	UJ	1.4	UJ	1.2	UJ	1.5	UJ
Thorium-232	pCi/g	1.5		0.8		0.9		0.9	J	1.7	J	0.5	J	0.5		0.8		1.2		0.7		0.9		0.8		1.8	J	1	
Tritium	pCi/g	0.1	UJ	0.1	UJ	0.1	UJ	60.4	J	0.1	UJ	0.1	UJ	0.8	J	0.1	UJ	0.1	UJ	0.1	UJ	0.1	UJ	0.1	UJ	0.1	UJ	9.6	J
Uranium-233/234	pCi/g	1.1		0.8	UJ	1.1		0.7		0.9		0.7	J	1.9	J	0.7	U	0.7		0.5	U	0.8		0.7	J	0.9		0.9	
Uranium-235	pCi/g	0.2		0.4	UJ	0.2		0.1		0.1		0.4	J	0.3	J	0.1		0.2	U	0.1		0.1		0.3	J	0.1		0.2	
Uranium-238	pCi/g	1		0.8	J	0.7	U	0.7		0.7		1.2	J	1.4	J	0.7	U	1		0.6	U	0.5	U	1	J	0.9		1	

ATTACHMENT D

Identification of ROPCs and Determination of EPC for ROPCs

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TABLE D-1: IDENTIFICATION OF SURFACE SOIL ROPCS FOR DISPOSAL PIT A/B AND DETERMINATION OF EXPOSURE POINT CONCENTRATION OF EACH ROPC

Parent	Radio-nuclides	Detect?	# of Samples	FOD	Concentration (pCi/g)			Considered for Background Screen?[a]	Background Conc (pCi/g)	Considered as ROPC?[b]	Dist[c]	UCL_{95} (pCi/g)	EPC[d] (pCi/g)
					Mean	Max	Min						
Actinium-227	Lead-211[e]	ND	21	16%	2.69	3.7	0.6	Yes	8.67	Yes	G	3.45	0
		DT	4			9.6	4.3						
	Radium-223[e]	ND	24	4%	0.42	0.6	0.3	No	0.29	No	-	-	-
		DT	1			0.4	0.4						
Cesium-137	Cesium-137	ND	7	72%	0.56	0.1	0.1	Yes	0.51	Yes	X	0.9	0.39
		DT	18			1.3	0.3						
Cobalt-57	Cobalt-57	ND	21	16%	0.108	0.1	0.1	Yes	0.12	Yes	X	0.12	0
		DT	4			0.2	0.1						
Cobalt-60	Cobalt-60	ND	25	0%	0.1	0.1	0.1	No	-	-	-	-	-
Plutonium-239/240	Plutonium-239/240	ND	18	28%	0.152	0.3	0.1	Yes	0.16	No	-	-	-
		DT	7			0.1	0.1						
Radium-226	Radium-226	DT	60	100%	1.33	3.1	0.73	Yes	1.52	Yes	G	0	0
	Lead-210[f]	ND	12	52%	15.85	39.1	2.5	Yes	16.29	Yes	-		0
		DT	13			38.6	2.9						
Radium-228	Radium-228	DT	25	100%	1.70	3.2	1	Yes	1.88	Yes	L	1.84	0
Thorium-230	Thorium-230	ND	10	60%	1.06	1.4	0.5	Yes	0.87	Yes	N	1.14	0.266
		DT	15			1.4	0.9						
Thorium-232	Thorium-232	DT	60	100%	0.82	1.5	0	Yes	1.13	Yes	X	1.00	0.00
Tritium	Tritium	ND	7	72%	7.27	0.1	0.1	Yes	5.34	Yes	G	14.21	8.87
		DT	18			53.3	0.2						
Uranium-233/234	Uranium-233/234	ND	3	88%	0.60	0.6	0.5	Yes	0.74	Yes	X	0.66	0
		DT	22			1	0.4						
Uranium-235	Uranium-235	ND	18	28%	0.12	0.2	0.1	Yes	0.18	Yes	X	0.14	0
		DT	7			0.3	0.1						
Uranium-238	Uranium-238	DT	25	100%	0.66	1	0.3	Yes	0.8	Yes	X	0.71	0

Footnote

ND = Non-detect; DT = Detect; FOD = Frequency of Detection; Max = Maximum; Min = Minimum; Dist = Distribution; UCL_{95} - 95% upper confidence limit of the mean; EPC = Exposure Point Concentration

[a] Criteria - Frequency of Detection is greater than 5%

[b] Criteria - The maximum detected concentration is greater than the background concetration

[c] Dist = N = Normal; L= Lognormal; G = Gamma; X = Non-Parametric

[d] EPC = Minimum of (UCL95, Maximum Detected Concentration) - Background Concentratior

[e] Evaluated as a part of its parent.

[f] The EPC for Pb-210 was set equal to its parent, Ra-226.

TABLE D-2: IDENTIFICATION OF SURFACE AND SUBSURFACE SOIL ROPCS FOR DISPOSAL PIT A/B AND DETERMINATION OF EXPOSURE POINT CONCENTRATION OF EACH ROPC

Parent	Radionuclides	Detect?	# of Samples	FOD	Concentration (pCi/g)			Considered for Background Screen?[a]	Background Conc (pCi/g)	Considered as ROPC?[b]	Dist[c]	UCL_{95} (pCi/g)	EPC[d] (pCi/g)
					Mean	Max	Min						
Actinium-227	Thorium-227[e]	ND	2	0%	0.20	0.3	0.1	No	0.47	No	-	-	-
	Radium-223[e]	ND	29	9%	0.48	0.6	0.3	Yes	0.29	Yes	X	0.59	0.30
		DT	3			2.1	0.4						
	Lead-211[e]	ND	27	16%	2.91	9.1	0.6	Yes	8.67	Yes	G	3.65	0
		DT	5			9.6	4.3						
Cesium-137	Cesium-137	ND	9	72%	0.48	0.2	0.1	Yes	0.51	Yes	G	0.63	0.12
		DT	23			1.3	0.2						
Cobalt-57	Cobalt-57	ND	25	22%	0.11	0.1	0.1	Yes	0.12	Yes	X	0.01	0
		DT	7			0.2	0.1						
Cobalt-60	Cobalt-60	ND	27	16%	0.16	0.3	0.1	Yes	0.326	Yes	X	0.26	0
		DT	5			0.6	0.2						
Ra-226	Radium-226	ND	1	99%	1.61	1.5	1.5	Yes	1.52	Yes	G	1.46	0
		DT	66			3.1	0.73						
	Lead-210[e,f]	ND	14	56%	14.56	40.8	2.5	Yes	16.29	Yes	See footnote 2		0
		DT	18			38.6	2.9						
Radium-228	Radium-228	DT	32	100%	1.72	3.2	1	Yes	1.88	Yes	L	1.85	0
Plutonium-239/240	Plutonium-239/240	ND	24	25%	0.15	0.3	0.1	Yes	0.16	Yes	X	0.16	0
		DT	8			0.2	0.1						
Promethium-147	Promethium-147	ND	2	0%	3.45	3.9	3	No					
Thorium-230	Thorium-230	ND	14	56%	1.00	1.4	0.5	Yes	0.87	Yes	N	1.08	0.21
		DT	18			1.4	0.6						
Thorium-232	Thorium-232	ND	1	99%	0.82	0.5	0.5	Yes	1.13	Yes	L	0.98	0
		DT	66			1.5	0						
Tritium	Tritium	ND	14	56%	5.70	0.1	0.1	Yes	5.34	Yes	X	25.43	20.09
		DT	18			53.3	0.2						
Uranium-233/234	Uranium-233/234	ND	5	84%	0.61	0.6	0.5	Yes	0.74	Yes	X	0.66	0
		DT	27			1	0.4						
Uranium-235	Uranium-235	ND	23	28%	0.12	0.2	0.1	Yes	0.18	Yes	X	0.13	0
		DT	9			0.3	0.1						
Uranium-238	Uranium-238	ND	1	97%	0.65	0.4	0.4	Yes	0.8	Yes	X	0.70	0
		DT	31			1	0.3						

Footnotes

ND = Non-detect; DT = Detect; FOD = Frequency of Detection; Max = Maximum; Min = Minimum; Dist = Distribution; UCL_{95} - 95% upper confidence limit of the mean; EPC = Exposure Point Concentration

[a] Criteria - Frequency of Detection is greater than 5%

[b] Criteria - The maximum detected concentration is greater than the background concetration

[c] Dist = N = Normal; L= Lognormal; G = Gamma; X = Non-Parametric

[d] EPC = Minimum of (UCL95, Maximum Detected Concentration) - Background Concentration

[e] Evaluated as a part of its parent.

[f] The EPC for Pb-210 was set equal to its parent, Ra-226.

TABLE D-3: IDENTIFICATION OF SURFACE SOIL ROPCS FOR DISPOSAL PIT C AND DETERMINATION OF EXPOSURE POINT CONCENTRATION OF EACH ROPC

Parent	Radionuclides	Detect?	# of Samples	FOD	Concentration (pCi/g)			Considered for Background Screen?[a]	Background Conc (pCi/g)	Considered as ROPC?[b]	Dist[c]	UCL_{95} (pCi/g)	EPC[d] (pCi/g)
					Mean	Max	Min						
Actinium-227	Lead-211[e]	ND	31	16%	3.43	3.5	0.6	Yes	8.67	Yes	X	6.27	0
		DT	6			20.3	4.3						
	Radium-223[e]	ND	36	3%	0.48	0.6	0.3	No	0.29	No	-	-	
		DT	1			1.5	1.5						
Cesium-137	Cesium-137	ND	17	54%	0.39	0.2	0.1	Yes	0.51	Yes	X	0.62	0.11
		DT	20			1	0.3						
Cobalt-57	Cobalt-57	ND	30	19%	0.10	0.1	0.1	Yes	0.12	No	-	-	-
		DT	7			0.1	0.1						
Cobalt-60	Cobalt-60	ND	32	14%	0.14	0.1	0.1	Yes	0.326	Yes	X	0.16	0
		DT	5			0.5	0.2						
Plutonium-239/240	Plutonium-239/240	ND	31	16%	0.14	0.4	0.1	Yes	0.16	Yes	X	0.16	0
		DT	6			0.2	0.1						
Radium-226	Radium-226	DT	89	100%	1.30	5.8	0.7	Yes	1.52	Yes	X	1.38	0
	Lead-210[e,f]	ND	18	51%	12.96	34.5	1.2	Yes	16.29	Yes	See footnote 2		0
		DT	19			53.9	1.9						
Radium-228	Radium-228	ND	2	95%	1.79	0.1	0.1	Yes	1.88	Yes	X	2.20	0.32
		DT	35			2.7	1.1						
Thorium-230	Thorium-230	ND	21	43%	0.99	1.5	0.5	Yes	0.87	Yes	X	1.06	0.19
		DT	16			1.3	0.6						
Thorium-232	Thorium-232	ND	1	99%	0.92	0.6	0.6	Yes	1.13	Yes	X	0.97	0
		DT	88			1.3	0						
Tritium	Tritium	ND	13	65%	7.63	0.1	0.1	Yes	5.34	Yes	X	48.82	43.48
		DT	24			130	0.1						
Uranium-234	Uranium-234	ND	11	70%	0.73	1	0.5	Yes	0.74	Yes	N	0.78	0.04
		DT	26			1	0.3						
Uranium-235	Uranium-235	ND	24	35%	0.11	0.2	0.1	Yes	0.18	Yes	X	0.12	0.00
		DT	13			0.2	0.1						
Uranium-238	Uranium-238	ND	1	97%	0.75	0.6	0.6	Yes	0.8	Yes	X	0.80	0.00
		DT	36			1	0.5						

Footnote

ND = Non-detect; DT = Detect; FOD = Frequency of Detection; Max = Maximum; Min = Minimum; Dist = Distribution; UCL_{95} - 95% upper confidence limit of the mean; EPC = Exposure Point Concentration

[a] Criteria - Frequency of Detection is greater than 5%

[b] Criteria - The maximum detected concentration is greater than the background concetration

[c] Dist = N = Normal; L= Lognormal; G = Gamma; X = Non-Parametric

[d] EPC = Minimum of (UCL95, Maximum Detected Concentration) - Background Concentration

[e] Evaluated as a part of its parent.

[f] The EPC for Pb-210 was set equal to its parent, Ra-226.

TABLE D-4: IDENTIFICATION OF SURFACE AND SUBSURFACE SOIL ROPCS FOR DISPOSAL PIT C AND DETERMINATION OF EXPOSURE POINT CONCENTRATION OF EACH ROPC

Parent	Radionuclides	Detect?	# of Samples	FOD	Concentration (pCi/g)			Considered for Background Screen?[a]	Background Conc (pCi/g)	Considered as ROPC?[b]	Dist[c]	UCL_{95} (pCi/g)	EPC[d] (pCi/g)
					Mean	Max	Min						
Actinium-227	Lead-211	ND	35	17%	3.39	3.5	0.6	Yes	8.67	Yes	X	5.94	0.00
		DT	7			20.3	4.3						
	Radium-223	ND	41	2%	0.48	0.6	0.3	No	0.29	No	-	-	-
		DT	1			1.5	1.5						
Cesium-137	Cesium-137	ND	20	52%	0.40	0.2	0.1	Yes	0.51	Yes	X	0.62	0.11
		DT	22			1	0.3						
Cobalt-57	Cobalt-57	ND	34	19%	0.10	0.1	0.1	Yes	0.12	No	-	-	-
		DT	8			0.1	0.1						
Cobalt-60	Cobalt-60	ND	37	12%	0.13	0.1	0.1	Yes	0.326	Yes	X	0.16	0.00
		DT	5			0.5	0.2						
Plutonium-239/240	Plutonium-239/240	ND	35	17%	0.15	0.4	0.1	Yes	0.16	Yes	X	0.1	0.00
		DT	7			0.2	0.1						
Radium-226	Radium-226	DT	94	100%		5.8	0.16	Yes	1.52	Yes	L	1.39	0.00
	Lead-210[f]	ND	20	52%	15.09	38.1	1.2	Yes	16.29	Yes	See footnote 2		0.00
		DT	22			68.9	1.9						
Radium-228	Actinium-228[e]	DT	5	100%	0.78	0.96	0.66	Yes	1.88	No	-	-	-
	Radium-228	ND	3	93%	1.79	0.2	0.1	Yes	1.88	Yes	X	2.23	0.35
		DT	39			3.5	1.1						
Thorium-208[g]	Thallium-208	DT	5	100%	0.50	0.89	0.24	Yes	1.88	No	-	-	-
Thorium-230	Thorium-230	ND	24	43%	1.00	1.5	0.5	Yes	0.87	Yes	G	1.07	0.20
		DT	18			1.3	0.6						
Thorium-232	Thorium-232	ND	1	99%	0.85	0.6	0.6	Yes	1.13	Yes	G	0.95	0.00
		DT	93			1.7	0						
Tritium	Tritium	ND	14	67%	9.75	0.1	0.1	Yes	5.34	Yes	X	55.18	49.84
		DT	28			130	0.1						
Uranium-234	Uranium-234	ND	11	74%	0.73	1	0.5	Yes	0.74	Yes	X	0.77	0.03
		DT	31			1	0.3						
Uranium-235	Uranium-235	ND	25	40%	0.11	0.2	0.1	Yes	0.18	Yes	X	0.12	0.00
		DT	17			0.2	0.1						
Uranium-238	Uranium-238	ND	1	98%	0.76	0.6	0.6	Yes	0.8	Yes	X	0.8	0.00
		DT	41			1	0.5						

Footnote

ND = Non-detect; DT = Detect; FOD = Frequency of Detection; Max = Maximum; Min = Minimum; Dist = Distribution; UCL_{95} - 95% upper confidence limit of the mean; EPC = Exposure Point Concentration

[a] Criteria - Frequency of Detection is greater than 5%

[b] Criteria - The maximum detected concentration is greater than the background concetration

[c] Dist = N = Normal; L= Lognormal; G = Gamma; X = Non-Parametric

[d] EPC = Minimum of (UCL95, Maximum Detected Concentration) - Background Concentration

[e] Evaluated as a part of its parent.

[f] The EPC for Pb-210 was set equal to its parent, Ra-226.

[g] The background for Th-228 was set equal to Ra-228.

TABLE D-5: IDENTIFICATION OF GROUNDWATER ROPCS AND DETERMINATION OF EXPOSURE POINT CONCENTRATION OF EACH ROPC

Parents	Radionuclides	FOD	Range of values, pCi/L		Considered for Background Screen?[a]	Background Concentration	Considered for Risk Evaluation?[b]	Risk Screen	Considered as ROPC?[c]	Dist[d]	95% UCL	EPC[e] (pCi/L)
			Detected Concentrations					MCL				
			Minimum	Maximum		pCi/L		pCi/L			pCi/L	
Cesium-137	Cesium-137	4%	4.1	9.4	No	1.35	-	-	-	-	-	-
Cobalt-57	Cobalt-57	4%	2.1	2.6	No	1.35	-	-	-	-	-	-
Cobalt-60	Cobalt-60	9%	3.1	11.4	Yes	NC	Yes	100	No	-	-	-
Actinium-227	Radium-223	44%	0.1	1.06	Yes	0.26	Yes	0.24	Yes	L	0.30	0.05
Ra-226	Radium-226	51%	0.1	1.8	Yes	0.40	Yes	5	No	-	-	-
	Lead-210[f,g]	10%	2.64	4.67	Yes	NC	Yes	NA	No	-	-	-
Radon-222	Radon-222	59%	3.9	746	Yes	223.75	Yes	10000	No	-	-	-
Thorium-228	Thorium-228	5%	0.188	0.28	Yes	NC	Yes	15	No	-	-	-
Thorium-230	Thorium-230	14%	0.0395	0.4	Yes	0.46	No	-	-	-	-	-
Thorium-232	Thorium-232	11%	0.0096	0.1	Yes	0.09	Yes	15	No	-	-	-
Tritium	Tritium	9%	24.9	234	Yes	199.50	Yes	20000	No	-	-	-
Uranium-233/234	Uranium-233/234	88%	0.1	3.5	Yes	1.02	Yes	30	No	-	-	-
Uranium-235	Uranium-235	36%	0.1	0.4	Yes	0.11	Yes					
Uranium-238	Uranium-238	93%	0.1	3.3	Yes	0.97	Yes					

Footnotes

ND = Non-detect; DT = Detect; FOD = Frequency of Detection; Max = Maximum; Min = Minimum; Dist = Distribution; UCL_{95} - 95% upper confidence limit of the mean; EPC = Exposure Point Concentration

[a] Criteria - Frequency of Detection is greater than 5%

[b] Criteria - The maximum detected concentration is greater than the background concetration

[c] Criteria - The maximum detected concentration is greater than the MCL value

[d] Dist = N = Normal; L= Lognormal; G = Gamma; X = Non-Parametric

[e] EPC = Minimum of (UCL95, Maximum Detected Concentration) - Background Concentration

[f] Evaluated as a part of its parent.

[g] The EPC for pb-210 was set equal to its parent, Ra-226.

TABLE D-6: IDENTIFICATION OF ONSITE SURFACE WATER ROPCS AND DETERMINATION OF EXPOSURE POINT CONCENTRATION OF EACH ROPC

Parents	Radionuclides	FOD	Range of values, pCi/L Detected Concentrations		Considered for Background Screen?[a]	Background Concentration	Considered for Risk Evaluation?[b]	Risk Screen MCL	Considered as ROPC?[c]	Dist[d]	95% UCL	EPC[e] (pCi/L)
			Minimum	Maximum		pCi/L		pCi/L			pCi/L	
Cobalt-60	Cobalt-60	13%	3.6	9.2	Yes	NC	Yes	100	No	-	-	-
Actinium-227	Radium-223[f]	28%	0.05	0.4	Yes	0.12	Yes	0.24	Yes	X	0.81	0.28
Radium-226	Radium-226	30%	0.1	0.5	Yes	NC	Yes	5	No	-	-	-
Radon-222	Radon-222	63%	27.4	401	Yes	53.16	Yes	10000	No	-	-	-
Promethium-147	Promethium-147	4.5%	70.6	70.6	No	-	-	-	-	-	-	-
Thorium-230	Thorium-230	17%	0.9	2.2	Yes	NC	Yes	15	No	-	-	-
Thorium-232	Thorium-232	26%	0.1	0.4	Yes	0.12	Yes	15	No	-	-	-
Tritium	Tritium	81%	4.5	432	Yes	142.33	Yes	20000	No	-	-	-
Uranium-234	Uranium-234	28%	0.1	1	Yes	NC	Yes	30	No	-	-	-
Uranium-235	Uranium-235	26%	0.1	0.2	Yes	0.10	Yes		No	-	-	-
Uranium-238	Uranium-238	48%	0.1	0.7	Yes	0.20	Yes		No	-	-	-

Footnotes

FOD = Frequency of Detection; Dist = Distribution; UCL_{95} - 95% upper confidence limit of the mean; EPC = Exposure Point Concentration

[a] Criteria - Frequency of Detection is greater than 5%

[b] Criteria - The maximum detected concentration is greater than the background concetration

[c] Criteria - The maximum detected concentration is greater than the MCL value

[d] Dist = N = Normal; L= Lognormal; G = Gamma; X = Non-Parametric

[e] EPC = Minimum of (UCL95, Maximum Detected Concentration) - Background Concentration

[f] Evaluated as a part of its parent

TABLE D-7: IDENTIFICATION OF DOWNGRADIENT SURFACE WATER ROPCS AND DETERMINATION OF EXPOSURE POINT CONCENTRATION OF EACH ROPC

Parents	Radionuclides	FOD	Range of values, pCI/L		Considered for Background Screen?[a]	Background	Considered for Risk Screen?[b]	Risk Screen	Considered as ROPC?[c]
			Detected Concentrations			UCL		MCL	
			Minimum	Maximum		pCi/L		pCi/L	
Actinium-227	Thorium-227[d]	9%	0.1	0.1	Yes	0.117	No	0.24	No
	Radium-223[d]	18%	0.1	0.2	Yes	0.117	Yes		
Radium-226	Radium-226	18%	0.1	0.2	Yes	18.75	Yes	5	No
Thorium-230	Thorium-230	9%	0.8	0.8	Yes	NC	Yes	15	No
Thorium-232	Thorium-232	55%	0.1	0.1	Yes	0.12	No	15	No
Tritium	Tritium	100%	36	324	Yes	142.33	Yes	20000	No
Uranium-234	Uranium-234	45%	0.5	1.1	Yes	NC	Yes	30	No
Uranium-235	Uranium-235	64%	0.1	0.3	Yes	0.10	Yes		No
Uranium-238	Uranium-238	100%	0.1	0.5	Yes	0.20	Yes		No

Footnotes

FOD = Frequency of Detection; Dist = Distribution; UCL_{95} - 95% upper confidence limit of the mean; EPC = Exposure Point Concentration

[a] Criteria - Frequency of Detection is greater than 5%

[b] Criteria - The maximum detected concentration is greater than the background concetration

[c] Criteria - The maximum detected concentration is greater than the MCL value

[d] Evaluated as a part of its parent

TABLE D-8: IDENTIFICATION OF ONSITE SEDIMENT ROPCS AND DETERMINATION OF EXPOSURE POINT CONCENTRATION OF EACH ROPC

Parents	Radionuclides	FOD	Range of values, pCi/g Detected Concentrations		Considered for Background Screen?[a]	Background Concentration pCi/g	Considered as ROPC?[b]	Dist[c]	95% UCL pCi/g	EPC[d] (pCi/g)
			Minimum	Maximum						
Actinium-227	Thorium-227[e]	30%	0.1	0.3	Yes	0.38	No	-	-	-
Cs-137	Cesium-137	46%	0.3	1.5	Yes	0.51	Yes	L	0.61	0.10
Ra-226	Radium-226	72%	0.9	2.4	Yes	1.81	Yes	N	1.45	0.00
	Lead-210[e,f]	11%	4.5	6.1	Yes		Yes	-	-	0.00
Ra-228	Radium-228	91%	0.9	3.2	Yes	2.08	Yes	N	1.93	0.00
Plutonium-239/240	Plutonium-239/240	50%	0.1	0.2	Yes	0.15	Yes	X	0.13	-
Promethium-147	Promethium-147	80%	0.1	83	Yes	14.16	Yes	X	29.55	15.39
Th-228	Thallium-208	100%	0.26	0.85	Yes	2.19	No	-	-	-
Thorium-230	Thorium-230	41%	0.5	1.9	Yes	1.42	Yes	X	0.68	0.00
Thorium-232	Thorium-232	85%	0.3	1.7	Yes	1.58	Yes	N	0.94	0.00
Tritium	Tritium	13%	0.1	0.6	Yes	0.12	Yes	X	0.09	0.00
Uranium-234	Uranium-234	57%	0.4	1.5	Yes	0.52	Yes	X	0.64	0.12
Uranium-235	Uranium-235	48%	0.1	0.2	Yes	0.11	Yes	X	0.10	0.00
Uranium-238	Uranium-238	48%	0.4	1	Yes	0.31	Yes	X	0.45	0.15

Footnotes

FOD = Frequency of Detection; Dist = Distribution; UCL_{95} - 95% upper confidence limit of the mean; EPC = Exposure Point Concentration

[a] Criteria - Frequency of Detection is greater than 5%

[b] Criteria - The maximum detected concentration is greater than the background concetration

[c] Dist = N = Normal; L= Lognormal; G = Gamma; X = Non-Parametric

[d] EPC = Minimum of (UCL95, Maximum Detected Concentration) - Background Concentration

[e] Evaluated as a part of its parent

[f] The EPC for Pb-210 was set equal to its parent, Ra-226.

TABLE D-9: IDENTIFICATION OF DOWNGRADIENT SEDIMENT ROPCS AND DETERMINATION OF EXPOSURE POINT CONCENTRATION OF EACH ROPC

Parents	Radionuclides	Detect?	# of Samples	FOD	Concentration (pCi/g)			Considered for Background Screen?[a]	Background Conc (pCi/g)	Considered as ROPC?[b]	Dist[c]	UCL_{95} (pCi/g)	EPC[d] (pCi/g)
					Mean	Max	Min						
Actinium-227	Radium-223[e]	ND	11	0%	0.45	0.5	0.4	No	-	-	-	-	0
	Thorium-227[e]	ND	4	64%	0.37	0.6	0.4	Yes	0.6	Yes	N	0.53	
		DT	7			1	0.1						
	Lead-211[e]	ND	9	18%	6.00	11.7	1	Yes	8.96	Yes	X	8.42	
		DT	2			14.5	7						
Cesium-137	Cesium-137	ND	10	9%	0.33	0.9	0.1	Yes	0.478	No	-	-	-
		DT	1			0.4	0.4						
Cobalt-57	Cobalt-57	ND	11	0%	0.11	0.2	0.1	No	-	-	-	-	-
Cobalt-60	Cobalt-60	ND	11	0%	0.36	0.8	0.2	No	-	-	-	-	-
Plutonium-239/240	Plutonium-239/240	ND	11	0%	0.24	0.4	0.1	No	-	-	-	-	-
Ra-226	Radium-226	ND	5	55%	1.64	2	1.7	Yes	1.814	No	-	-	-
		DT	6			1.7	1						
	Lead-210[e,f]	ND	11	0%	14.83	48.6	1.5	No	-	-	-	-	
Radium-228	Radium-228	ND	1	91%	2.05	1.5	1.5	Yes	2.077	Yes	N	2.38	0.30
		DT	10			3.2	1.1						
Thorium-230	Thorium-230	ND	10	9%	1.93	2.9	1.2	Yes	1.419	Yes	X	3.4	1.98
		DT	1			3.4	3.4						
Thorium-232	Thorium-232	DT	11	100%	0.97	1.6	0.5	Yes	1.575	Yes	N	1.194	0
Tritium	Tritium	ND	10	9%	0.10	0.1	0.1	Yes	0.117	No	-	-	-
		DT	1			0.1	0.1						
Uranium-233/234	Uranium-233/234	ND	3	73%	0.96	0.8	0.5	Yes	0.517	Yes	N	1.14	0.63
		DT	8			1.7	0.8						
Uranium-235	Uranium-235	ND	11	0%	0.22	0.4	0.1	No	0.111	-	-	-	-
Uranium-238	Uranium-238	ND	4	64%	0.72	0.7	0.5	Yes	0.306	Yes	X	0.85	0.54
		DT	7			1.2	0.6						

Footnotes

FOD = Frequency of Detection; Dist = Distribution; UCL_{95} - 95% upper confidence limit of the mean; EPC = Exposure Point Concentration

[a] Criteria - Frequency of Detection is greater than 5%

[b] Criteria - The maximum detected concentration is greater than the background concetration

[c] Dist = N = Normal; L= Lognormal; G = Gamma; X = Non-Parametric

[d] EPC = Minimum of (UCL95, Maximum Detected Concentration) - Background Concentration

[e] Evaluated as a part of its parent

[f] The EPC for Pb-210 was set equal to its parent, Ra-226.

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ATTACHMENT E

Assigned Values for RESRAD Input Parameters

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DEFAULT AND RECOMMENDED VALUES FOR RESRAD INPUT PARAMETERS

RESRAD Version 6.5					Parameter Justification	
Parameter	**Code**	**Default Value**	**User Input Value**	**Units**	**Comments**	**Reference**
PATHWAY SELECTIONS						
External Gamma	N/A	Active	Active	N/A	RESRAD default used.	Parsons Engineering Science 2002
Inhalation (without radon)	N/A	Active	Active	N/A	RESRAD default used.	Parsons Engineering Science 2002
Plant Ingestion	N/A	Active	Inactive	N/A	Only active for Residential Farmer scenario	Parsons Engineering Science 2002
Meat Ingestion	N/A	Active	Inactive	N/A	Only active for Residential Farmer scenario	Parsons Engineering Science 2002
Milk Ingestion	N/A	Active	Inactive	N/A	Only active for Residential Farmer scenario	Parsons Engineering Science 2002
Aquatic Foods	N/A	Active	Inactive	N/A	Only active for Residential Farmer scenario	Parsons Engineering Science 2002
Drinking Water	N/A	Active	Inactive	N/A	Active for Future Park Worker, Recreation Receptor and Residential Farmer Scenario	Parsons Engineering Science 2002
Soil Ingestion	N/A	Active	Active	N/A	RESRAD default used.	Parsons Engineering Science 2002
Radon	N/A	Inactive	Inactive	N/A	Not applicable per cited reference.	NRC, 1994
CONTAMINATED ZONE PARAMETERS						
Area of contaminated zone	AREA	10,000	**2160** (Pit A/B) **8403** (Pit C)	m^2	Site-specific values were used.	Cabrera 2011
Thickness of contaminated zone	THICK0	2	**0.15** (Pit A/B) **0.15** (Pit C)	m	Site-specific average depth of contamination	Cabrera 2011
Length parallel to the aquifer	LCZPAQ	100	46.5 (Pit A/B) 92 (Pit C)	m	Square root of the area of contamination.	Calculated
Times for calculations	TI	1, 3, 10, 30, 100, 300, 1000	1, 3, 10, 30, 100, 300, 1000	yr	RESRAD defaults for calculation times.	ANL 1993
COVER AND CONTAMINATED ZONE HYDROLOGICAL DATA						
Cover depth	COVER	0	0	M	As a conservative approach, no cover depth was assumed.	ANL 1993 (Section 31)
Density of cover material	DENSCV	1.5	**N/A**	g/cm^3	Lack of cover depth precludes an assigned value for this parameter.	ANL 1993 (Section 2)
Cover erosion rate	VCV	0.001	**N/A**	m/yr	Lack of cover depth precludes an assigned value for this parameter.	ANL 1993 (Section 14)

DEFAULT AND RECOMMENDED VALUES FOR RESRAD INPUT PARAMETERS

RESRAD Version 6.5					Parameter Justification	
Parameter	**Code**	**Default Value**	**User Input Value**	**Units**	**Comments**	**Reference**
Density of contaminated zone	DENSCZ	1.5	**1.28**	g/cm^3	Site-specific value was chosen based on the average of silt loam and clay loam soil. (Table 2.1)	ANL 1993 (Section 2)
Contaminated zone erosion rate	VCZ	0.001	**0.0006** **0.00006**	m/yr	Resident (Assume 2% slope) All others	ANL 1993
Contaminated zone total porosity	TPCZ	0.4	**0.37**	Unitless	Site-specific value	ANL 1993 (Section 3) USAEHA 1984
Contaminated zone field capacity	FCCZ	0.2	**0.06**	Unitless	Site-specific value	Parsons Engineering Science 1996
Contaminated zone hydraulic conductivity	HCCZ	10	**29**	m/yr	Assumed to be a factor of 10 less than the site-specific saturated zone hydraulic conductivity of 290 m/yr of the *SEAD-12 RI Report* reference.	ANL 1993 (Section 5) Parsons Engineering Science 2002
Contaminated zone b parameter	BCZ	5.3	**7.75**	Unitless	The contaminated zone b parameter was selected from Table 13.1 of the reference for the silty clay loam.	ANL 1993 (Section 13)
Humidity in air	HUMID	8	**6.6**	g/m^3	Site-specific value	Parsons Engineering Science 2002
Evapotranspiration coefficient	EVAPTR	0.5	**0.7**	Unitless	See calculation in footnote (1) below	Parsons Engineering Science 1996
Wind speed	WIND	2	**3**	m/sec	Estimated using wind rose for Syracuse, NY	Parsons Engineering Science 2002
Precipitation	PRECIP	1	**0.75**	m/yr	Site-specific value based on reported 36.1 inches per year	ANL 1993 (Section 9), Parsons Engineering Science 2002
Irrigation	RI	0.2	**0**	m/yr	No irrigation onsite.	Parsons Engineering Science 2002
Irrigation mode	IDITCH	Overhead	Overhead	Unitless	The "Overhead" and "Ditch" designations are independent of the depth of contaminated zone and have no significant impact on the RESRAD evaluation. The RESRAD default designation was selected.	ANL 1993
Runoff coefficient	RUNOFF	0.2	0.2	Unitless	The RESRAD default value was selected based on reference value for intermediate combinations of clay and loam.	ANL 1993 (Section 10)

DEFAULT AND RECOMMENDED VALUES FOR RESRAD INPUT PARAMETERS

RESRAD Version 6.5					Parameter Justification	
Parameter	**Code**	**Default Value**	**User Input Value**	**Units**	**Comments**	**Reference**
Watershed area for nearby stream or pond	WAREA	1.00E6	**13000000**	m^2	Site-specific value (Appendix E, Table 2 of the reference)	ANL 1993 (Section 17), Parsons Engineering Science 2002
Accuracy for water/soil computations	EPS	0.001	0.001	Unitless	RESRAD default used.	ANL 1993
SATURATED ZONE HYDROLOGICAL DATA						
Density of saturated zone	DENSAQ	1.5	1.5	g/cm^3	RESRAD default used.	ANL 1993 (Section 2)
Saturated zone total porosity	TPSZ	0.4	**0.37**	Unitless	Site specific value	ANL 1993 (Section 3) USAEHA 1984
Saturated zone effective porosity	EPSZ	0.2	**0.175**	Unitless	Calculated value	Parsons Engineering Science 1996
Saturated zone field capacity	FCSZ	0.2	0.2	Unitless	RESRAD default used.	ANL 1993
Saturated zone hydraulic conductivity	HCSZ	100	**290**	m/yr	Saturated zone hydraulic conductivity for clay was based on a geometric mean hydraulic conductivity of 9.22×10^{-4} identified on Page 3-19 of the reference.	Parsons Engineering Science 2002
Saturated zone hydraulic gradient	HGWT	0.02	**0.011**	Unitless	Based on the average of the northern and southern values reported on page 3-19 of the reference.	Parsons Engineering Science 2002
Saturated zone b parameter	BSZ	5.3	5.3	Unitless	RESRAD default used.	ANL 1993 (Section 13)
Water table drop rate	VWT	0.001	**0**	m/yr	Assumption	ANL 1993 (Section 18)
Well pump intake depth (meters below water table)	DWIBWT	10	**3**	M	Site specific value	Parsons Engineering Science 2002
Model for Water Transport Parameters [Non-dispersion (ND) or Mass-Balance (MB)]	MODEL	ND	ND	unitless	RESRAD default used.	ANL 1993

DEFAULT AND RECOMMENDED VALUES FOR RESRAD INPUT PARAMETERS

RESRAD Version 6.5					Parameter Justification	
Parameter	**Code**	**Default Value**	**User Input Value**	**Units**	**Comments**	**Reference**
Well pumping rate	UW	250	**50**	m^3/yr	Based on field experience, 100 ml/min is a sustainable rate for extraction of groundwater from upper aquifer during well purging in preparation for groundwater sampling (as reported in Appendix E, Table 1 of the reference)	Parsons Engineering Science 2002
UNCONTAMINATED UNSATURATED ZONE PARAMETERS						
Number of unsaturated zone strata	NS	1	1	unitless	RESRAD default used.	ANL 1993 (Section 25)
Unsaturated zone thickness	H(1)	4	**1**	m	Site-specific measurement.	
Unsaturated zone soil density	DENSUZ(1)	1.5	1.5	g/cm^3	RESRAD default used.	ANL 1993 (Section 2)
Unsaturated zone total porosity	TPUZ(1)	0.4	**0.37**	unitless	Site specific value	ANL 1993 (Section 3), USAEHA 1984
Unsaturated zone effective porosity	EPSZ(1)	0.2	**0.175**	unitless	Calculated value	Parsons Engineering Science 1996
Unsaturated zone field capacity	FCSZ(1)	0.2	0.2	unitless	RESRAD default used.	ANL 1993
Unsaturated zone hydraulic conductivity	HCSZ(1)	10	**29**	m/yr	Assumed to be a factor of 10 less than the site-specific saturated zone hydraulic conductivity of 290 m/yr of the reference.	Parsons Engineering Science 2002
Unsaturated zone b parameter	BSZ	5.3	**7.75**	unitless	The assigned value was taken from Page 3-41 of the reference.	Parsons Engineering Science 2002
ELEMENTAL DISTRIBUTION (PARTITION) COEFFICIENTS AND LEACH RATES: ACTINIUM						
Contaminated zone	DCNUCC(2 & 3)	20	2,400	cm^3/g	This assigned value was selected from Table 32.1 of the reference for the clay.	ANL 1993
Unsaturated zone	DCNUCU(2 & 3,1)	20	2,400	cm^3/g	This assigned value was selected from Table 32.1 of the reference for the clay.	ANL 1993
Saturated zone	DCNUCS(2 & 3)	20	2,400	cm^3/g	This assigned value was selected from Table 32.1 of the reference for the clay.	ANL 1993
ELEMENTAL DISTRIBUTION (PARTITION) COEFFICIENTS AND LEACH RATES: COBALT						
Contaminated zone	DCNUCC(1)	1,000	**550**	cm^3/g	This assigned value was selected from Table 32.1 of the reference for the clay.	ANL 1993

DEFAULT AND RECOMMENDED VALUES FOR RESRAD INPUT PARAMETERS

RESRAD Version 6.5					Parameter Justification	
Parameter	**Code**	**Default Value**	**User Input Value**	**Units**	**Comments**	**Reference**
Unsaturated zone	DCNUCU(1,1)	1,000	**550**	cm^3/g	This assigned value was selected from Table 32.1 of the reference for the clay.	ANL 1993
Saturated zone	DCNUCS(1)	1,000	**550**	cm^3/g	This assigned value was selected from Table 32.1 of the reference for the clay.	ANL 1993
ELEMENTAL DISTRIBUTION (PARTITION) COEFFICIENTS AND LEACH RATES: CESIUM						
Contaminated zone	DCNUCC(1)	1,900	**1,900**	cm^3/g	This assigned value was selected from Table 32.1 of the reference for the clay.	ANL 1993
Unsaturated zone	DCNUCU(1,1)	1,900	**1,900**	cm^3/g	This assigned value was selected from Table 32.1 of the reference for the clay.	ANL 1993
Saturated zone	DCNUCS(1)	1,900	**1,900**	cm^3/g	This assigned value was selected from Table 32.1 of the reference for the clay.	ANL 1993
ELEMENTAL DISTRIBUTION (PARTITION) COEFFICIENTS AND LEACH RATES: RADIUM						
Contaminated zone	DCNUCC(1)	70	**9,100**	cm^3/g	This assigned value was selected from Table 32.1 of the reference for the clay.	ANL 1993
Unsaturated zone	DCNUCU(1,1)	70	**9,100**	cm^3/g	This assigned value was selected from Table 32.1 of the reference for the clay.	ANL 1993
Saturated zone	DCNUCS(1)	70	**9,100**	cm^3/g	This assigned value was selected from Table 32.1 of the reference for the clay.	ANL 1993
ELEMENTAL DISTRIBUTION (PARTITION) COEFFICIENTS AND LEACH RATES: LEAD						
Contaminated zone	DCNUCC(1)	100	**550**	cm^3/g	This assigned value was selected from Table 32.1 of the reference for the clay.	ANL 1993
Unsaturated zone	DCNUCU(1,1)	100	**550**	cm^3/g	This assigned value was selected from Table 32.1 of the reference for the clay.	ANL 1993
Saturated zone	DCNUCS(1)	100	**550**	cm^3/g	This assigned value was selected from Table 32.1 of the reference for the clay.	ANL 1993
ELEMENTAL DISTRIBUTION (PARTITION) COEFFICIENTS AND LEACH RATES: TRITIUM						
Contaminated zone	DCNUCC(1)	0	**0.06**	cm^3/g	This assigned value was selected from Table 3.9.1 of the reference.	NRC 2000
Unsaturated zone	DCNUCU(1,1)	0	**0.06**	cm^3/g	This assigned value was selected from Table 3.9.1 of the reference.	NRC 2000

DEFAULT AND RECOMMENDED VALUES FOR RESRAD INPUT PARAMETERS

RESRAD Version 6.5					Parameter Justification	
Parameter	**Code**	**Default Value**	**User Input Value**	**Units**	**Comments**	**Reference**
Saturated zone	DCNUCS(1)	0	**0.06**	cm^3/g	This assigned value was selected from Table 3.9.1 of the reference.	NRC 2000
ELEMENTAL DISTRIBUTION (PARTITION) COEFFICIENTS AND LEACH RATES: THORIUM						
Contaminated zone	DCNUCC(1)	60000	**5,800**	cm^3/g	This assigned value was selected from Table 32.1 of the reference for the clay.	ANL 1993
Unsaturated zone	DCNUCU(1,1)	60000	**5,800**	cm^3/g	This assigned value was selected from Table 32.1 of the reference for the clay.	ANL 1993
Saturated zone	DCNUCS(1)	60000	**5,800**	cm^3/g	This assigned value was selected from Table 32.1 of the reference for the clay.	ANL 1993
ELEMENTAL DISTRIBUTION (PARTITION) COEFFICIENTS AND LEACH RATES: URANIUM						
Contaminated zone	DCNUCC(1)	50	**1,600**	cm^3/g	This assigned value was selected from Table 32.1 of the reference for the clay.	ANL 1993
Unsaturated zone	DCNUCU(1,1)	50	**1,600**	cm^3/g	This assigned value was selected from Table 32.1 of the reference for the clay.	ANL 1993
Saturated zone	DCNUCS(1)	50	**1,600**	cm^3/g	This assigned value was selected from Table 32.1 of the reference for the clay.	ANL 1993
OCCUPANCY, INHALATION AND EXTERNAL GAMMA DATA						
Inhalation rate	INHALR	8,400	**5,277** **10,512** **8,760** **11,000** **3175.5**	m^3/y	Residential (See calculation in footnote [2] below) Site Worker (1.2 m^3/hr) (Moderate Activity) Future Park Worker (1 m^3/hr) (Light Activity) Construction Worker (Upper bound of heavy outdoor activity) Recreation Receptor (Child) (8.7 m^3/day)	USEPA 1997 USDOE 1993 USEPA 1997
Mass loading for inhalation	MLINH	0.0001	**7.58E-07** **6.0E-04**	g/m^3	Non-construction (Based on 1/Particulate Emission Factor. Default value for PEF = 1.32 x 109 m3/kg). Construction Worker	USEPA, 1996 ANL 1993 (Section 35)
Exposure duration	ED	30	**30** **25** **25** **1** **5**	yr	Residential Site Worker Park Worker Construction Worker Recreational Receptor	USEPA 1991b
Inhalation shielding factor	SHF3	0.4	0.4	unitless	RESRAD default used.	ANL 1993 (Section 36)

DEFAULT AND RECOMMENDED VALUES FOR RESRAD INPUT PARAMETERS

RESRAD Version 6.5					Parameter Justification	
Parameter	**Code**	**Default Value**	**User Input Value**	**Units**	**Comments**	**Reference**
External gamma shielding factor	SHF1	0.7	**0.4**	unitless	60% shielding per EPA, cited reference used for all indoor receptors.	USEPA, 2000
Indoor time fraction	FIND	0.5	**0.655** **0** **0** **0** **0**	unitless	Residential (16.4 hours per day for 350 days/yr) Site Worker Park Worker Construction Worker Recreational Receptor	USEPA 1997 USEPA 1991b
Outdoor time fraction	FOTD	0.25	**0.08** **0.0183** **0.16** **0.228** **0.0384**	unitless	Residential (2 hours per day for 350 days/yr) Site Worker (8 hrs/day for 20 days/yr) Park Worker (8 hrs/day for 175 days/yr) Construction Worker (8 hrs/day for 250 days/hr) Recreational Receptor (24 hours for 14 days)	USEPA 1991b
Shape of the contaminated zone (circular or non-circular)	FS	Circular	Circular	unitless	RESRAD default used.	ANL 1993 (Section 50)
INGESTION PATHWAY (DIETARY DATA)						
Fruits, vegetables and grain consumption	DIET(1)	160	**147.9**	kg/yr	Residential (See calculation in footnote [3] below)	USEPA 2011
Leafy vegetable consumption	DIET(2)	14	**9.2**	kg/yr	Residential (See calculation in footnote [4] below)	USEPA 2011
Milk consumption	DIET(3)	92	**116.4**	L/yr	Residential (See calculation in footnote [5] below)	USEPA 2011
Meat and poultry consumption	DIET(4)	63	**46**	kg/yr	Residential (See calculation in footnote [6] below)	USEPA 2011
Fish consumption	DIET(5)	5.4	**5.3**	kg/yr	Residential (See calculation in footnote [7] below)	USEPA 2011
Other seafood consumption	DIET(6)	0.9	0.9	kg/yr	RESRAD default used.	ANL 1993
Soil ingestion rate	SOIL	36.5	**43.8** **36.5** **36.5** **175.2** **73**	g/yr	Residential (See calculation in footnote [8] below) Site Worker = (100 mg/day * 365 days/yr * 1E-3 g/mg) Park Worker= (100 mg/day * 365 days/yr * 1E-3 g/mg) Construction Worker = (480 mg/day * 365 days/yr * 1E-3 g/mg) Recreational Receptor = (200 mg/day * 365 days/yr)	USEPA 1991b
Drinking water intake	DW1	510	510	L/yr	RESRAD default used.	ANL 1993
Contamination fraction of drinking water	FDW	1	1	unitless	RESRAD default used.	ANL 1993
Contamination fraction of household water	FHHW	1	N/A	unitless	Radon pathway is not selected; hence this parameter is not applicable	ANL 1993
Contamination fraction of livestock water	FLW	1	1	unitless	Pathway active only for residential receptor	ANL 1993
Contamination fraction of irrigation water	FIRW	1	1	unitless	Pathway active only for residential receptor	ANL 1993
Contamination fraction of aquatic food	FR9	0.5	0.5	unitless	RESRAD default used.	ANL 1993

DEFAULT AND RECOMMENDED VALUES FOR RESRAD INPUT PARAMETERS

RESRAD Version 6.5					Parameter Justification	
Parameter	**Code**	**Default Value**	**User Input Value**	**Units**	**Comments**	**Reference**
Contaminated fraction of plant food	FPLANT	-1	-1	unitless	RESRAD default used.	ANL 1993
Contaminated fraction of meat	FMEAT	-1	-1	unitless	RESRAD default used.	ANL 1993
Contaminated fraction of milk	FMILK	-1	-1	unitless	RESRAD default used.	ANL 1993
INGESTION PATHWAY (NON-DIETARY DATA)						
Livestock fodder intake for meat	LP15	68	68	kg/day	RESRAD default used.	ANL 1993
Livestock fodder intake for milk	LP16	55	55	kg/day	RESRAD default used.	ANL 1993
Livestock water intake for meat	LW15	50	50	L/day	RESRAD default used.	ANL 1993
Livestock water intake for milk	LW15	160	160	L/day	RESRAD default used.	ANL 1993
Livestock intake of soil	LS1	0.5	0.5	kg/day	RESRAD default used.	ANL 1993
Mass loading for foliar deposition	MLFD	0.0001	0.0001	g/m^3	RESRAD default used.	ANL 1993
Depth of soil mixing layer	DM	0.15	0.15	m	RESRAD default used.	ANL 1993 (Section 35)
Depth of roots	DROOT	0.9	0.9	m	RESRAD default used.	ANL 1993
Groundwater fractional usage: Drinking water	FGWDW	1	1	unitless	RESRAD default used.	ANL 1993
Groundwater fractional usage: Household water	FGWHH	1	1	unitless	RESRAD default used.	ANL 1993
Groundwater fractional usage: Livestock water	FGWLW	1	1	unitless	RESRAD default used.	ANL 1993
Groundwater fractional usage: Irrigation water	FGWIR	1	1	unitless	RESRAD default used.	ANL 1993
PLANT TRANSPORT FACTORS						
Wet weight crop yield: non-leafy vegetables	YV(1)	0.7	0.7	kg/m^2	RESRAD default used.	ANL 1993
Wet weight crop yield: leafy vegetables	YV(2)	1.5	1.5	kg/m^2	RESRAD default used.	ANL 1993
Wet weight crop yield: fodder	YV(3)	1.1	1.1	kg/m^2	RESRAD default used.	ANL 1993
Length of growing season: non-leafy	TE(1)	0.17	0.17	years	RESRAD default used.	ANL 1993

DEFAULT AND RECOMMENDED VALUES FOR RESRAD INPUT PARAMETERS

RESRAD Version 6.5					Parameter Justification	
Parameter	**Code**	**Default Value**	**User Input Value**	**Units**	**Comments**	**Reference**
vegetables						
Length of growing season: leafy vegetables	TE(2)	0.25	0.25	years	RESRAD default used.	ANL 1993
Length of growing season: fodder	TE(3)	0.08	0.08	years	RESRAD default used.	ANL 1993
Translocation factor: non-leafy vegetables	TIV(1)	0.1	0.1	unitless	RESRAD default used.	ANL 1993
Translocation factor: leafy vegetables	TIV(2)	1	1	unitless	RESRAD default used.	ANL 1993
Translocation factor: fodder	TIV(3)	1	1	unitless	RESRAD default used.	ANL 1993
Weathering removal constant	WLAM	20	20	y^{-1}	RESRAD default used.	ANL 1993
Wet foliar interception fraction: non-leafy vegetables	RWET(1)	0.25	0.25	unitless	RESRAD default used.	ANL 1993
Wet foliar interception fraction: leafy vegetables	RWET(2)	0.25	0.25	unitless	RESRAD default used.	ANL 1993
Wet foliar interception fraction: fodder	RWET(3)	0.25	0.25	unitless	RESRAD default used.	ANL 1993
Dry foliar interception fraction: non-leafy vegetables	RDRY(1)	0.25	0.25	unitless	RESRAD default used.	ANL 1993
Dry foliar interception fraction: leafy vegetables	RDRY(2)	0.25	0.25	unitless	RESRAD default used.	ANL 1993
Dry foliar interception fraction: fodder	RDRY(3)	0.25	0.25	unitless	RESRAD default used.	ANL 1993
STORAGE TIMES BEFORE USE						
Fruits, non-leafy vegetables and grain	STOR_T(1)	14	14	days	RESRAD default used.	ANL 1993
Leafy vegetables	STOR_T(2)	1	1	days	RESRAD default used.	ANL 1993
Milk	STOR_T(3)	1	1	days	RESRAD default used.	ANL 1993
Meat	STOR_T(4)	20	20	days	RESRAD default used.	ANL 1993
Fish	STOR_T(5)	7	7	days	RESRAD default used.	ANL 1993
Crustacea and mollusks	STOR_T(6)	7	7	days	RESRAD default used.	ANL 1993
Well water	STOR_T(7)	1	1	days	RESRAD default used.	ANL 1993
Surface water	STOR_T(8)	1	1	days	RESRAD default used.	ANL 1993
Livestock fodder	STOR_T(9)	45	45	days	RESRAD default used.	ANL 1993

Footnotes

N/A Not Applicable

(1) **Calculation of Evapotranspiration Coefficient**, RESRAD Manual, Version 5, page 198, with following parameters from Parsons Engineering Science, Final Groundwater Modeling Report at the Ash Landfill Site, June 1996.
I = Infiltration Rate, m/yr (7 in/year = 0.18 m/yr)
Ce = Evapotranspiration Coefficient
Cr = runoff coefficient (0.2)
Pr = Precipitation rate, annual rainfall, m/yr (0.75 m/yr)
Irr = Irrigation rate (0 m/yr)

(2) Determination of Inhalation Rate for the Residential Receptors

Inhalation Rate for Child (0-1)

Age Group	Month	Mean Inhalation Rate (m^3/day)	References
0-1	1	3.6	**Mean value from Table 6-1 of EFH (USEPA, 2011)**
1-3	2	3.5	
4-6	3	4.1	
7-12	6	5.4	
Weighted Inhalation Rate for Child (0-1)		**4.61**	

Inhalation Rate for Child (0-6)

Age Group	Years	Rate (m^3/day)	References
0-1	1	4.61	**Mean value from Table 6-1 of EFH (USEPA, 2011)**
1-2	1	8	
2-3	1	8.9	
3-6	3	10.1	
Weighted Intake Rate for Child (0-6)		**8.64**	

Inhalation Rate for Adult

Age Group	Years	Rate (m^3/day)	References
18-21	3	16.3	**Mean Value from Table 6-1 of EFH (USEPA, 2011)**
21-31	10	15.7	
31-41	10	16	
41-42	1	16	
Weighted Intake Rate for Adult (18-42)		**15.91**	

Weighted Total Inhalation Rate

Receptor	Rate (m^3/day)	Intake Rate (m3/yr)	Exposure Duration (yr)
Child	8.64	3151.78	6
Adult	15.91	5808.06	24
Weighted Total Inhalation Rate (m^3/yr)[1]			**5276.8**

Footnote

[1] Weighted total inhalation rate = (3151.78*6 + 5808.06*24)/(24+6)

(3) Determination of Total Fruits, Vegetables and Grain Consumption Rate for Residential Receptor

Body Weight for Child (0-1)

Age Group	Month	Mean Weight (Kg)	References
0-1	1	4.8	Mean value from Table ES-1 of EFH (USEPA, 2011)
1-3	2	5.9	
3-6	3	7.4	
6-12	6	9.2	
Weighted Body Weight for Child (0-1)		**7.83**	

Consumption Rate for Child (0-6)

Age Group	Years	Fruit Intake (g/kg-day)	Vegetable Intake (g/kg-day)	Grain Intake (g/kg-day)	Total Intake Rate (g/kg-day)	Body Weight (kg)	Intake Rate (g/day)	References
0-1	1	6.2	5	3.1	14.3	7.83	112.0	Mean Value from Table ES-1 of EFH (USEPA, 2011)
1-2	1	7.8	6.7	6.4	20.9	11.4	238.3	
2-3	1	7.8	6.7	6.4	20.9	13.8	288.4	
3-6	3	4.6	5.4	6.2	16.2	18.6	301.3	
					Weighted Intake Rate		**257.10**	

Consumption Rate for Adult

Age Group	Years	Fruit Intake (g/kg-day)	Vegetable Intake (g/kg-day)	Grain Intake (g/kg-day)	Total Intake Rate (g/kg-day)	Body Weight (kg)	Intake Rate (g/day)	References
18-21	3	0.9	2.3	2.4	5.6	71.6	401.0	Mean Value from Table ES-1 of EFH (USEPA, 2011)
21-42	21	0.9	2.5	2.2	5.6	80	448.0	
					Weighted Intake Rate		**442.12**	

Age-Weighted Total Fruits, Vegetables and Grains Consumption Rate

Receptor	Intake Rate (g/day)	Intake Rate (kg/yr)	Exposure Duration (yr)	Weighted Consumption Rate (kg/yr)
Child	257.10	93.84	6	**147.9**
Adult	442.12	161.37	24	

Footnote

[1] Age-weighted total consumption rate = (93.84*6 + 161.37*24)/(24+6)

(4) Determination of Total Leafy Vegetables Consumption Rate for Residential Receptor

Based on USDA report, *Food Consumption, Prices and Expenditures 1970-1997* (Putnam et al., 1999), fresh vegetables accounted for 44% of the total vegetables consumed during the 25-year period. The fraction of non-leafy fresh vegetables consumed from 1972 – 1997 was estimated at 0.67 of the total fresh vegetable consumption rate.

The above statistics were considered during the estimation of leafy vegetable consumption rate for residential receptor.

Body Weight for Child (0-1)

Age Group	Month	Mean Weight (Kg)	References
0-1	1	4.8	**Mean value from Table ES-1 of EFH (USEPA, 2011)**
1-3	2	5.9	
3-6	3	7.4	
6-12	6	9.2	
Weighted Body Weight for Child (0-1)		**7.83**	

Consumption Rate for Child (0-6)

Age Group	Years	Vegetable Intake (g/kg-day)	Leafy Vegetable Intake Rate (g/kg-day)[1]	Body Weight (kg)	Intake Rate (g/day)	References
0-1	1	5	0.726	7.83	5.7	**Mean Value from Table ES-1 of EFH (USEPA, 2011)**
1-2	1	6.7	0.97	11.4	11.1	
2-3	1	6.7	0.97	13.8	13.4	
3-6	3	5.4	0.78	18.6	14.6	
			Weighted Intake Rate		**12.33**	

[1] Leafy Vegetable Intake Rate = (Vegetable Intake x 44% x 33%)

Consumption Rate for Adult

Age Group	Years	Vegetable Intake (g/kg-day)	Leafy Vegetable Intake Rate (g/kg-day)	Body Weight (kg)	Intake Rate (g/day)	References
18-21	3	2.3	0.33	71.6	23.9	**Mean Value from Table ES-1 of EFH (USEPA, 2011)**
21-42	21	2.5	0.36	80	29.0	
			Weighted Intake Rate		**28.40**	

Age-Weighted Total Fruits, Vegetables and Grains Consumption Rate

Receptor	Intake Rate (g/day)	Intake Rate (kg/yr)	Exposure Duration (yr)	Weighted Consumption Rate (kg/yr)
Child	12.33	4.50	6	**9.2**
Adult	28.40	10.37	24	

Footnote

[1] Age-weighted total leafy vegetable consumption rate = (4.5*6 + 10.37*24)/(24+6)

(5) Determination of Milk Consumption Rate for Residential Receptor

Body Weight for Child (0-1)

Age Group	Month	Mean Weight (Kg)	References
0-1	1	4.8	Mean value from Table ES-1 of EFH (USEPA, 2011)
1-3	2	5.9	
3-6	3	7.4	
6-12	6	9.2	
Weighted Body Weight for Child (0-1)		**7.83**	

Consumption Rate for Child (0-6)

Age Group	Years	Rate (g/kg-day)	Body Weight (kg)	Intake Rate (g/day)	References
0-1	1	10.1	7.83	79.1	Mean Value from Table ES-1 of EFH (USEPA, 2011)
1-2	1	43.2	11.4	492.5	
2-3	1	43.2	13.8	596.2	
3-6	3	24	18.6	446.4	
		Weighted Intake Rate		**417.82**	

Consumption Rate for Adult

Age Group	Years	Rate (g/kg-day)	Body Weight (kg)	Intake Rate (g/day)	References
18-21	3	5.5	71.6	393.8	Mean Value from Table ES-1 of EFH (USEPA, 2011)
21-42	21	3.5	80	280.0	
		Weighted Intake Rate		**294.23**	

Age-Weighted Total Milk Consumption Rate

Receptor	Intake Rate (g/day)	Intake Rate (L/yr)	Exposure Duration (yr)	Weighted Consumption Rate (L/yr)
Child	417.82	152.50	6	**116.4**
Adult	294.23	107.39	24	

Footnote

[1] Age-weighted total milk consumption rate = (152.5*6 + 107.39*24)/(24+6)

(6) Determination of Meat and Poultry Consumption Rate for Residential Receptor

Body Weight for Child (0-1)

Age Group	Month	Mean Weight (Kg)	References
0-1	1	4.8	**Mean value from Table ES-1 of EFH (USEPA, 2011)**
1-3	2	5.9	
3-6	3	7.4	
6-12	6	9.2	
Weighted Body Weight for Child (0-1)		**7.83**	

Consumption Rate for Child (0-6)

Age Group	Years	Rate (g/kg-day)	Body Weight (kg)	Intake Rate (g/day)	References
0-1	1	1.2	7.83	9.4	**Mean Value from Table ES-1 of EFH (USEPA, 2011)**
1-2	1	4	11.4	45.6	
2-3	1	4	13.8	55.2	
3-6	3	3.9	18.6	72.5	
		Weighted Intake Rate		**54.64**	

Consumption Rate for Adult

Age Group	Years	Rate (g/kg-day)	Body Weight (kg)	Intake Rate (g/day)	References
18-21	3	2	71.6	143.2	**Mean Value from Table ES-1 of EFH (2011)**
21-42	21	1.8	80	144.0	
		Weighted Intake Rate		**143.90**	

Age-Weighted Total Meat Consumption Rate

Receptor	Intake Rate (g/day)	Intake Rate (kg/yr)	Exposure Duration (yr)	Weighted Consumption Rate (Kg/yr)
Child	54.64	19.94	6	**46.0**
Adult	143.90	52.52	24	

Footnote

[1] Age-weighted total meat consumption rate = (19.94*6 + 52.52*24)/(24+6)

(7) Determination of Fish Consumption Rate for Residential Receptor

Body Weight for Child (0-1)

Age Group	Month	Mean Weight (Kg)	References
0-1	1	4.8	**Mean value from Table ES-1 of EFH (USEPA, 2011)**
1-3	2	5.9	
3-6	3	7.4	
6-12	6	9.2	
Weighted Body Weight for Child (0-1)		**7.83**	

Consumption Rate for Child (0-6)

Age Group	Years	Rate (g/kg-day)	Body Weight (kg)	Intake Rate (g/day)	References
0-1	1	0.04	7.83	0.3	**Mean Value from Table ES-1 of EFH (USEPA, 2011)**
1-2	1	0.26	11.4	3.0	
2-3	1	0.26	13.8	3.6	
3-6	3	0.24	18.6	4.5	
		Weighted Intake Rate		**3.38**	

Consumption Rate for Adult

Age Group	Years	Rate (g/kg-day)	Body Weight (kg)	Intake Rate (g/day)	References
18-21	3	0.13	71.6	9.3	**Mean Value from Table ES-1 of EFH (USEPA, 2011)**
21-42	21	0.23	80	18.4	
		Weighted Intake Rate		**17.26**	

Age-Weighted Total Fish Consumption Rate

Receptor	Intake Rate (g/day)	Intake Rate (kg/yr)	Exposure Duration (yr)	Weighted Consumption Rate (Kg/yr)
Child	3.38	1.23	6	**5.3**
Adult	17.26	6.30	24	

Footnote

[1] Age-weighted total fish consumption rate = (1.23*6 + 6.3*24)/(24+6)

(8) Determination of Soil Ingestion Rate for Residential Receptor

Receptor	Intake Rate (mg/day)	Intake Rate (g/yr)	Exposure Duration (yr)	Weighted Consumption Rate (g/yr)
Child	200	73.0	6	**43.8**
Adult	100	36.5	24	

Footnote

[1] Age-weighted total ingestion rate = (73*6 + 36.5*24)/(24+6)

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ATTACHMENT F

Toxicological Properties of ROPCs

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Table F-1: Dose Conversation Factor for ROPCs

ROPC[a]	Dose Conversation Factors (mrem/pCi)		
	Ingestion	Inhalation	External Exposure
Actinium-227+D [b]	1.48E-02	6.72E+00	2.01
Cesium-137+D [b]	5.00E-05	3.19E-05	3.41
Tritium	6.40E-08	6.40E-08	0
Lead-210+D [b]	7.28E-03	2.32E-02	6.05E-03
Promethium-147	1.05E-06	5.01E-05	3.92E-05
Radium-226+D [b]	1.32E-03	8.59E-03	1.12E+01
Radium-228+D [b]	1.44E-03	5.08E-03	5.98E+00
Thorium-230	5.48E-04	3.26E-01	1.21E-03

[a] ROPC = Radionuclides of Potential Concern.

[b] +D slope factors include contributions from short-lived daughter products.

Table F-2: Risk Coefficient Values for ROPCs

ROPC[a]	Cancer Slope Factors (Risk/pCi)						
	Water Ingestion	Food Ingestion	Soil Ingestion	Inhalation	External Exposure[b]	EPA Class	ICRP Lung Class[c]
Actinium-227+D [d]	4.86E-10	6.53E-10	6.53E-10	2.13E-07	1.47E-06	A	S
Cesium-137+D [d]	3.04E-11	3.74E-11	3.74E-11	1.12E-10	2.55E-06	A	F
Tritium	1.12E-13	1.44E-13	1.44E-13	8.51E-13	0.00E+00	A	V
Lead-210+D [d]	2.66E-09	3.44E-09	2.66E-09	3.08E-08	4.21E-09	A	M
Promethium-147	1.69E-12	2.48E-12	4.88E-12	1.61E-11	3.21E-11	A	S
Radium-226+D [d]	3.86E-10	5.15E-10	7.30E-10	2.83E-08	8.49E-06	A	M
Radium-228+D [d]	1.04E-09	1.43E-09	2.29E-09	4.37E-08	4.53E-06	A	M
Thorium-230	9.10E-11	1.19E-10	2.02E-10	3.40E-08	8.19E-10	A	S

Foot note

[a] ROPC = Radionuclides of Potential Concern.

[b] Units for external exposure cancer slope factor (radionuclides only) are (risk/year per pCi/g soil)

[c] ICRP Lung Classification categories: F = Fast (Particulate); M = Medium (Particulate); S = Slow (Particulate); V = Vapo

[d] +D slope factors include contributions from short-lived daughter products

ATTACHMENT G

Receptor Results and Output Summary Dose and Risk Reports

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ATTACHMENT G-1

DOSE AND RISK CALCULATION

AND

OUTPUT DOSE AND RISK ASSESSMENTS SUMMARY

REPORTS

FOR DISPOSAL PIT A/B UNDER CURRENT SITE WORKER

Table G-1-1: Results of Residual Dose Assessment for Disposal Pit A/B under Current Site Worker Scenario

Nuclide	EPC (pCi/g)	Dose to Source Ratio ((mrem/yr)/(pCi/g))							
		T = 0 Year				T=1000 Years			
		Ground	Inhalation	Soil	All Pathways	Ground	Inhalation	Soil	All Pathways
Cs-137	0.39	5.0E-02	5.8E-10	3.3E-05	5.0E-02	2.3E-12	2.0E-20	1.1E-15	2.3E-12
H-3	8.87	0.0E+00	2.3E-07	5.8E-09	2.4E-07	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Th-230	0.266	5.4E-05	6.0E-06	3.7E-04	4.3E-04	3.3E-03	3.0E-06	2.6E-04	3.5E-03

Nuclide	Dose (mrem/yr)							
	T = 0 Year				T=1000 Years			
	Ground	Inhalation	Soil	All Pathways	Ground	Inhalation	Soil	All Pathways
Cs-137	1.9E-02	2.2E-10	1.3E-05	1.9E-02	8.8E-13	7.6E-21	4.4E-16	8.8E-13
H-3	0.0E+00	2.1E-06	5.2E-08	2.1E-06	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Th-230	1.4E-05	1.6E-06	9.7E-05	1.1E-04	8.7E-04	8.1E-07	6.9E-05	9.4E-04
		Cumulative Dose		**2.0E-02**		**Cumulative Dose**		9E-04

Table G-1-2: Results of Residual Risk Assessment for Disposal Pit A/B under Current Site Worker Scenario

Nuclide	EPC (pCi/g)	Risk to Source Ratio (1/(pCi/g))							
		T = 0 Year				T=1000 Years			
		Ground	Inhalation	Soil	All Pathways	Ground	Inhalation	Soil	All Pathways
Cs-137	0.39	9.4E-07	5.1E-14	6.2E-10	9.4E-07	4.3E-17	1.7E-24	2.1E-20	4.3E-17
H-3	8.87	0.0E+00	5.7E-10	2.4E-12	5.7E-10	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Th-230	0.266	3.5E-10	1.6E-11	2.0E-09	2.3E-09	6.2E-08	8.3E-12	1.9E-09	6.4E-08

Nuclide	Risk (unitless)							
	T = 0 Year				T=1000 Years			
	Ground	Inhalation	Soil	All Pathways	Ground	Inhalation	Soil	All Pathways
Cs-137	3.7E-07	2.0E-14	2.4E-10	3.7E-07	1.7E-17	6.8E-25	8.2E-21	1.7E-17
H-3	0.0E+00	5.0E-09	2.1E-11	5.0E-09	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Th-230	9.2E-11	4.1E-12	5.3E-10	6.2E-10	1.6E-08	2.2E-12	4.9E-10	1.7E-08
		Cumulative Risk		**4E-07**		**Cumulative Risk**		1.7E-08

Summary : Residual Dose and Risk Assessment Under Current Site Worker Scenario
File : C:\USERS\MRAHMAN\DOCUMENTS\OLD RESRAD FILES\SEAD 12 PIT AB-SITE WORKER.RAD

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Dose Conversion Factor (and Related) Parameter Summary
Dose Library: FGR 12 & FGR 11

0

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation (mrem/yr)/(pCi/g)			
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1(1)
A-1	Ba-137m (Source: FGR 12)	3.606E+00	3.606E+00	DCF1(2)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1(3)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1(4)
A-1	Cs-137 (Source: FGR 12)	7.510E-04	7.510E-04	DCF1(5)
A-1	H-3 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1(6)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1(7)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1(8)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1(9)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1(10)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1(11)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1(12)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1(13)
A-1	Th-230 (Source: FGR 12)	1.209E-03	1.209E-03	DCF1(14)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1(15)
B-1	Dose conversion factors for inhalation mrem/pCi:			
B-1	Cs-137+D	3.190E-05	3.190E-05	DCF2(1)
B-1	H-3	6.400E-08	6.400E-08	DCF2(2)
B-1	Pb-210+D	2.320E-02	1.360E-02	DCF2(3)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2(4)
B-1	Th-230	3.260E-01	3.260E-01	DCF2(5)
D-1	Dose conversion factors for ingestion mrem/pCi:			
D-1	Cs-137+D	5.000E-05	5.000E-05	DCF3(1)
D-1	H-3	6.400E-08	6.400E-08	DCF3(2)
D-1	Pb-210+D	7.276E-03	5.370E-03	DCF3(3)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3(4)
D-1	Th-230	5.480E-04	5.480E-04	DCF3(5)
D-34	Food transfer factors:			
D-34	Cs-137+D plant/soil concentration ratio dimensionless	4.000E-02	4.000E-02	RTF(11)
D-34	Cs-137+D beef/livestock-intake ratio (pCi/kg)/(pCi/d)	3.000E-02	3.000E-02	RTF(12)
D-34	Cs-137+D milk/livestock-intake ratio (pCi/L)/(pCi/d)	8.000E-03	8.000E-03	RTF(13)
D-34				
D-34	H-3 plant/soil concentration ratio dimensionless	4.800E+00	4.800E+00	RTF(21)
D-34	H-3 beef/livestock-intake ratio (pCi/kg)/(pCi/d)	1.200E-02	1.200E-02	RTF(22)
D-34	H-3 milk/livestock-intake ratio (pCi/L)/(pCi/d)	1.000E-02	1.000E-02	RTF(23)
D-34				
D-34	Pb-210+D plant/soil concentration ratio dimensionless	1.000E-02	1.000E-02	RTF(31)

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D-34  Pb-210+D   beef/livestock-intake ratio (pCi/kg)/(pCi/d)    8.000E-04  8.000E-04  RTF(  32)
D-34  Pb-210+D   milk/livestock-intake ratio (pCi/L)/(pCi/d)     3.000E-04  3.000E-04  RTF(  33)
D-34
D-34  Ra-226+D   plant/soil concentration ratio dimensionless    4.000E-02  4.000E-02  RTF(  41)
D-34  Ra-226+D   beef/livestock-intake ratio (pCi/kg)/(pCi/d)    1.000E-03  1.000E-03  RTF(  42)
D-34  Ra-226+D   milk/livestock-intake ratio (pCi/L)/(pCi/d)     1.000E-03  1.000E-03  RTF(  43)
D-34
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Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: FGR 12 & FGR 11

Menu		Parameter	Current Value#	Base Case*	Parameter Name
D-34	Th-230	plant/soil concentration ratio dimensionless	1.000E-03	1.000E-03	RTF(51)
D-34	Th-230	beef/livestock-intake ratio (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(52)
D-34	Th-230	milk/livestock-intake ratio (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(53)
D-5	Bioaccumulation factors fresh water L/kg:				
D-5	Cs-137+D	fish	2.000E+03	2.000E+03	BIOFAC(11)
D-5	Cs-137+D	crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(12)
D-5					
D-5	H-3	fish	1.000E+00	1.000E+00	BIOFAC(21)
D-5	H-3	crustacea and mollusks	1.000E+00	1.000E+00	BIOFAC(22)
D-5					
D-5	Pb-210+D	fish	3.000E+02	3.000E+02	BIOFAC(31)
D-5	Pb-210+D	crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(32)
D-5					
D-5	Ra-226+D	fish	5.000E+01	5.000E+01	BIOFAC(41)
D-5	Ra-226+D	crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(42)
D-5					
D-5	Th-230	fish	1.000E+02	1.000E+02	BIOFAC(51)
D-5	Th-230	crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(52)

#For DCF1(xxx) only factors are for infinite depth & area. See ETFG table in Ground Pathway of Detailed Report.
*Base Case means Default.Lib w/o Associate Nuclide contributions.

Site-Specific Parameter Summary

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	2.160E+03	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E-01	2.000E+00	---	THICK0
R011	Fraction of contamination that is submerged	0.000E+00	0.000E+00	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	not used	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	2.500E+01	3.000E+01	---	BRDL
R011	Time since placement of material (yr)	0.000E+00	0.000E+00	---	TI
R011	Times for calculations (yr)	1.000E+00	1.000E+00	---	T(2)
R011	Times for calculations (yr)	2.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	3.000E+00	1.000E+01	---	T(4)
R011	Times for calculations (yr)	1.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	3.000E+01	1.000E+02	---	T(6)
R011	Times for calculations (yr)	1.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	3.000E+02	1.000E+03	---	T(8)
R011	Times for calculations (yr)	1.000E+03	0.000E+00	---	T(9)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): Cs-137	1.000E+00	0.000E+00	---	S1(1)
R012	Initial principal radionuclide (pCi/g): H-3	1.000E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Th-230	1.000E+00	0.000E+00	---	S1(5)
R012	Concentration in groundwater (pCi/L): Cs-137	not used	0.000E+00	---	W1(1)
R012	Concentration in groundwater (pCi/L): H-3	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Th-230	not used	0.000E+00	---	W1(5)
R013	Cover depth (m)	0.000E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)	not used	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	1.280E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	6.000E-05	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	3.700E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	6.000E-02	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	2.900E+01	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	7.750E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	3.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	6.600E+00	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	7.000E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	7.500E-01	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	0.000E+00	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	not used	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	not used	1.000E-03	---	EPS

R014	Density of saturated zone (g/cm**3)	not used	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	not used	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	not used	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	not used	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	not used	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	not used	2.000E-02	---	HGWT
R014	Saturated zone b parameter	not used	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	not used	1.000E-03	---	VWT

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R014	Well pump intake depth (m below water table)	not used	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	not used	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	not used	2.500E+02	---	UW
R015	Number of unsaturated zone strata	not used	1	---	NS
R015	Unsat. zone 1 thickness (m)	not used	4.000E+00	---	H(1)
R015	Unsat. zone 1 soil density (g/cm**3)	not used	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1 total porosity	not used	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1 effective porosity	not used	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1 field capacity	not used	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1 soil-specific b parameter	not used	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1 hydraulic conductivity (m/yr)	not used	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Cs-137				
R016	Contaminated zone (cm**3/g)	1.900E+03	4.600E+03	---	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	not used	4.600E+03	---	DCNUCU(11)
R016	Saturated zone (cm**3/g)	not used	4.600E+03	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.934E-04	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for H-3				
R016	Contaminated zone (cm**3/g)	6.000E-02	0.000E+00	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	not used	0.000E+00	---	DCNUCU(21)
R016	Saturated zone (cm**3/g)	not used	0.000E+00	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.353E+00	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for Th-230				
R016	Contaminated zone (cm**3/g)	5.800E+03	6.000E+04	---	DCNUCC(5)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU(51)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS(5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.616E-04	ALEACH(5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(5)
R016	Distribution coefficients for daughter Pb-210				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	not used	1.000E+02	---	DCNUCU(31)
R016	Saturated zone (cm**3/g)	not used	1.000E+02	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.354E-03	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)
R016	Distribution coefficients for daughter Ra-226				

R016	Contaminated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCC(4)
R016	Unsaturated zone 1 (cm**3/g)	not used	7.000E+01	---	DCNUCU(41)
R016	Saturated zone (cm**3/g)	not used	7.000E+01	---	DCNUCS(4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.335E-02	ALEACH(4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(4)
R017	Inhalation rate (m**3/yr)	1.051E+04	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	7.580E-07	1.000E-04	---	MLINH

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R017	Exposure duration	2.500E+01	3.000E+01	---	ED
R017	Shielding factor inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor external gamma	4.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	0.000E+00	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	1.830E-02	2.500E-01	---	FOTD
R017	Shape factor flag external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m) ring 1:	not used	5.000E+01	---	RAD_SHAPE(1)
R017	Outer annular radius (m) ring 2:	not used	7.071E+01	---	RAD_SHAPE(2)
R017	Outer annular radius (m) ring 3:	not used	0.000E+00	---	RAD_SHAPE(3)
R017	Outer annular radius (m) ring 4:	not used	0.000E+00	---	RAD_SHAPE(4)
R017	Outer annular radius (m) ring 5:	not used	0.000E+00	---	RAD_SHAPE(5)
R017	Outer annular radius (m) ring 6:	not used	0.000E+00	---	RAD_SHAPE(6)
R017	Outer annular radius (m) ring 7:	not used	0.000E+00	---	RAD_SHAPE(7)
R017	Outer annular radius (m) ring 8:	not used	0.000E+00	---	RAD_SHAPE(8)
R017	Outer annular radius (m) ring 9:	not used	0.000E+00	---	RAD_SHAPE(9)
R017	Outer annular radius (m) ring 10:	not used	0.000E+00	---	RAD_SHAPE(10)
R017	Outer annular radius (m) ring 11:	not used	0.000E+00	---	RAD_SHAPE(11)
R017	Outer annular radius (m) ring 12:	not used	0.000E+00	---	RAD_SHAPE(12)
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA(1)
R017	Ring 2	not used	2.732E-01	---	FRACA(2)
R017	Ring 3	not used	0.000E+00	---	FRACA(3)
R017	Ring 4	not used	0.000E+00	---	FRACA(4)
R017	Ring 5	not used	0.000E+00	---	FRACA(5)
R017	Ring 6	not used	0.000E+00	---	FRACA(6)
R017	Ring 7	not used	0.000E+00	---	FRACA(7)
R017	Ring 8	not used	0.000E+00	---	FRACA(8)
R017	Ring 9	not used	0.000E+00	---	FRACA(9)
R017	Ring 10	not used	0.000E+00	---	FRACA(10)
R017	Ring 11	not used	0.000E+00	---	FRACA(11)
R017	Ring 12	not used	0.000E+00	---	FRACA(12)
R018	Fruits vegetables and grain consumption (kg/yr)	not used	1.600E+02	---	DIET(1)
R018	Leafy vegetable consumption (kg/yr)	not used	1.400E+01	---	DIET(2)
R018	Milk consumption (L/yr)	not used	9.200E+01	---	DIET(3)
R018	Meat and poultry consumption (kg/yr)	not used	6.300E+01	---	DIET(4)
R018	Fish consumption (kg/yr)	not used	5.400E+00	---	DIET(5)
R018	Other seafood consumption (kg/yr)	not used	9.000E-01	---	DIET(6)
R018	Soil ingestion rate (g/yr)	3.650E+01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	not used	5.100E+02	---	DWI

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R018  Contamination fraction of drinking water          not used   1.000E+00              ---              FDW
R018  Contamination fraction of household water         not used   1.000E+00              ---              FHHW
R018  Contamination fraction of livestock water         not used   1.000E+00              ---              FLW
R018  Contamination fraction of irrigation water        not used   1.000E+00              ---              FIRW
R018  Contamination fraction of aquatic food            not used   5.000E-01              ---              FR9
R018  Contamination fraction of plant food              not used  -1                      ---              FPLANT
R018  Contamination fraction of meat                    not used  -1                      ---              FMEAT
R018  Contamination fraction of milk                    not used  -1                      ---              FMILK
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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R019	Livestock fodder intake for meat (kg/day)	not used	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	not used	5.500E+01	---	LFI6
R019	Livestock water intake for meat (L/day)	not used	5.000E+01	---	LWI5
R019	Livestock water intake for milk (L/day)	not used	1.600E+02	---	LWI6
R019	Livestock soil intake (kg/day)	not used	5.000E-01	---	LSI
R019	Mass loading for foliar deposition (g/m**3)	not used	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	1.500E-01	1.500E-01	---	DM
R019	Depth of roots (m)	not used	9.000E-01	---	DROOT
R019	Drinking water fraction from ground water	not used	1.000E+00	---	FGWDW
R019	Household water fraction from ground water	not used	1.000E+00	---	FGWHH
R019	Livestock water fraction from ground water	not used	1.000E+00	---	FGWLW
R019	Irrigation fraction from ground water	not used	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	not used	7.000E-01	---	YV(1)
R19B	Wet weight crop yield for Leafy (kg/m**2)	not used	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	not used	1.100E+00	---	YV(3)
R19B	Growing Season for Non-Leafy (years)	not used	1.700E-01	---	TE(1)
R19B	Growing Season for Leafy (years)	not used	2.500E-01	---	TE(2)
R19B	Growing Season for Fodder (years)	not used	8.000E-02	---	TE(3)
R19B	Translocation Factor for Non-Leafy	not used	1.000E-01	---	TIV(1)
R19B	Translocation Factor for Leafy	not used	1.000E+00	---	TIV(2)
R19B	Translocation Factor for Fodder	not used	1.000E+00	---	TIV(3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RDRY(1)
R19B	Dry Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RDRY(2)
R19B	Dry Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RDRY(3)
R19B	Wet Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RWET(1)
R19B	Wet Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RWET(2)
R19B	Wet Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RWET(3)
R19B	Weathering Removal Constant for Vegetation	not used	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm**3)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (1/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits non-leafy vegetables and grain	1.400E+01	1.400E+01	---	STOR_T(1)

STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA(1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA(2)
TITL	Number of graphical time points	32	---	---	NPTS
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	1	---	---	KYMAX

Summary of Pathway Selections

Pathway	User Selection
1 -- external gamma	active
2 -- inhalation (w/o radon)	active
3 -- plant ingestion	suppressed
4 -- meat ingestion	suppressed
5 -- milk ingestion	suppressed
6 -- aquatic foods	suppressed
7 -- drinking water	suppressed
8 -- soil ingestion	active
9 -- radon	suppressed
Find peak pathway doses	suppressed

Summary : Residual Dose and Risk Assessment Under Current Site Worker Scenario
File : C:\USERS\MRAHMAN\DOCUMENTS\OLD RESRAD FILES\SEAD 12 PIT AB-SITE WORKER.RAD

Contaminated Zone Dimensions		Initial Soil Concentrations pCi/g	
Area:	2160.00 square meters	Cs-137	1.000E+00
Thickness:	0.15 meters	H-3	1.000E+00
Cover Depth:	0.00 meters	Th-230	1.000E+00

0

Total Dose TDOSE(t) mrem/yr
Basic Radiation Dose Limit = 2.500E+01 mrem/yr
Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	2.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	5.036E-02	4.926E-02	4.818E-02	4.713E-02	4.044E-02	2.657E-02	8.660E-03	4.850E-03	3.528E-03
M(t):	2.015E-03	1.970E-03	1.927E-03	1.885E-03	1.617E-03	1.063E-03	3.464E-04	1.940E-04	1.411E-04

0Maximum TDOSE(t): 5.036E-02 mrem/yr at t = 0.000E+00 years

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	4.990E-02	0.9909	5.774E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.300E-05	0.0007
H-3	0.000E+00	0.0000	2.323E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.832E-09	0.0000
Th-230	5.380E-05	0.0011	5.970E-06	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.661E-04	0.0073
Total	4.996E-02	0.9920	6.203E-06	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.991E-04	0.0079

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years
Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.994E-02	0.9915
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.381E-07	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.259E-04	0.0085
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.036E-02	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	4.873E-02	0.9894	5.637E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.222E-05	0.0007
H-3	0.000E+00	0.0000	1.527E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.833E-12	0.0000
Th-230	1.199E-04	0.0024	5.967E-06	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.664E-04	0.0074
Total	4.885E-02	0.9918	5.967E-06	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.986E-04	0.0081

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years
Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.876E-02	0.9900
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.565E-10	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.923E-04	0.0100
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.926E-02	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 2.000E+00 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	4.759E-02	0.9878	5.503E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.145E-05	0.0007
H-3	0.000E+00	0.0000	1.004E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.520E-15	0.0000
Th-230	1.851E-04	0.0038	5.963E-06	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.667E-04	0.0076
Total	4.777E-02	0.9916	5.964E-06	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.981E-04	0.0083

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 2.000E+00 years
Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.762E-02	0.9884
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.029E-13	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.577E-04	0.0116
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.818E-02	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	4.647E-02	0.9861	5.373E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.071E-05	0.0007
H-3	0.000E+00	0.0000	6.597E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.656E-18	0.0000
Th-230	2.494E-04	0.0053	5.960E-06	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.670E-04	0.0078
Total	4.672E-02	0.9914	5.961E-06	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.977E-04	0.0084

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years
Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.650E-02	0.9868
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.762E-17	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.223E-04	0.0132
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.713E-02	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+01 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	3.936E-02	0.9734	4.542E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.596E-05	0.0006
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	6.744E-04	0.0167	5.937E-06	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.705E-04	0.0092
Total	4.003E-02	0.9900	5.937E-06	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.965E-04	0.0098

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+01 years
Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.938E-02	0.9740
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.051E-03	0.0260
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.044E-02	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	2.448E-02	0.9215	2.810E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.606E-05	0.0006
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	1.678E-03	0.0632	5.871E-06	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.869E-04	0.0146
Total	2.616E-02	0.9846	5.872E-06	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.030E-04	0.0152

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years
Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.450E-02	0.9221
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.071E-03	0.0779
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.657E-02	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	4.645E-03	0.5364	5.235E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.992E-06	0.0003
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	3.571E-03	0.4123	5.644E-06	0.0007	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.354E-04	0.0503
Total	8.216E-03	0.9487	5.644E-06	0.0007	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.384E-04	0.0506

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years
Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.648E-03	0.5367
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.012E-03	0.4633
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.660E-03	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	4.010E-05	0.0083	4.279E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.446E-08	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	4.378E-03	0.9028	5.004E-06	0.0010	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.263E-04	0.0879
Total	4.418E-03	0.9111	5.004E-06	0.0010	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.263E-04	0.0879

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years
Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.012E-05	0.0083
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.809E-03	0.9917
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.850E-03	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	2.260E-12	0.0000	1.954E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.117E-15	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	3.266E-03	0.9256	3.027E-06	0.0009	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.597E-04	0.0736
Total	3.266E-03	0.9256	3.027E-06	0.0009	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.597E-04	0.0736

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years
Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.261E-12	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.528E-03	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.528E-03	1.0000

*Sum of all water independent and dependent pathways.

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

0 Parent (i)	Product (j)	Thread Fraction	DSR(jt) At Time in Years (mrem/yr)/(pCi/g) 0.000E+00	1.000E+00	2.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Cs-137+D	Cs-137+D	1.000E+00	4.994E-02	4.876E-02	4.762E-02	4.650E-02	3.938E-02	2.450E-02	4.648E-03	4.012E-05	2.261E-12
0H-3	H-3	1.000E+00	2.381E-07	1.565E-10	1.029E-13	6.762E-17	3.585E-39	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0Th-230	Th-230	1.000E+00	3.923E-04	3.921E-04	3.919E-04	3.917E-04	3.902E-04	3.859E-04	3.710E-04	3.301E-04	2.041E-04
Th-230	Ra-226+D	1.000E+00	3.357E-05	1.001E-04	1.656E-04	2.303E-04	6.577E-04	1.667E-03	3.569E-03	4.380E-03	3.262E-03
Th-230	Pb-210+D	1.000E+00	1.098E-08	7.568E-08	2.018E-07	3.860E-07	3.046E-06	1.823E-05	7.186E-05	9.955E-05	6.232E-05
Th-230	-DSR(j)		4.259E-04	4.923E-04	5.577E-04	6.223E-04	1.051E-03	2.071E-03	4.012E-03	4.809E-03	3.528E-03

The DSR includes contributions from associated (half-life ó 180 days) daughters.

0

Single Radionuclide Soil Guidelines G(it) in pCi/g
Basic Radiation Dose Limit = 2.500E+01 mrem/yr

0Nuclide (i)	t= 0.000E+00	1.000E+00	2.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Cs-137	5.006E+02	5.127E+02	5.250E+02	5.376E+02	6.348E+02	1.020E+03	5.378E+03	6.231E+05	1.106E+13
H-3	1.050E+08	1.597E+11	2.430E+14	*9.597E+15	*9.597E+15	*9.597E+15	*9.597E+15	*9.597E+15	*9.597E+15
Th-230	5.870E+04	5.079E+04	4.482E+04	4.017E+04	2.379E+04	1.207E+04	6.231E+03	5.198E+03	7.085E+03

*At specific activity limit

0

Summed Dose/Source Ratios DSR(it) in (mrem/yr)/(pCi/g)
and Single Radionuclide Soil Guidelines G(it) in pCi/g
at tmin = time of minimum single radionuclide soil guideline
and at tmax = time of maximum total dose = 0.000E+00 years

0Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(itmin) (pCi/g)	G(itmin) (pCi/g)	DSR(itmax) (pCi/g)	G(itmax) (pCi/g)
Cs-137	1.000E+00	0.000E+00	4.994E-02	5.006E+02	4.994E-02	5.006E+02
H-3	1.000E+00	0.000E+00	2.381E-07	1.050E+08	2.381E-07	1.050E+08
Th-230	1.000E+00	258.1 ñ 0.5	4.829E-03	5.177E+03	4.259E-04	5.870E+04

Individual Nuclide Dose Summed Over All Pathways
Parent Nuclide and Branch Fraction Indicated

0Nuclide (j)	Parent (i)	THF(i)	DOSE(jt) mrem/yr t= 0.000E+00	1.000E+00	2.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Cs-137	Cs-137	1.000E+00	4.994E-02	4.876E-02	4.762E-02	4.650E-02	3.938E-02	2.450E-02	4.648E-03	4.012E-05	2.261E-12
0H-3	H-3	1.000E+00	2.381E-07	1.565E-10	1.029E-13	6.762E-17	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0Th-230	Th-230	1.000E+00	3.923E-04	3.921E-04	3.919E-04	3.917E-04	3.902E-04	3.859E-04	3.710E-04	3.301E-04	2.041E-04
0Ra-226	Th-230	1.000E+00	3.357E-05	1.001E-04	1.656E-04	2.303E-04	6.577E-04	1.667E-03	3.569E-03	4.380E-03	3.262E-03
0Pb-210	Th-230	1.000E+00	1.098E-08	7.568E-08	2.018E-07	3.860E-07	3.046E-06	1.823E-05	7.186E-05	9.955E-05	6.232E-05

THF(i) is the thread fraction of the parent nuclide.

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

0Nuclide (j)	Parent (i)	THF(i)	S(jt) pCi/g t= 0.000E+00	1.000E+00	2.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Cs-137	Cs-137	1.000E+00	1.000E+00	9.767E-01	9.539E-01	9.317E-01	7.898E-01	4.927E-01	9.444E-02	8.422E-04	5.642E-11
0H-3	H-3	1.000E+00	1.000E+00	6.576E-04	4.324E-07	2.843E-10	1.511E-32	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0Th-230	Th-230	1.000E+00	1.000E+00	9.998E-01	9.997E-01	9.995E-01	9.983E-01	9.949E-01	9.831E-01	9.501E-01	8.431E-01
0Ra-226	Th-230	1.000E+00	0.000E+00	4.302E-04	8.545E-04	1.273E-03	4.043E-03	1.062E-02	2.327E-02	2.973E-02	2.683E-02
0Pb-210	Th-230	1.000E+00	0.000E+00	6.612E-06	2.598E-05	5.741E-05	5.636E-04	3.627E-03	1.502E-02	2.275E-02	2.071E-02

THF(i) is the thread fraction of the parent nuclide.
0RESCALC.EXE execution time = 1.02 seconds

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Cancer Risk Slope Factors Summary Table
Risk Library: FGR 13 Morbidity

Menu	Parameter	Current Value	Base Case*	Parameter Name
Sf-1	Ground external radiation slope factors, 1/yr per (pCi/g):			
Sf-1	Cs-137+D	2.55E-06	5.32E-10	SLPF(1,1)
Sf-1	H-3	0.00E+00	0.00E+00	SLPF(2,1)
Sf-1	Pb-210+D	4.21E-09	1.41E-09	SLPF(3,1)
Sf-1	Ra-226+D	8.49E-06	2.29E-08	SLPF(4,1)
Sf-1	Th-230	8.19E-10	8.19E-10	SLPF(5,1)
Sf-2	Inhalation, slope factors, 1/(pCi):			
Sf-2	Cs-137+D	1.12E-10	1.12E-10	SLPF(1,2)
Sf-2	H-3	8.51E-13	8.51E-13	SLPF(2,2)
Sf-2	Pb-210+D	3.08E-08	1.58E-08	SLPF(3,2)
Sf-2	Ra-226+D	2.83E-08	2.82E-08	SLPF(4,2)
Sf-2	Th-230	3.40E-08	3.40E-08	SLPF(5,2)
Sf-3	Food ingestion, slope factors, 1/(pCi):			
Sf-3	Cs-137+D	3.74E-11	3.74E-11	SLPF(1,3)
Sf-3	H-3	1.44E-13	1.44E-13	SLPF(2,3)
Sf-3	Pb-210+D	3.44E-09	1.18E-09	SLPF(3,3)
Sf-3	Ra-226+D	5.15E-10	5.14E-10	SLPF(4,3)
Sf-3	Th-230	1.19E-10	1.19E-10	SLPF(5,3)
Sf-3	Water ingestion, slope factors, 1/(pCi):			
Sf-3	Cs-137+D	3.04E-11	3.04E-11	SLPF(1,4)
Sf-3	H-3	1.12E-13	1.12E-13	SLPF(2,4)
Sf-3	Pb-210+D	2.66E-09	8.81E-10	SLPF(3,4)
Sf-3	Ra-226+D	3.86E-10	3.85E-10	SLPF(4,4)
Sf-3	Th-230	9.10E-11	9.10E-11	SLPF(5,4)
Sf-3	Soil ingestion, slope factors, 1/(pCi):			
Sf-3	Cs-137+D	3.74E-11	3.74E-11	SLPF(1,5)
Sf-3	H-3	1.44E-13	1.44E-13	SLPF(2,5)
Sf-3	Pb-210+D	3.44E-09	1.18E-09	SLPF(3,5)
Sf-3	Ra-226+D	5.15E-10	5.14E-10	SLPF(4,5)
Sf-3	Th-230	1.19E-10	1.19E-10	SLPF(5,5)
Sf-Rn	Radon Inhalation slope factors, 1/(pCi):			
Sf-Rn	Rn-222	1.80E-12	1.80E-12	SLPFRN(1,1)
Sf-Rn	Po-218	3.70E-12	3.70E-12	SLPFRN(1,2)
Sf-Rn	Pb-214	6.20E-12	6.20E-12	SLPFRN(1,3)
Sf-Rn	Bi-214	1.50E-11	1.50E-11	SLPFRN(1,4)

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Sf-Rn  Radon K factors, (mrem/WLM):
Sf-Rn  Rn-222 Indoor                                                  7.60E+02   7.60E+02   KFACTR(1,1)
Sf-Rn  Rn-222 Outdoor                                                 5.70E+02   5.70E+02   KFACTR(1,2)
-------------------------------------------------------------------------------------------------------
*Base Case means Default.Lib w/o Associate Nuclide contributions.
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Risk Slope and Environmental Transport Factors for the Ground Pathway

0Nuclide (i)	Slope(i)*	ETFG(i,t) At Time in Years (dimensionless)								
	t=	0.000E+00	1.000E+00	2.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
At-218	3.570E-09	1.707E-02	1.707E-02	1.707E-02	1.707E-02	1.707E-02	1.708E-02	1.710E-02	1.716E-02	1.724E-02
Ba-137m	2.690E-06	1.480E-02	1.480E-02	1.480E-02	1.479E-02	1.478E-02	1.474E-02	1.459E-02	1.412E-02	1.188E-02
Bi-210	2.760E-09	1.629E-02	1.629E-02	1.629E-02	1.629E-02	1.628E-02	1.625E-02	1.615E-02	1.583E-02	1.409E-02
Bi-214	7.480E-06	1.360E-02	1.360E-02	1.360E-02	1.360E-02	1.358E-02	1.353E-02	1.336E-02	1.284E-02	1.053E-02
Cs-137	5.320E-10	1.677E-02	1.677E-02	1.677E-02	1.677E-02	1.676E-02	1.674E-02	1.667E-02	1.643E-02	1.499E-02
H-3	0.000E+00	1.830E-02	1.830E-02	1.830E-02	1.830E-02	1.830E-02	1.830E-02	1.830E-02	1.830E-02	1.830E-02
Pb-210	1.410E-09	1.723E-02	1.723E-02	1.723E-02	1.723E-02	1.723E-02	1.724E-02	1.725E-02	1.728E-02	1.737E-02
Pb-214	9.820E-07	1.556E-02	1.556E-02	1.556E-02	1.556E-02	1.555E-02	1.551E-02	1.538E-02	1.498E-02	1.291E-02
Po-210	3.950E-11	1.452E-02	1.452E-02	1.452E-02	1.451E-02	1.450E-02	1.446E-02	1.430E-02	1.382E-02	1.154E-02
Po-214	3.860E-10	1.446E-02	1.446E-02	1.446E-02	1.446E-02	1.444E-02	1.440E-02	1.424E-02	1.376E-02	1.151E-02
Po-218	4.260E-11	1.444E-02	1.444E-02	1.443E-02	1.443E-02	1.442E-02	1.437E-02	1.422E-02	1.373E-02	1.147E-02
Ra-226	2.290E-08	1.628E-02	1.628E-02	1.628E-02	1.628E-02	1.627E-02	1.624E-02	1.614E-02	1.581E-02	1.400E-02
Rn-222	1.740E-09	1.500E-02	1.499E-02	1.499E-02	1.499E-02	1.498E-02	1.494E-02	1.479E-02	1.433E-02	1.213E-02
Th-230	8.190E-10	1.689E-02	1.689E-02	1.689E-02	1.689E-02	1.689E-02	1.688E-02	1.684E-02	1.671E-02	1.569E-02
Tl-210	0.000E+00	1.830E-02	1.830E-02	1.830E-02	1.830E-02	1.830E-02	1.830E-02	1.830E-02	1.830E-02	1.830E-02

* - Units are 1/yr per (pCi/g) at infinite depth and area. Multiplication by ETFG(i,t) converts to site conditions.

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 0.000E+00 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Cs-137	1.832E-05	0.000E+00	0.000E+00	0.000E+00	6.680E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.680E-01
H-3	2.661E+01	0.000E+00	0.000E+00	0.000E+00	6.680E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.680E-01
Pb-210	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ra-226	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	1.832E-05	0.000E+00	0.000E+00	0.000E+00	6.680E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.680E-01

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

0

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 0.000E+00 years

0

Radon Pathway	Radionuclides							
	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

0

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 0.000E+00 years

0 Water Independent Pathways (Inhalation excludes radon)

0

Radio-Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	9.417E-07	0.9963	5.129E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.245E-10	0.0007
H-3	0.000E+00	0.0000	5.660E-10	0.0006	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.405E-12	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	3.459E-10	0.0004	1.557E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.987E-09	0.0021
Total	9.421E-07	0.9966	5.817E-10	0.0006	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.614E-09	0.0028

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 0.000E+00 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All Pathways** risk	All Pathways** fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.424E-07	0.9969
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.684E-10	0.0006
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.349E-09	0.0025
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.453E-07	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

0

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 0.000E+00 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

0

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 0.000E+00 years

0 Water Independent Pathways (Inhalation excludes radon)

0

Radio-Nuclide	Ground risk	Ground fract.	Inhalation risk	Inhalation fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	Soil risk	Soil fract.
Cs-137	9.417E-07	0.9963	5.129E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.245E-10	0.0007
H-3	0.000E+00	0.0000	5.660E-10	0.0006	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.405E-12	0.0000
Th-230	3.459E-10	0.0004	1.557E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.987E-09	0.0021
Total	9.421E-07	0.9966	5.817E-10	0.0006	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.614E-09	0.0028

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 0.000E+00 years

Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.424E-07	0.9969
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.684E-10	0.0006
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.349E-09	0.0025
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.453E-07	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 1.000E+00 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Cs-137	1.788E-05	0.000E+00	0.000E+00	0.000E+00	6.521E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.521E-01
H-3	1.749E-02	0.000E+00	0.000E+00	0.000E+00	4.390E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.390E-04
Pb-210	1.211E-10	0.000E+00	0.000E+00	0.000E+00	4.415E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.415E-06
Ra-226	7.877E-09	0.000E+00	0.000E+00	0.000E+00	2.872E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.872E-04
Th-230	1.831E-05	0.000E+00	0.000E+00	0.000E+00	6.676E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.676E-01

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

0

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 1.000E+00 years

0

Radon Pathway	Radionuclides							
	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

0

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+00 years

0 Water Independent Pathways (Inhalation excludes radon)

0

Radio-Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	9.197E-07	0.9954	5.007E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.097E-10	0.0007
H-3	0.000E+00	0.0000	3.721E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.581E-15	0.0000
Pb-210	1.154E-14	0.0000	9.309E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.800E-13	0.0000
Ra-226	1.263E-09	0.0014	5.568E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.696E-12	0.0000
Th-230	3.458E-10	0.0004	1.556E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.986E-09	0.0021
Total	9.213E-07	0.9972	1.599E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.600E-09	0.0028

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+00 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All Pathways** risk	All Pathways** fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.203E-07	0.9961
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.736E-13	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.916E-13	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.267E-09	0.0014
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.347E-09	0.0025
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.239E-07	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

0

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 1.000E+00 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

0

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+00 years

0 Water Independent Pathways (Inhalation excludes radon)

0

Radio-Nuclide	Ground risk	Ground fract.	Inhalation risk	Inhalation fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	Soil risk	Soil fract.
Cs-137	9.197E-07	0.9954	5.007E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.097E-10	0.0007
H-3	0.000E+00	0.0000	3.721E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.581E-15	0.0000
Th-230	1.609E-09	0.0017	1.557E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.990E-09	0.0022
Total	9.213E-07	0.9972	1.599E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.600E-09	0.0028

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+00 years

Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.203E-07	0.9961
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.736E-13	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.614E-09	0.0039
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.239E-07	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 2.000E+00 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Cs-137	1.746E-05	0.000E+00	0.000E+00	0.000E+00	6.366E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.366E-01
H-3	1.149E-05	0.000E+00	0.000E+00	0.000E+00	2.886E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.886E-07
Pb-210	4.754E-10	0.000E+00	0.000E+00	0.000E+00	1.734E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.734E-05
Ra-226	1.564E-08	0.000E+00	0.000E+00	0.000E+00	5.703E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.703E-04
Th-230	1.830E-05	0.000E+00	0.000E+00	0.000E+00	6.672E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.672E-01

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

0

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 2.000E+00 years

0

Radon Pathway	Radionuclides							
	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

0

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 2.000E+00 years

0 Water Independent Pathways (Inhalation excludes radon)

0

Radio-Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	8.981E-07	0.9940	4.889E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.953E-10	0.0007
H-3	0.000E+00	0.0000	2.446E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.039E-18	0.0000
Pb-210	4.535E-14	0.0000	3.656E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.492E-12	0.0000
Ra-226	2.508E-09	0.0028	1.105E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.339E-12	0.0000
Th-230	3.457E-10	0.0004	1.555E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.985E-09	0.0022
Total	9.009E-07	0.9971	1.561E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.589E-09	0.0029

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 2.000E+00 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All Pathways** risk	All Pathways** fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.987E-07	0.9946
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.456E-16	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.538E-12	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.515E-09	0.0028
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.346E-09	0.0026
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.035E-07	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

0

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 2.000E+00 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

0

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 2.000E+00 years

0 Water Independent Pathways (Inhalation excludes radon)

0

Radio-Nuclide	Ground risk	Ground fract.	Inhalation risk	Inhalation fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	Soil risk	Soil fract.
Cs-137	8.981E-07	0.9940	4.889E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.953E-10	0.0007
H-3	0.000E+00	0.0000	2.446E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.039E-18	0.0000
Th-230	2.854E-09	0.0032	1.556E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.994E-09	0.0022
Total	9.009E-07	0.9971	1.561E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.589E-09	0.0029

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 2.000E+00 years

Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.987E-07	0.9946
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.456E-16	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.863E-09	0.0054
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.035E-07	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 3.000E+00 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Cs-137	1.705E-05	0.000E+00	0.000E+00	0.000E+00	6.216E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.216E-01
H-3	7.556E-09	0.000E+00	0.000E+00	0.000E+00	1.897E-10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.897E-10
Pb-210	1.050E-09	0.000E+00	0.000E+00	0.000E+00	3.830E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.830E-05
Ra-226	2.329E-08	0.000E+00	0.000E+00	0.000E+00	8.492E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.492E-04
Th-230	1.829E-05	0.000E+00	0.000E+00	0.000E+00	6.668E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.668E-01

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

0

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 3.000E+00 years

0

Radon Pathway	Radionuclides							
	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

0

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+00 years

0 Water Independent Pathways (Inhalation excludes radon)

0

Radio-Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	8.770E-07	0.9924	4.773E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.812E-10	0.0007
H-3	0.000E+00	0.0000	1.607E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.829E-22	0.0000
Pb-210	1.002E-13	0.0000	8.075E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.296E-12	0.0000
Ra-226	3.735E-09	0.0042	1.646E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.093E-11	0.0000
Th-230	3.457E-10	0.0004	1.554E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.984E-09	0.0022
Total	8.811E-07	0.9971	1.561E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.579E-09	0.0029

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+00 years

Water Dependent Pathways

Radio-	Water		Fish		Plant		Meat		Milk		All Pathways**	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.776E-07	0.9931
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.614E-19	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.398E-12	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.746E-09	0.0042
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.345E-09	0.0027
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.837E-07	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

0

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 3.000E+00 years

0

Radon	Radionuclides							
Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

0

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+00 years

0

Water Independent Pathways (Inhalation excludes radon)

0

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	8.770E-07	0.9924	4.773E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.812E-10	0.0007
H-3	0.000E+00	0.0000	1.607E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.829E-22	0.0000
Th-230	4.081E-09	0.0046	1.556E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.998E-09	0.0023
Total	8.811E-07	0.9971	1.561E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.579E-09	0.0029

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+00 years

Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.776E-07	0.9931
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.614E-19	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.094E-09	0.0069
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.837E-07	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 1.000E+01 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Cs-137	1.441E-05	0.000E+00	0.000E+00	0.000E+00	5.254E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.254E-01
H-3	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	1.028E-08	0.000E+00	0.000E+00	0.000E+00	3.749E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.749E-04
Ra-226	7.377E-08	0.000E+00	0.000E+00	0.000E+00	2.690E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.690E-03
Th-230	1.821E-05	0.000E+00	0.000E+00	0.000E+00	6.641E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.641E-01

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

0

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 1.000E+01 years

0

Radon Pathway	Radionuclides							
	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

0

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+01 years

0 Water Independent Pathways (Inhalation excludes radon)

0

Radio-Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	7.428E-07	0.9805	4.035E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.913E-10	0.0006
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	9.835E-13	0.0000	7.906E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.227E-11	0.0000
Ra-226	1.185E-08	0.0156	5.214E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.462E-11	0.0000
Th-230	3.452E-10	0.0005	1.548E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.976E-09	0.0026
Total	7.550E-07	0.9966	1.558E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.534E-09	0.0033

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+01 years

Water Dependent Pathways

Radio-	Water		Fish		Plant		Meat		Milk		All Pathways**	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.432E-07	0.9812
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.326E-11	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.189E-08	0.0157
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.336E-09	0.0031
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.575E-07	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

0

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 1.000E+01 years

0

Radon	Radionuclides							
Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

0

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+01 years

0

Water Independent Pathways (Inhalation excludes radon)

0

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	7.428E-07	0.9805	4.035E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.913E-10	0.0006
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	1.220E-08	0.0161	1.554E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.043E-09	0.0027
Total	7.550E-07	0.9966	1.558E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.534E-09	0.0033

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+01 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All pathways risk	All pathways fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.432E-07	0.9812
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.426E-08	0.0188
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.575E-07	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 3.000E+01 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Cs-137	8.916E-06	0.000E+00	0.000E+00	0.000E+00	3.251E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.251E-01
H-3	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	6.564E-08	0.000E+00	0.000E+00	0.000E+00	2.393E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.393E-03
Ra-226	1.921E-07	0.000E+00	0.000E+00	0.000E+00	7.005E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.005E-03
Th-230	1.801E-05	0.000E+00	0.000E+00	0.000E+00	6.566E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.566E-01

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

0

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 3.000E+01 years

0

Radon Pathway	Radionuclides							
	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

0

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+01 years

0 Water Independent Pathways (Inhalation excludes radon)

0

Radio-Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	4.620E-07	0.9316	2.497E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.040E-10	0.0006
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	6.322E-12	0.0000	5.047E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.060E-10	0.0004
Ra-226	3.101E-08	0.0625	1.358E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.015E-11	0.0002
Th-230	3.438E-10	0.0007	1.530E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.953E-09	0.0039
Total	4.934E-07	0.9948	1.552E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.553E-09	0.0051

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+01 years

Water Dependent Pathways

Radio-	Water		Fish		Plant		Meat		Milk		All Pathways**	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.623E-07	0.9322
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.124E-10	0.0004
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.110E-08	0.0627
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.312E-09	0.0047
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.959E-07	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

0

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 3.000E+01 years

0

Radon	Radionuclides							
Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

0

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+01 years

0

Water Independent Pathways (Inhalation excludes radon)

0

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	4.620E-07	0.9316	2.497E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.040E-10	0.0006
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	3.136E-08	0.0632	1.549E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.249E-09	0.0045
Total	4.934E-07	0.9948	1.552E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.553E-09	0.0051

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+01 years

Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.623E-07	0.9322
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.363E-08	0.0678
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.959E-07	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 1.000E+02 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Cs-137	1.661E-06	0.000E+00	0.000E+00	0.000E+00	6.056E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.056E-02
H-3	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	2.641E-07	0.000E+00	0.000E+00	0.000E+00	9.630E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	9.630E-03
Ra-226	4.091E-07	0.000E+00	0.000E+00	0.000E+00	1.492E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.492E-02
Th-230	1.729E-05	0.000E+00	0.000E+00	0.000E+00	6.304E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.304E-01

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

0

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 1.000E+02 years

0

Radon Pathway	Radionuclides							
	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

0

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+02 years

0 Water Independent Pathways (Inhalation excludes radon)

0

Radio-Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	8.766E-08	0.5543	4.650E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.662E-11	0.0004
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	2.608E-11	0.0002	2.031E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.289E-10	0.0052
Ra-226	6.715E-08	0.4246	2.892E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.920E-10	0.0012
Th-230	3.390E-10	0.0021	1.469E-11	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.875E-09	0.0119
Total	1.552E-07	0.9812	1.519E-11	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.953E-09	0.0187

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+02 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All Pathways** risk	All Pathways** fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.772E-08	0.5547
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.552E-10	0.0054
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.735E-08	0.4258
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.229E-09	0.0141
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.581E-07	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

0

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 1.000E+02 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

0

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+02 years

0 Water Independent Pathways (Inhalation excludes radon)

0

Radio-Nuclide	Ground risk	Ground fract.	Inhalation risk	Inhalation fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	Soil risk	Soil fract.
Cs-137	8.766E-08	0.5543	4.650E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.662E-11	0.0004
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	6.752E-08	0.4269	1.519E-11	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.896E-09	0.0183
Total	1.552E-07	0.9812	1.519E-11	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.953E-09	0.0187

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+02 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All pathways risk	All pathways fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.772E-08	0.5547
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.043E-08	0.4453
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.581E-07	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 3.000E+02 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Cs-137	1.358E-08	0.000E+00	0.000E+00	0.000E+00	4.950E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.950E-04
H-3	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	3.666E-07	0.000E+00	0.000E+00	0.000E+00	1.337E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.337E-02
Ra-226	4.792E-07	0.000E+00	0.000E+00	0.000E+00	1.747E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.747E-02
Th-230	1.532E-05	0.000E+00	0.000E+00	0.000E+00	5.585E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.585E-01

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

0

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 3.000E+02 years

0

Radon Pathway	Radionuclides							
	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

0

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+02 years

0 Water Independent Pathways (Inhalation excludes radon)

0

Radio-Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	7.567E-10	0.0087	3.801E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.629E-13	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	3.902E-11	0.0004	2.819E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.151E-09	0.0133
Ra-226	8.260E-08	0.9519	3.387E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.248E-10	0.0026
Th-230	3.250E-10	0.0037	1.302E-11	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.661E-09	0.0191
Total	8.372E-08	0.9648	1.364E-11	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.038E-09	0.0350

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+02 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All Pathways** risk	All Pathways** fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.572E-10	0.0087
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.190E-09	0.0137
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.283E-08	0.9545
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.999E-09	0.0230
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.677E-08	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

0

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 3.000E+02 years

0

Radon Pathway	Radionuclides Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

0

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+02 years

0

Water Independent Pathways (Inhalation excludes radon)

0

Radio-Nuclide	Ground risk	Ground fract.	Inhalation risk	Inhalation fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	Soil risk	Soil fract.
Cs-137	7.567E-10	0.0087	3.801E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.629E-13	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	8.297E-08	0.9561	1.364E-11	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.037E-09	0.0350
Total	8.372E-08	0.9648	1.364E-11	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.038E-09	0.0350

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+02 years

Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.572E-10	0.0087
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.602E-08	0.9913
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.677E-08	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 1.000E+03 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Cs-137	6.201E-16	0.000E+00	0.000E+00	0.000E+00	2.261E-11	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.261E-11
H-3	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	2.276E-07	0.000E+00	0.000E+00	0.000E+00	8.300E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.300E-03
Ra-226	2.949E-07	0.000E+00	0.000E+00	0.000E+00	1.075E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.075E-02
Th-230	9.267E-06	0.000E+00	0.000E+00	0.000E+00	3.379E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.379E-01

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

0

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 1.000E+03 years

0

Radon Pathway	Radionuclides							
	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

0

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+03 years

0 Water Independent Pathways (Inhalation excludes radon)

0

Radio-Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	4.265E-17	0.0000	1.736E-24	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.114E-20	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	3.305E-11	0.0005	1.750E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.145E-10	0.0112
Ra-226	6.157E-08	0.9660	2.084E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.384E-10	0.0022
Th-230	2.709E-10	0.0043	7.877E-12	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.005E-09	0.0158
Total	6.188E-08	0.9707	8.260E-12	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.858E-09	0.0291

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+03 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All Pathways** risk	All Pathways** fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.267E-17	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.477E-10	0.0117
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.171E-08	0.9681
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.284E-09	0.0201
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.374E-08	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

0

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 1.000E+03 years

0

Radon Pathway	Radionuclides Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

0

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+03 years

0

Water Independent Pathways (Inhalation excludes radon)

0

Radio-Nuclide	Ground risk	Ground fract.	Inhalation risk	Inhalation fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	Soil risk	Soil fract.
Cs-137	4.265E-17	0.0000	1.736E-24	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.114E-20	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	6.188E-08	0.9707	8.260E-12	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.858E-09	0.0291
Total	6.188E-08	0.9707	8.260E-12	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.858E-09	0.0291

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+03 years

Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.267E-17	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.374E-08	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.374E-08	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

ATTACHMENT G-2

DOSE AND RISK CALCULATION

AND

OUTPUT DOSE AND RISK ASSESSMENTS SUMMARY REPORTS

FOR DISPOSAL PIT C UNDER CURRENT SITE WORKER

Table G-2-1: Results of Residual Dose Assessment for Disposal Pit C under Current Site Worker Scenario

Nuclide	EPC (pCi/g)	Dose to Source Ratio ((mrem/yr)/(pCi/g))							
		T = 2.4 Year				T=1000 Years			
		Ground	Inhalation	Soil	All Pathways	Ground	Inhalation	Soil	All Pathways
Cs-137	0.112	4.8E-02	6.3E-10	3.1E-05	4.8E-02	2.3E-12	2.3E-20	1.1E-15	2.3E-12
H-3	43.48	0	1.0E-14	1.3E-16	1.0E-14	0	0	0	0
Pb-210	0	9.5E-05	4.4E-07	4.4E-03	4.5E-03	5.5E-19	1.7E-21	1.7E-17	1.7E-17
Ra-226	0	1.6E-01	2.2E-07	1.3E-03	1.6E-01	7.4E-02	2.3E-07	2.0E-03	7.6E-02
Ra-228	0.32	1.3E-01	3.9E-06	9.6E-04	1.4E-01	0	0	0	0
Th-230	0.19	2.2E-04	6.9E-06	3.7E-04	5.9E-04	3.9E-02	3.6E-06	1.2E-03	4.0E-02
U-234	0.04	7.0E-06	2.8E-06	1.9E-04	2.0E-04	1.7E-04	1.0E-06	7.5E-05	2.5E-04

Nuclide	Dose (mrem/yr)							
	T = 2.4 Year				T=1000 Years			
	Ground	Inhalation	Soil	All Pathways	Ground	Inhalation	Soil	All Pathways
Cs-137	5.4E-03	7.0E-11	3.5E-06	5.4E-03	2.6E-13	2.5E-21	1.3E-16	2.6E-13
H-3	0.0E+00	4.4E-13	5.6E-15	4.5E-13	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Pb-210	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Ra-226	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Ra-228	4.3E-02	1.3E-06	3.1E-04	4.3E-02	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Th-230	4.2E-05	1.3E-06	7.0E-05	1.1E-04	7.3E-03	6.8E-07	2.2E-04	7.6E-03
U-234	2.8E-07	1.1E-07	7.5E-06	7.9E-06	6.8E-06	4.2E-08	3.0E-06	9.8E-06
		Cumulative Dose		**4.9E-02**		**Cumulative Dose**		7.6E-3

Table G-2-2: Results of Residual Risk Assessment for Disposal Pit C under Current Site Worker Scenario

Nuclide	EPC (pCi/g)	Risk to Source Ratio (1/(pCi/g))							
		T = 2.4 Year				T=1000 Years			
		Ground	Inhalation	Soil	All Pathways	Ground	Inhalation	Soil	All Pathways
Cs-137	0.112	9.1E-07	5.6E-14	5.9E-10	9.1E-07	4.4E-17	2.0E-24	2.1E-20	4.4E-17
H-3	43.48	0.0E+00	2.6E-17	5.5E-20	2.6E-17	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Pb-210	0	1.7E-09	1.5E-11	5.3E-08	5.5E-08	9.5E-24	5.6E-26	2.0E-22	2.1E-22
Ra-226	0	3.0E-06	1.6E-11	1.3E-08	3.0E-06	1.4E-06	1.1E-11	2.2E-08	1.4E-06
Ra-228	0.32	2.5E-06	5.5E-11	2.1E-08	2.5E-06	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Th-230	0.19	3.5E-09	1.8E-11	2.0E-09	5.5E-09	7.3E-07	1.5E-11	1.2E-08	7.4E-07
U-234	0.04	1.1E-10	1.5E-11	1.6E-09	1.7E-09	3.2E-09	5.4E-12	6.4E-10	3.8E-09

Nuclide	Risk (unitless)							
	T = 2.4 Year				T=1000 Years			
	Ground	Inhalation	Soil	All Pathways	Ground	Inhalation	Soil	All Pathways
Cs-137	1.0E-07	6.2E-15	6.6E-11	1.0E-07	5.0E-18	2.2E-25	2.4E-21	5.0E-18
H-3	0	1.1E-15	2.4E-18	1.1E-15	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Pb-210	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Ra-226	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Ra-228	8.1E-07	1.8E-11	6.8E-09	8.1E-07	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Th-230	6.6E-10	3.4E-12	3.8E-10	1.0E-09	1.4E-07	2.8E-12	2.4E-09	1.4E-07
U-234	4.4E-12	5.9E-13	6.4E-11	6.9E-11	1.3E-10	2.2E-13	2.6E-11	1.5E-10
	Cumulative Risk			**9E-07**	**Cumulative Risk**			1E-07

Summary : Residual Dose and Risk Assessment for Disposal Pit C Under Site Worker Scenario
File : C:\USERS\MRAHMAN\DOCUMENTS\OLD RESRAD FILES\SEAD 12 PIT C-SITE WORKER.RAD

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Dose Conversion Factor (and Related) Parameter Summary
Dose Library: FGR 12 & FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation (mrem/yr)/(pCi/g)			
A-1	Ac-228 (Source: FGR 12)	5.978E+00	5.978E+00	DCF1(1)
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1(2)
A-1	Ba-137m (Source: FGR 12)	3.606E+00	3.606E+00	DCF1(3)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1(4)
A-1	Bi-212 (Source: FGR 12)	1.171E+00	1.171E+00	DCF1(5)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1(6)
A-1	Cs-137 (Source: FGR 12)	7.510E-04	7.510E-04	DCF1(7)
A-1	H-3 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1(8)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1(9)
A-1	Pb-212 (Source: FGR 12)	7.043E-01	7.043E-01	DCF1(10)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1(11)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1(12)
A-1	Po-212 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1(13)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1(14)
A-1	Po-216 (Source: FGR 12)	1.042E-04	1.042E-04	DCF1(15)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1(16)
A-1	Ra-224 (Source: FGR 12)	5.119E-02	5.119E-02	DCF1(17)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1(18)
A-1	Ra-228 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1(19)
A-1	Rn-220 (Source: FGR 12)	2.298E-03	2.298E-03	DCF1(20)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1(21)
A-1	Th-228 (Source: FGR 12)	7.940E-03	7.940E-03	DCF1(22)
A-1	Th-230 (Source: FGR 12)	1.209E-03	1.209E-03	DCF1(23)
A-1	Tl-208 (Source: FGR 12)	2.298E+01	2.298E+01	DCF1(24)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1(25)
A-1	U-234 (Source: FGR 12)	4.017E-04	4.017E-04	DCF1(26)
B-1	Dose conversion factors for inhalation mrem/pCi:			
B-1	Cs-137+D	3.190E-05	3.190E-05	DCF2(1)
B-1	H-3	6.400E-08	6.400E-08	DCF2(2)
B-1	Pb-210+D	2.320E-02	1.360E-02	DCF2(3)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2(4)
B-1	Ra-228+D	5.078E-03	4.770E-03	DCF2(5)
B-1	Th-228+D	3.454E-01	3.420E-01	DCF2(6)
B-1	Th-230	3.260E-01	3.260E-01	DCF2(7)
B-1	U-234	1.320E-01	1.320E-01	DCF2(8)
D-1	Dose conversion factors for ingestion mrem/pCi:			
D-1	Cs-137+D	5.000E-05	5.000E-05	DCF3(1)
D-1	H-3	6.400E-08	6.400E-08	DCF3(2)

D-1	Pb-210+D	7.276E-03	5.370E-03	DCF3(3)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3(4)
D-1	Ra-228+D	1.442E-03	1.440E-03	DCF3(5)
D-1	Th-228+D	8.086E-04	3.960E-04	DCF3(6)
D-1	Th-230	5.480E-04	5.480E-04	DCF3(7)
D-1	U-234	2.830E-04	2.830E-04	DCF3(8)

Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: FGR 12 & FGR 11

Menu	Parameter		Current Value#	Base Case*	Parameter Name
D-34	Food transfer factors:				
D-34	Cs-137+D	plant/soil concentration ratio dimensionless	4.000E-02	4.000E-02	RTF(11)
D-34	Cs-137+D	beef/livestock-intake ratio (pCi/kg)/(pCi/d)	3.000E-02	3.000E-02	RTF(12)
D-34	Cs-137+D	milk/livestock-intake ratio (pCi/L)/(pCi/d)	8.000E-03	8.000E-03	RTF(13)
D-34					
D-34	H-3	plant/soil concentration ratio dimensionless	4.800E+00	4.800E+00	RTF(21)
D-34	H-3	beef/livestock-intake ratio (pCi/kg)/(pCi/d)	1.200E-02	1.200E-02	RTF(22)
D-34	H-3	milk/livestock-intake ratio (pCi/L)/(pCi/d)	1.000E-02	1.000E-02	RTF(23)
D-34					
D-34	Pb-210+D	plant/soil concentration ratio dimensionless	1.000E-02	1.000E-02	RTF(31)
D-34	Pb-210+D	beef/livestock-intake ratio (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(32)
D-34	Pb-210+D	milk/livestock-intake ratio (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(33)
D-34					
D-34	Ra-226+D	plant/soil concentration ratio dimensionless	4.000E-02	4.000E-02	RTF(41)
D-34	Ra-226+D	beef/livestock-intake ratio (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(42)
D-34	Ra-226+D	milk/livestock-intake ratio (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(43)
D-34					
D-34	Ra-228+D	plant/soil concentration ratio dimensionless	4.000E-02	4.000E-02	RTF(51)
D-34	Ra-228+D	beef/livestock-intake ratio (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(52)
D-34	Ra-228+D	milk/livestock-intake ratio (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(53)
D-34					
D-34	Th-228+D	plant/soil concentration ratio dimensionless	1.000E-03	1.000E-03	RTF(61)
D-34	Th-228+D	beef/livestock-intake ratio (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(62)
D-34	Th-228+D	milk/livestock-intake ratio (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(63)
D-34					
D-34	Th-230	plant/soil concentration ratio dimensionless	1.000E-03	1.000E-03	RTF(71)
D-34	Th-230	beef/livestock-intake ratio (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(72)
D-34	Th-230	milk/livestock-intake ratio (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(73)
D-34					
D-34	U-234	plant/soil concentration ratio dimensionless	2.500E-03	2.500E-03	RTF(81)
D-34	U-234	beef/livestock-intake ratio (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(82)
D-34	U-234	milk/livestock-intake ratio (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(83)
D-5	Bioaccumulation factors fresh water L/kg:				
D-5	Cs-137+D	fish	2.000E+03	2.000E+03	BIOFAC(11)
D-5	Cs-137+D	crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(12)
D-5					
D-5	H-3	fish	1.000E+00	1.000E+00	BIOFAC(21)
D-5	H-3	crustacea and mollusks	1.000E+00	1.000E+00	BIOFAC(22)
D-5					
D-5	Pb-210+D	fish	3.000E+02	3.000E+02	BIOFAC(31)

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D-5   Pb-210+D   crustacea and mollusks                    1.000E+02  1.000E+02  BIOFAC(  32)
D-5
D-5   Ra-226+D   fish                                      5.000E+01  5.000E+01  BIOFAC(  41)
D-5   Ra-226+D   crustacea and mollusks                    2.500E+02  2.500E+02  BIOFAC(  42)
D-5
D-5   Ra-228+D   fish                                      5.000E+01  5.000E+01  BIOFAC(  51)
D-5   Ra-228+D   crustacea and mollusks                    2.500E+02  2.500E+02  BIOFAC(  52)
D-5
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Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: FGR 12 & FGR 11

Menu		Parameter	Current Value#	Base Case*	Parameter Name
D-5	Th-228+D	fish	1.000E+02	1.000E+02	BIOFAC(61)
D-5	Th-228+D	crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(62)
D-5					
D-5	Th-230	fish	1.000E+02	1.000E+02	BIOFAC(71)
D-5	Th-230	crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(72)
D-5					
D-5	U-234	fish	1.000E+01	1.000E+01	BIOFAC(81)
D-5	U-234	crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(82)

#For DCF1(xxx) only factors are for infinite depth & area. See ETFG table in Ground Pathway of Detailed Report.
*Base Case means Default.Lib w/o Associate Nuclide contributions.

Site-Specific Parameter Summary

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	8.404E+03	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E-01	2.000E+00	---	THICK0
R011	Fraction of contamination that is submerged	0.000E+00	0.000E+00	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	not used	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	2.500E+01	3.000E+01	---	BRDL
R011	Time since placement of material (yr)	0.000E+00	0.000E+00	---	TI
R011	Times for calculations (yr)	1.000E+00	1.000E+00	---	T(2)
R011	Times for calculations (yr)	2.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	2.400E+00	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+00	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+01	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+01	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+02	1.000E+03	---	T(8)
R011	Times for calculations (yr)	3.000E+02	0.000E+00	---	T(9)
R011	Times for calculations (yr)	1.000E+03	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): Cs-137	1.000E+00	0.000E+00	---	S1(1)
R012	Initial principal radionuclide (pCi/g): H-3	1.000E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Pb-210	1.000E+00	0.000E+00	---	S1(3)
R012	Initial principal radionuclide (pCi/g): Ra-226	1.000E+00	0.000E+00	---	S1(4)
R012	Initial principal radionuclide (pCi/g): Ra-228	1.000E+00	0.000E+00	---	S1(5)
R012	Initial principal radionuclide (pCi/g): Th-230	1.000E+00	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): U-234	1.000E+00	0.000E+00	---	S1(8)
R012	Concentration in groundwater (pCi/L): Cs-137	not used	0.000E+00	---	W1(1)
R012	Concentration in groundwater (pCi/L): H-3	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Pb-210	not used	0.000E+00	---	W1(3)
R012	Concentration in groundwater (pCi/L): Ra-226	not used	0.000E+00	---	W1(4)
R012	Concentration in groundwater (pCi/L): Ra-228	not used	0.000E+00	---	W1(5)
R012	Concentration in groundwater (pCi/L): Th-230	not used	0.000E+00	---	W1(7)
R012	Concentration in groundwater (pCi/L): U-234	not used	0.000E+00	---	W1(8)
R013	Cover depth (m)	0.000E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)	not used	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	1.280E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	6.000E-05	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	3.700E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	6.000E-02	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	2.900E+01	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	7.750E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	3.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	6.600E+00	8.000E+00	---	HUMID

R013	Evapotranspiration coefficient	7.000E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	7.500E-01	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	0.000E+00	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	not used	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	not used	1.000E-03	---	EPS

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R014	Density of saturated zone (g/cm**3)	not used	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	not used	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	not used	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	not used	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	not used	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	not used	2.000E-02	---	HGWT
R014	Saturated zone b parameter	not used	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	not used	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	not used	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	not used	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	not used	2.500E+02	---	UW
R015	Number of unsaturated zone strata	not used	1	---	NS
R015	Unsat. zone 1 thickness (m)	not used	4.000E+00	---	H(1)
R015	Unsat. zone 1 soil density (g/cm**3)	not used	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1 total porosity	not used	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1 effective porosity	not used	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1 field capacity	not used	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1 soil-specific b parameter	not used	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1 hydraulic conductivity (m/yr)	not used	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Cs-137				
R016	Contaminated zone (cm**3/g)	1.900E+03	4.600E+03	---	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	not used	4.600E+03	---	DCNUCU(11)
R016	Saturated zone (cm**3/g)	not used	4.600E+03	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.934E-04	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for H-3				
R016	Contaminated zone (cm**3/g)	6.000E-02	0.000E+00	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	not used	0.000E+00	---	DCNUCU(21)
R016	Saturated zone (cm**3/g)	not used	0.000E+00	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.353E+00	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for Pb-210				
R016	Contaminated zone (cm**3/g)	5.500E+02	1.000E+02	---	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	not used	1.000E+02	---	DCNUCU(31)
R016	Saturated zone (cm**3/g)	not used	1.000E+02	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.704E-03	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)

R016	Distribution coefficients for Ra-226				
R016	Contaminated zone (cm**3/g)	9.100E+03	7.000E+01	---	DCNUCC(4)
R016	Unsaturated zone 1 (cm**3/g)	not used	7.000E+01	---	DCNUCU(41)
R016	Saturated zone (cm**3/g)	not used	7.000E+01	---	DCNUCS(4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.030E-04	ALEACH(4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(4)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Ra-228				
R016	Contaminated zone (cm**3/g)	9.100E+03	7.000E+01	---	DCNUCC(5)
R016	Unsaturated zone 1 (cm**3/g)	not used	7.000E+01	---	DCNUCU(51)
R016	Saturated zone (cm**3/g)	not used	7.000E+01	---	DCNUCS(5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.030E-04	ALEACH(5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(5)
R016	Distribution coefficients for Th-230				
R016	Contaminated zone (cm**3/g)	5.800E+03	6.000E+04	---	DCNUCC(7)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU(71)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS(7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.616E-04	ALEACH(7)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(7)
R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	1.900E+03	5.000E+01	---	DCNUCC(8)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU(81)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS(8)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.934E-04	ALEACH(8)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(8)
R016	Distribution coefficients for daughter Th-228				
R016	Contaminated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCC(6)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU(61)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS(6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.562E-05	ALEACH(6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(6)
R017	Inhalation rate (m**3/yr)	1.051E+04	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	7.580E-07	1.000E-04	---	MLINH
R017	Exposure duration	2.500E+01	3.000E+01	---	ED
R017	Shielding factor inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor external gamma	4.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	0.000E+00	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	1.830E-02	2.500E-01	---	FOTD
R017	Shape factor flag external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m) ring 1:	not used	5.000E+01	---	RAD_SHAPE(1)
R017	Outer annular radius (m) ring 2:	not used	7.071E+01	---	RAD_SHAPE(2)
R017	Outer annular radius (m) ring 3:	not used	0.000E+00	---	RAD_SHAPE(3)
R017	Outer annular radius (m) ring 4:	not used	0.000E+00	---	RAD_SHAPE(4)
R017	Outer annular radius (m) ring 5:	not used	0.000E+00	---	RAD_SHAPE(5)

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R017    Outer annular radius (m) ring  6:            not used   0.000E+00            ---              RAD_SHAPE( 6)
R017    Outer annular radius (m) ring  7:            not used   0.000E+00            ---              RAD_SHAPE( 7)
R017    Outer annular radius (m) ring  8:            not used   0.000E+00            ---              RAD_SHAPE( 8)
R017    Outer annular radius (m) ring  9:            not used   0.000E+00            ---              RAD_SHAPE( 9)
R017    Outer annular radius (m) ring 10:            not used   0.000E+00            ---              RAD_SHAPE(10)
R017    Outer annular radius (m) ring 11:            not used   0.000E+00            ---              RAD_SHAPE(11)
R017    Outer annular radius (m) ring 12:            not used   0.000E+00            ---              RAD_SHAPE(12)
```

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA(1)
R017	Ring 2	not used	2.732E-01	---	FRACA(2)
R017	Ring 3	not used	0.000E+00	---	FRACA(3)
R017	Ring 4	not used	0.000E+00	---	FRACA(4)
R017	Ring 5	not used	0.000E+00	---	FRACA(5)
R017	Ring 6	not used	0.000E+00	---	FRACA(6)
R017	Ring 7	not used	0.000E+00	---	FRACA(7)
R017	Ring 8	not used	0.000E+00	---	FRACA(8)
R017	Ring 9	not used	0.000E+00	---	FRACA(9)
R017	Ring 10	not used	0.000E+00	---	FRACA(10)
R017	Ring 11	not used	0.000E+00	---	FRACA(11)
R017	Ring 12	not used	0.000E+00	---	FRACA(12)
R018	Fruits vegetables and grain consumption (kg/yr)	not used	1.600E+02	---	DIET(1)
R018	Leafy vegetable consumption (kg/yr)	not used	1.400E+01	---	DIET(2)
R018	Milk consumption (L/yr)	not used	9.200E+01	---	DIET(3)
R018	Meat and poultry consumption (kg/yr)	not used	6.300E+01	---	DIET(4)
R018	Fish consumption (kg/yr)	not used	5.400E+00	---	DIET(5)
R018	Other seafood consumption (kg/yr)	not used	9.000E-01	---	DIET(6)
R018	Soil ingestion rate (g/yr)	3.650E+01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	not used	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	not used	1.000E+00	---	FDW
R018	Contamination fraction of household water	not used	1.000E+00	---	FHHW
R018	Contamination fraction of livestock water	not used	1.000E+00	---	FLW
R018	Contamination fraction of irrigation water	not used	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	not used	5.000E-01	---	FR9
R018	Contamination fraction of plant food	not used	-1	---	FPLANT
R018	Contamination fraction of meat	not used	-1	---	FMEAT
R018	Contamination fraction of milk	not used	-1	---	FMILK
R019	Livestock fodder intake for meat (kg/day)	not used	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	not used	5.500E+01	---	LFI6
R019	Livestock water intake for meat (L/day)	not used	5.000E+01	---	LWI5
R019	Livestock water intake for milk (L/day)	not used	1.600E+02	---	LWI6
R019	Livestock soil intake (kg/day)	not used	5.000E-01	---	LSI
R019	Mass loading for foliar deposition (g/m**3)	not used	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	1.500E-01	1.500E-01	---	DM
R019	Depth of roots (m)	not used	9.000E-01	---	DROOT
R019	Drinking water fraction from ground water	not used	1.000E+00	---	FGWDW
R019	Household water fraction from ground water	not used	1.000E+00	---	FGWHH
R019	Livestock water fraction from ground water	not used	1.000E+00	---	FGWLW

R019	Irrigation fraction from ground water	not used	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	not used	7.000E-01	---	YV(1)
R19B	Wet weight crop yield for Leafy (kg/m**2)	not used	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	not used	1.100E+00	---	YV(3)
R19B	Growing Season for Non-Leafy (years)	not used	1.700E-01	---	TE(1)
R19B	Growing Season for Leafy (years)	not used	2.500E-01	---	TE(2)
R19B	Growing Season for Fodder (years)	not used	8.000E-02	---	TE(3)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R19B	Translocation Factor for Non-Leafy	not used	1.000E-01	---	TIV(1)
R19B	Translocation Factor for Leafy	not used	1.000E+00	---	TIV(2)
R19B	Translocation Factor for Fodder	not used	1.000E+00	---	TIV(3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RDRY(1)
R19B	Dry Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RDRY(2)
R19B	Dry Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RDRY(3)
R19B	Wet Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RWET(1)
R19B	Wet Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RWET(2)
R19B	Wet Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RWET(3)
R19B	Weathering Removal Constant for Vegetation	not used	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm**3)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (1/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits non-leafy vegetables and grain	1.400E+01	1.400E+01	---	STOR_T(1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ

R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA(1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA(2)
TITL	Number of graphical time points	32	---	---	NPTS

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	1	---	---	KYMAX

Summary of Pathway Selections

Pathway	User Selection
1 -- external gamma	active
2 -- inhalation (w/o radon)	active
3 -- plant ingestion	suppressed
4 -- meat ingestion	suppressed
5 -- milk ingestion	suppressed
6 -- aquatic foods	suppressed
7 -- drinking water	suppressed
8 -- soil ingestion	active
9 -- radon	suppressed
Find peak pathway doses	suppressed

Summary : Residual Dose and Risk Assessment for Disposal Pit C Under Site Worker Scenario
File : C:\USERS\MRAHMAN\DOCUMENTS\OLD RESRAD FILES\SEAD 12 PIT C-SITE WORKER.RAD

Contaminated Zone Dimensions		Initial Soil Concentrations pCi/g	
Area:	8404.00 square meters	Cs-137	1.000E+00
Thickness:	0.15 meters	H-3	1.000E+00
Cover Depth:	0.00 meters	Pb-210	1.000E+00
		Ra-226	1.000E+00
		Ra-228	1.000E+00
		Th-230	1.000E+00
		U-234	1.000E+00

0

Total Dose TDOSE(t) mrem/yr
Basic Radiation Dose Limit = 2.500E+01 mrem/yr
Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	2.000E+00	2.400E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	3.207E-01	3.406E-01	3.481E-01	3.487E-01	3.477E-01	2.836E-01	1.965E-01	1.656E-01	1.516E-01	1.156E-01
M(t):	1.283E-02	1.363E-02	1.393E-02	1.395E-02	1.391E-02	1.134E-02	7.859E-03	6.622E-03	6.065E-03	4.625E-03

0Maximum TDOSE(t): 3.487E-01 mrem/yr at t = 2.405 ñ 0.005 years
0

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 2.405E+00 years
0 Water Independent Pathways (Inhalation excludes radon)

0 Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	4.830E-02	0.1385	6.275E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.115E-05	0.0001
H-3	0.000E+00	0.0000	1.019E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.297E-16	0.0000
Pb-210	9.504E-05	0.0003	4.443E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.414E-03	0.0127
Ra-226	1.587E-01	0.4551	2.228E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.297E-03	0.0037
Ra-228	1.341E-01	0.3846	3.934E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.643E-04	0.0028
Th-230	2.207E-04	0.0006	6.864E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.668E-04	0.0011
U-234	7.025E-06	0.0000	2.777E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.885E-04	0.0005
Total	3.414E-01	0.9791	1.424E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.262E-03	0.0208

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 2.405E+00 years

0 Water Dependent Pathways

0 Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.833E-02	0.1386
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.032E-14	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.509E-03	0.0129
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.600E-01	0.4589
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.351E-01	0.3874
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.944E-04	0.0017
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.983E-04	0.0006
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.487E-01	1.0000

0*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground mrem/yr	Ground fract.	Inhalation mrem/yr	Inhalation fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	Soil mrem/yr	Soil fract.
Cs-137	5.113E-02	0.1594	6.648E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.300E-05	0.0001
H-3	0.000E+00	0.0000	4.582E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.832E-09	0.0000
Pb-210	1.028E-04	0.0003	4.812E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.781E-03	0.0149
Ra-226	1.590E-01	0.4956	1.887E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.566E-04	0.0030
Ra-228	1.031E-01	0.3216	1.227E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.908E-04	0.0031
Th-230	5.535E-05	0.0002	6.873E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.661E-04	0.0011
U-234	7.030E-06	0.0000	2.783E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.889E-04	0.0006
Total	3.134E-01	0.9772	1.201E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.316E-03	0.0228

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years
Water Dependent Pathways

Radio-Nuclide	Water mrem/yr	Water fract.	Fish mrem/yr	Fish fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	All Pathways* mrem/yr	All Pathways* fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.117E-02	0.1595
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.640E-07	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.884E-03	0.0152
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.599E-01	0.4986
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.041E-01	0.3247
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.284E-04	0.0013
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.988E-04	0.0006
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.207E-01	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	4.993E-02	0.1466	6.490E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.222E-05	0.0001
H-3	0.000E+00	0.0000	3.012E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.833E-12	0.0000
Pb-210	9.953E-05	0.0003	4.655E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.624E-03	0.0136
Ra-226	1.589E-01	0.4663	2.032E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.102E-03	0.0032
Ra-228	1.243E-01	0.3649	2.829E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.007E-03	0.0030
Th-230	1.242E-04	0.0004	6.870E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.664E-04	0.0011
U-234	7.028E-06	0.0000	2.780E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.888E-04	0.0006
Total	3.333E-01	0.9785	1.315E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.321E-03	0.0215

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years
Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.997E-02	0.1467
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.050E-10	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.724E-03	0.0139
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.600E-01	0.4696
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.253E-01	0.3678
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.974E-04	0.0015
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.986E-04	0.0006
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.406E-01	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 2.000E+00 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	4.876E-02	0.1401	6.336E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.145E-05	0.0001
H-3	0.000E+00	0.0000	1.980E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.520E-15	0.0000
Pb-210	9.631E-05	0.0003	4.503E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.474E-03	0.0128
Ra-226	1.588E-01	0.4560	2.173E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.242E-03	0.0036
Ra-228	1.330E-01	0.3821	3.719E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.821E-04	0.0028
Th-230	1.929E-04	0.0006	6.866E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.667E-04	0.0011
U-234	7.025E-06	0.0000	2.778E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.886E-04	0.0005
Total	3.408E-01	0.9790	1.403E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.284E-03	0.0209

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 2.000E+00 years
Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.879E-02	0.1402
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.005E-13	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.570E-03	0.0131
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.600E-01	0.4596
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.340E-01	0.3849
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.664E-04	0.0016
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.984E-04	0.0006
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.481E-01	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 2.400E+00 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	4.830E-02	0.1385	6.276E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.115E-05	0.0001
H-3	0.000E+00	0.0000	1.056E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.344E-16	0.0000
Pb-210	9.506E-05	0.0003	4.443E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.415E-03	0.0127
Ra-226	1.587E-01	0.4551	2.227E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.297E-03	0.0037
Ra-228	1.341E-01	0.3846	3.932E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.645E-04	0.0028
Th-230	2.204E-04	0.0006	6.864E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.668E-04	0.0011
U-234	7.025E-06	0.0000	2.777E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.885E-04	0.0005
Total	3.414E-01	0.9791	1.424E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.262E-03	0.0208

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 2.400E+00 years
Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.833E-02	0.1386
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.069E-14	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.510E-03	0.0129
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.600E-01	0.4589
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.351E-01	0.3873
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.941E-04	0.0017
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.984E-04	0.0006
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.487E-01	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground mrem/yr	Ground fract.	Inhalation mrem/yr	Inhalation fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	Soil mrem/yr	Soil fract.
Cs-137	4.762E-02	0.1370	6.186E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.071E-05	0.0001
H-3	0.000E+00	0.0000	1.301E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.656E-18	0.0000
Pb-210	9.320E-05	0.0003	4.356E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.327E-03	0.0124
Ra-226	1.586E-01	0.4563	2.308E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.378E-03	0.0040
Ra-228	1.338E-01	0.3849	4.138E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.326E-04	0.0027
Th-230	2.616E-04	0.0008	6.862E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.670E-04	0.0011
U-234	7.024E-06	0.0000	2.775E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.884E-04	0.0005
Total	3.404E-01	0.9792	1.444E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.224E-03	0.0208

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years
Water Dependent Pathways

Radio-Nuclide	Water mrem/yr	Water fract.	Fish mrem/yr	Fish fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	All Pathways* mrem/yr	All Pathways* fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.765E-02	0.1370
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.318E-16	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.421E-03	0.0127
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.600E-01	0.4603
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.348E-01	0.3876
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.355E-04	0.0018
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.982E-04	0.0006
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.477E-01	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+01 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	4.033E-02	0.1422	5.229E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.596E-05	0.0001
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	7.407E-05	0.0003	3.453E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.430E-03	0.0121
Ra-226	1.579E-01	0.5568	3.136E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.206E-03	0.0078
Ra-228	7.784E-02	0.2745	2.852E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.796E-04	0.0017
Th-230	7.405E-04	0.0026	6.835E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.710E-04	0.0013
U-234	7.030E-06	0.0000	2.758E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.873E-04	0.0007
Total	2.769E-01	0.9763	1.310E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.700E-03	0.0236

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+01 years
Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.036E-02	0.1423
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.505E-03	0.0124
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.601E-01	0.5645
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.832E-02	0.2762
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.118E-03	0.0039
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.971E-04	0.0007
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.836E-01	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	2.509E-02	0.1277	3.236E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.606E-05	0.0001
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	3.841E-05	0.0002	1.778E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.766E-03	0.0090
Ra-226	1.558E-01	0.7928	4.630E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.707E-03	0.0189
Ra-228	7.356E-03	0.0374	2.748E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.419E-05	0.0002
Th-230	2.090E-03	0.0106	6.761E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.930E-04	0.0020
U-234	7.212E-06	0.0000	2.710E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.840E-04	0.0009
Total	1.904E-01	0.9688	1.039E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.111E-03	0.0311

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years
Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.511E-02	0.1278
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.805E-03	0.0092
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.595E-01	0.8117
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.400E-03	0.0377
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.490E-03	0.0127
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.939E-04	0.0010
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.965E-01	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	4.765E-03	0.0288	6.027E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.992E-06	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	3.859E-06	0.0000	1.740E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.729E-04	0.0010
Ra-226	1.484E-01	0.8964	5.769E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.896E-03	0.0296
Ra-228	1.563E-06	0.0000	5.740E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.229E-09	0.0000
Th-230	6.601E-03	0.0399	6.507E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.134E-04	0.0031
U-234	9.657E-06	0.0001	2.548E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.730E-04	0.0010
Total	1.598E-01	0.9652	9.650E-06	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.758E-03	0.0348

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years
Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.768E-03	0.0288
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.768E-04	0.0011
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.533E-01	0.9260
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.572E-06	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.121E-03	0.0430
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.852E-04	0.0011
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.656E-01	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	4.123E-05	0.0003	4.927E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.446E-08	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	5.423E-09	0.0000	2.265E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.250E-07	0.0000
Ra-226	1.287E-01	0.8487	4.888E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.168E-03	0.0275
Ra-228	4.992E-17	0.0000	1.744E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.804E-19	0.0000
Th-230	1.773E-02	0.1169	5.809E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.276E-04	0.0055
U-234	2.966E-05	0.0002	2.125E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.447E-04	0.0010
Total	1.465E-01	0.9660	8.422E-06	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.141E-03	0.0339

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years
Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.125E-05	0.0003
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.305E-07	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.328E-01	0.8762
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.020E-17	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.856E-02	0.1224
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.765E-04	0.0012
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.516E-01	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	2.343E-12	0.0000	2.250E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.117E-15	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	5.497E-19	0.0000	1.665E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.654E-17	0.0000
Ra-226	7.368E-02	0.6372	2.290E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.953E-03	0.0169
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	3.858E-02	0.3336	3.593E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.175E-03	0.0102
U-234	1.694E-04	0.0015	1.044E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.458E-05	0.0006
Total	1.124E-01	0.9723	4.866E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.203E-03	0.0277

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years
Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.344E-12	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.709E-17	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.564E-02	0.6541
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.975E-02	0.3438
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.450E-04	0.0021
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.156E-01	1.0000

*Sum of all water independent and dependent pathways.

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

0 Parent (i)	Product (j)	Thread Fraction	DSR(jt) At Time in Years (mrem/yr)/(pCi/g) 0.000E+00	1.000E+00	2.000E+00	2.400E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Cs-137+D	Cs-137+D	1.000E+00	5.117E-02	4.997E-02	4.879E-02	4.833E-02	4.765E-02	4.036E-02	2.511E-02	4.768E-03	4.125E-05	2.344E-12
0H-3	H-3	1.000E+00	4.640E-07	3.050E-10	2.005E-13	1.069E-14	1.318E-16	6.985E-39	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0Pb-210+D	Pb-210+D	1.000E+00	4.884E-03	4.724E-03	4.570E-03	4.510E-03	4.421E-03	3.505E-03	1.805E-03	1.768E-04	2.305E-07	1.709E-17
0Ra-226+D	Ra-226+D	1.000E+00	1.598E-01	1.597E-01	1.596E-01	1.596E-01	1.595E-01	1.587E-01	1.566E-01	1.491E-01	1.293E-01	7.394E-02
Ra-226+D	Pb-210+D	1.000E+00	7.630E-05	2.255E-04	3.696E-04	4.259E-04	5.090E-04	1.361E-03	2.912E-03	4.185E-03	3.593E-03	1.698E-03
Ra-226+D	-DSR(j)		1.599E-01	1.600E-01	1.600E-01	1.600E-01	1.600E-01	1.601E-01	1.595E-01	1.533E-01	1.328E-01	7.564E-02
0Ra-228+D	Ra-228+D	1.000E+00	8.280E-02	7.338E-02	6.503E-02	6.196E-02	5.763E-02	2.474E-02	2.209E-03	4.695E-07	1.504E-17	0.000E+00
Ra-228+D	Th-228+D	1.000E+00	2.134E-02	5.192E-02	6.898E-02	7.311E-02	7.712E-02	5.358E-02	5.191E-03	1.103E-06	3.517E-17	0.000E+00
Ra-228+D	-DSR(j)		1.041E-01	1.253E-01	1.340E-01	1.351E-01	1.348E-01	7.832E-02	7.400E-03	1.572E-06	5.020E-17	0.000E+00
0Th-230	Th-230	1.000E+00	3.937E-04	3.935E-04	3.933E-04	3.932E-04	3.931E-04	3.916E-04	3.872E-04	3.723E-04	3.314E-04	2.050E-04
Th-230	Ra-226+D	1.000E+00	3.462E-05	1.038E-04	1.730E-04	2.006E-04	2.420E-04	7.235E-04	2.080E-03	6.613E-03	1.779E-02	3.869E-02
Th-230	Pb-210+D	1.000E+00	1.105E-08	7.658E-08	2.056E-07	2.745E-07	3.959E-07	3.277E-06	2.243E-05	1.354E-04	4.411E-04	8.560E-04
Th-230	-DSR(j)		4.284E-04	4.974E-04	5.664E-04	5.941E-04	6.355E-04	1.118E-03	2.490E-03	7.121E-03	1.856E-02	3.975E-02
0U-234	U-234	1.000E+00	1.988E-04	1.986E-04	1.984E-04	1.983E-04	1.982E-04	1.970E-04	1.936E-04	1.818E-04	1.514E-04	7.408E-05
U-234	Th-230	1.000E+00	1.772E-09	5.312E-09	8.847E-09	1.026E-08	1.238E-08	3.695E-08	1.058E-07	3.314E-07	8.539E-07	1.576E-06
U-234	Ra-226+D	1.000E+00	1.039E-10	7.269E-10	1.972E-09	2.644E-09	3.838E-09	3.420E-08	2.852E-07	2.977E-06	2.371E-05	1.658E-04
U-234	Pb-210+D	1.000E+00	2.490E-14	3.707E-13	1.593E-12	2.454E-12	4.253E-12	1.062E-10	2.208E-09	4.910E-08	5.352E-07	3.564E-06
U-234	-DSR(j)		1.988E-04	1.986E-04	1.984E-04	1.984E-04	1.982E-04	1.971E-04	1.939E-04	1.852E-04	1.765E-04	2.450E-04

The DSR includes contributions from associated (half-life ó 180 days) daughters.
0

Single Radionuclide Soil Guidelines G(it) in pCi/g
Basic Radiation Dose Limit = 2.500E+01 mrem/yr

0Nuclide (i)	t= 0.000E+00	1.000E+00	2.000E+00	2.400E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Cs-137	4.886E+02	5.003E+02	5.124E+02	5.172E+02	5.247E+02	6.194E+02	9.956E+02	5.243E+03	6.060E+05	1.066E+13
H-3	5.388E+07	8.197E+10	1.247E+14	2.338E+15	*9.597E+15	*9.597E+15	*9.597E+15	*9.597E+15	*9.597E+15	*9.597E+15
Pb-210	5.119E+03	5.292E+03	5.470E+03	5.543E+03	5.655E+03	7.133E+03	1.385E+04	1.414E+05	1.085E+08	*7.634E+13
Ra-226	1.563E+02	1.563E+02	1.563E+02	1.562E+02	1.562E+02	1.561E+02	1.568E+02	1.631E+02	1.882E+02	3.305E+02
Ra-228	2.401E+02	1.995E+02	1.865E+02	1.851E+02	1.855E+02	3.192E+02	3.378E+03	1.590E+07	*2.726E+14	*2.726E+14
Th-230	5.836E+04	5.026E+04	4.413E+04	4.208E+04	3.934E+04	2.235E+04	1.004E+04	3.511E+03	1.347E+03	6.289E+02
U-234	1.258E+05	1.259E+05	1.260E+05	1.260E+05	1.261E+05	1.269E+05	1.289E+05	1.350E+05	1.416E+05	1.020E+05

*At specific activity limit

Summary : Residual Dose and Risk Assessment for Disposal Pit C Under Site Worker Scenario
File : C:\USERS\MRAHMAN\DOCUMENTS\OLD RESRAD FILES\SEAD 12 PIT C-SITE WORKER.RAD

Summed Dose/Source Ratios DSR(it) in (mrem/yr)/(pCi/g)
and Single Radionuclide Soil Guidelines G(it) in pCi/g
at tmin = time of minimum single radionuclide soil guideline
and at tmax = time of maximum total dose = 2.405 ñ 0.005 years

0Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(itmin)	G(itmin) (pCi/g)	DSR(itmax)	G(itmax) (pCi/g)
Cs-137	1.000E+00	0.000E+00	5.117E-02	4.886E+02	4.833E-02	5.173E+02
H-3	1.000E+00	0.000E+00	4.640E-07	5.388E+07	1.032E-14	2.423E+15
Pb-210	1.000E+00	0.000E+00	4.884E-03	5.119E+03	4.509E-03	5.544E+03
Ra-226	1.000E+00	9.48 ñ 0.02	1.601E-01	1.561E+02	1.600E-01	1.562E+02
Ra-228	1.000E+00	2.604 ñ 0.005	1.352E-01	1.849E+02	1.351E-01	1.851E+02
Th-230	1.000E+00	1.000E+03	3.975E-02	6.289E+02	5.944E-04	4.206E+04
U-234	1.000E+00	1.000E+03	2.450E-04	1.020E+05	1.983E-04	1.260E+05

Summary : Residual Dose and Risk Assessment for Disposal Pit C Under Site Worker Scenario
File : C:\USERS\MRAHMAN\DOCUMENTS\OLD RESRAD FILES\SEAD 12 PIT C-SITE WORKER.RAD

Individual Nuclide Dose Summed Over All Pathways
Parent Nuclide and Branch Fraction Indicated

0Nuclide (j)	Parent (i)	THF(i)	DOSE(jt) mrem/yr t= 0.000E+00	1.000E+00	2.000E+00	2.400E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Cs-137	Cs-137	1.000E+00	5.117E-02	4.997E-02	4.879E-02	4.833E-02	4.765E-02	4.036E-02	2.511E-02	4.768E-03	4.125E-05	2.344E-12
0H-3	H-3	1.000E+00	4.640E-07	3.050E-10	2.005E-13	1.069E-14	1.318E-16	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0Pb-210	Pb-210	1.000E+00	4.884E-03	4.724E-03	4.570E-03	4.510E-03	4.421E-03	3.505E-03	1.805E-03	1.768E-04	2.305E-07	1.709E-17
Pb-210	Ra-226	1.000E+00	7.630E-05	2.255E-04	3.696E-04	4.259E-04	5.090E-04	1.361E-03	2.912E-03	4.185E-03	3.593E-03	1.698E-03
Pb-210	Th-230	1.000E+00	1.105E-08	7.658E-08	2.056E-07	2.745E-07	3.959E-07	3.277E-06	2.243E-05	1.354E-04	4.411E-04	8.560E-04
Pb-210	U-234	1.000E+00	2.490E-14	3.707E-13	1.593E-12	2.454E-12	4.253E-12	1.062E-10	2.208E-09	4.910E-08	5.352E-07	3.564E-06
Pb-210	-DOSE(j)		4.960E-03	4.950E-03	4.940E-03	4.936E-03	4.930E-03	4.869E-03	4.739E-03	4.497E-03	4.034E-03	2.557E-03
0Ra-226	Ra-226	1.000E+00	1.598E-01	1.597E-01	1.596E-01	1.596E-01	1.595E-01	1.587E-01	1.566E-01	1.491E-01	1.293E-01	7.394E-02
Ra-226	Th-230	1.000E+00	3.462E-05	1.038E-04	1.730E-04	2.006E-04	2.420E-04	7.235E-04	2.080E-03	6.613E-03	1.779E-02	3.869E-02
Ra-226	U-234	1.000E+00	1.039E-10	7.269E-10	1.972E-09	2.644E-09	3.838E-09	3.420E-08	2.852E-07	2.977E-06	2.371E-05	1.658E-04
Ra-226	-DOSE(j)		1.599E-01	1.598E-01	1.598E-01	1.598E-01	1.598E-01	1.595E-01	1.586E-01	1.557E-01	1.471E-01	1.128E-01
0Ra-228	Ra-228	1.000E+00	8.280E-02	7.338E-02	6.503E-02	6.196E-02	5.763E-02	2.474E-02	2.209E-03	4.695E-07	1.504E-17	0.000E+00
0Th-228	Ra-228	1.000E+00	2.134E-02	5.192E-02	6.898E-02	7.311E-02	7.712E-02	5.358E-02	5.191E-03	1.103E-06	3.517E-17	0.000E+00
0Th-230	Th-230	1.000E+00	3.937E-04	3.935E-04	3.933E-04	3.932E-04	3.931E-04	3.916E-04	3.872E-04	3.723E-04	3.314E-04	2.050E-04
Th-230	U-234	1.000E+00	1.772E-09	5.312E-09	8.847E-09	1.026E-08	1.238E-08	3.695E-08	1.058E-07	3.314E-07	8.539E-07	1.576E-06
Th-230	-DOSE(j)		3.937E-04	3.935E-04	3.933E-04	3.932E-04	3.931E-04	3.916E-04	3.873E-04	3.727E-04	3.322E-04	2.066E-04
0U-234	U-234	1.000E+00	1.988E-04	1.986E-04	1.984E-04	1.983E-04	1.982E-04	1.970E-04	1.936E-04	1.818E-04	1.514E-04	7.408E-05

THF(i) is the thread fraction of the parent nuclide.

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

0Nuclide (j)	Parent (i)	THF(i)	S(jt) pCi/g t= 0.000E+00	1.000E+00	2.000E+00	2.400E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Cs-137	Cs-137	1.000E+00	1.000E+00	9.767E-01	9.539E-01	9.449E-01	9.317E-01	7.898E-01	4.927E-01	9.444E-02	8.422E-04	5.642E-11
0H-3	H-3	1.000E+00	1.000E+00	6.576E-04	4.324E-07	2.307E-08	2.843E-10	1.511E-32	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0Pb-210	Pb-210	1.000E+00	1.000E+00	9.677E-01	9.365E-01	9.243E-01	9.063E-01	7.205E-01	3.740E-01	3.768E-02	5.349E-05	5.767E-15
Pb-210	Ra-226	1.000E+00	0.000E+00	3.057E-02	6.014E-02	7.169E-02	8.874E-02	2.643E-01	5.880E-01	8.772E-01	8.205E-01	5.638E-01
Pb-210	Th-230	1.000E+00	0.000E+00	6.658E-06	2.634E-05	3.776E-05	5.861E-05	6.039E-04	4.445E-03	2.820E-02	1.006E-01	2.841E-01
Pb-210	U-234	1.000E+00	0.000E+00	2.003E-11	1.589E-10	2.737E-10	5.318E-10	1.859E-08	4.299E-07	1.017E-05	1.218E-04	1.182E-03
Pb-210	-S(j):		1.000E+00	9.983E-01	9.967E-01	9.961E-01	9.951E-01	9.853E-01	9.664E-01	9.431E-01	9.213E-01	8.490E-01
0Ra-226	Ra-226	1.000E+00	1.000E+00	9.995E-01	9.989E-01	9.987E-01	9.984E-01	9.947E-01	9.840E-01	9.478E-01	8.514E-01	5.849E-01
Ra-226	Th-230	1.000E+00	0.000E+00	4.331E-04	8.658E-04	1.039E-03	1.298E-03	4.317E-03	1.286E-02	4.182E-02	1.169E-01	3.059E-01
Ra-226	U-234	1.000E+00	0.000E+00	1.949E-09	7.793E-09	1.122E-08	1.753E-08	1.942E-07	1.734E-06	1.873E-05	1.556E-04	1.310E-03
Ra-226	-S(j):		1.000E+00	9.999E-01	9.998E-01	9.998E-01	9.997E-01	9.990E-01	9.969E-01	9.896E-01	9.685E-01	8.922E-01
0Ra-228	Ra-228	1.000E+00	1.000E+00	8.863E-01	7.856E-01	7.486E-01	6.963E-01	2.992E-01	2.680E-02	5.757E-06	1.908E-16	0.000E+00
0Th-228	Ra-228	1.000E+00	0.000E+00	2.853E-01	4.514E-01	4.939E-01	5.383E-01	4.086E-01	4.014E-02	8.631E-06	2.861E-16	0.000E+00
0Th-230	Th-230	1.000E+00	1.000E+00	9.998E-01	9.997E-01	9.996E-01	9.995E-01	9.983E-01	9.949E-01	9.831E-01	9.501E-01	8.431E-01
Th-230	U-234	1.000E+00	0.000E+00	8.999E-06	1.799E-05	2.159E-05	2.698E-05	8.972E-05	2.674E-04	8.707E-04	2.444E-03	6.478E-03
Th-230	-S(j):		1.000E+00	9.998E-01	9.997E-01	9.996E-01	9.995E-01	9.984E-01	9.952E-01	9.840E-01	9.525E-01	8.496E-01
0U-234	U-234	1.000E+00	1.000E+00	9.995E-01	9.990E-01	9.988E-01	9.985E-01	9.951E-01	9.852E-01	9.516E-01	8.617E-01	6.088E-01

THF(i) is the thread fraction of the parent nuclide.
0RESCALC.EXE execution time = 0.45 seconds

Intrisk : Residual Dose and Risk Assessment for Disposal Pit C Under Site Worker Scenario
File : C:\USERS\MRAHMAN\DOCUMENTS\OLD RESRAD FILES\SEAD 12 PIT C-SITE WORKER.RAD

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Cancer Risk Slope Factors Summary Table
Risk Library: FGR 13 Morbidity

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Menu	Parameter	Current Value	Base Case*	Parameter Name
Sf-1	Ground external radiation slope factors, 1/yr per (pCi/g):			
Sf-1	Cs-137+D	2.55E-06	5.32E-10	SLPF(1,1)
Sf-1	H-3	0.00E+00	0.00E+00	SLPF(2,1)
Sf-1	Pb-210+D	4.21E-09	1.41E-09	SLPF(3,1)
Sf-1	Ra-226+D	8.49E-06	2.29E-08	SLPF(4,1)
Sf-1	Ra-228+D	4.53E-06	0.00E+00	SLPF(5,1)
Sf-1	Th-228+D	7.76E-06	5.59E-09	SLPF(6,1)
Sf-1	Th-230	8.19E-10	8.19E-10	SLPF(7,1)
Sf-1	U-234	2.52E-10	2.52E-10	SLPF(8,1)
Sf-2	Inhalation, slope factors, 1/(pCi):			
Sf-2	Cs-137+D	1.12E-10	1.12E-10	SLPF(1,2)
Sf-2	H-3	8.51E-13	8.51E-13	SLPF(2,2)
Sf-2	Pb-210+D	3.08E-08	1.58E-08	SLPF(3,2)
Sf-2	Ra-226+D	2.83E-08	2.82E-08	SLPF(4,2)
Sf-2	Ra-228+D	4.37E-08	4.37E-08	SLPF(5,2)
Sf-2	Th-228+D	1.44E-07	1.32E-07	SLPF(6,2)
Sf-2	Th-230	3.40E-08	3.40E-08	SLPF(7,2)
Sf-2	U-234	2.78E-08	2.78E-08	SLPF(8,2)
Sf-3	Food ingestion, slope factors, 1/(pCi):			
Sf-3	Cs-137+D	3.74E-11	3.74E-11	SLPF(1,3)
Sf-3	H-3	1.44E-13	1.44E-13	SLPF(2,3)
Sf-3	Pb-210+D	3.44E-09	1.18E-09	SLPF(3,3)
Sf-3	Ra-226+D	5.15E-10	5.14E-10	SLPF(4,3)
Sf-3	Ra-228+D	1.43E-09	1.43E-09	SLPF(5,3)
Sf-3	Th-228+D	4.22E-10	1.48E-10	SLPF(6,3)
Sf-3	Th-230	1.19E-10	1.19E-10	SLPF(7,3)
Sf-3	U-234	9.55E-11	9.55E-11	SLPF(8,3)
Sf-3	Water ingestion, slope factors, 1/(pCi):			
Sf-3	Cs-137+D	3.04E-11	3.04E-11	SLPF(1,4)
Sf-3	H-3	1.12E-13	1.12E-13	SLPF(2,4)
Sf-3	Pb-210+D	2.66E-09	8.81E-10	SLPF(3,4)
Sf-3	Ra-226+D	3.86E-10	3.85E-10	SLPF(4,4)
Sf-3	Ra-228+D	1.04E-09	1.04E-09	SLPF(5,4)
Sf-3	Th-228+D	2.99E-10	1.07E-10	SLPF(6,4)
Sf-3	Th-230	9.10E-11	9.10E-11	SLPF(7,4)
Sf-3	U-234	7.07E-11	7.07E-11	SLPF(8,4)
Sf-3	Soil ingestion, slope factors, 1/(pCi):			

Sf-3	Cs-137+D	3.74E-11	3.74E-11	SLPF(1,5)
Sf-3	H-3	1.44E-13	1.44E-13	SLPF(2,5)
Sf-3	Pb-210+D	3.44E-09	1.18E-09	SLPF(3,5)
Sf-3	Ra-226+D	5.15E-10	5.14E-10	SLPF(4,5)
Sf-3	Ra-228+D	1.43E-09	1.43E-09	SLPF(5,5)
Sf-3	Th-228+D	4.22E-10	1.48E-10	SLPF(6,5)
Sf-3	Th-230	1.19E-10	1.19E-10	SLPF(7,5)
Sf-3	U-234	9.55E-11	9.55E-11	SLPF(8,5)

Cancer Risk Slope Factors Summary Table (continued)
Risk Library: FGR 13 Morbidity

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Menu	Parameter	Current Value	Base Case*	Parameter Name
Sf-Rn	Radon Inhalation slope factors, 1/(pCi):			
Sf-Rn	Rn-222	1.80E-12	1.80E-12	SLPFRN(1,1)
Sf-Rn	Po-218	3.70E-12	3.70E-12	SLPFRN(1,2)
Sf-Rn	Pb-214	6.20E-12	6.20E-12	SLPFRN(1,3)
Sf-Rn	Bi-214	1.50E-11	1.50E-11	SLPFRN(1,4)
Sf-Rn	Rn-220	1.90E-13	1.90E-13	SLPFRN(2,1)
Sf-Rn	Po-216	3.00E-15	3.00E-15	SLPFRN(2,2)
Sf-Rn	Pb-212	3.90E-11	3.90E-11	SLPFRN(2,3)
Sf-Rn	Bi-212	3.70E-11	3.70E-11	SLPFRN(2,4)
Sf-Rn	Radon K factors, (mrem/WLM):			
Sf-Rn	Rn-222 Indoor	7.60E+02	7.60E+02	KFACTR(1,1)
Sf-Rn	Rn-222 Outdoor	5.70E+02	5.70E+02	KFACTR(1,2)
Sf-Rn	Rn-220 Indoor	1.50E+02	1.50E+02	KFACTR(2,1)
Sf-Rn	Rn-220 Outdoor	2.50E+02	2.50E+02	KFACTR(2,2)

*Base Case means Default.Lib w/o Associate Nuclide contributions.

Risk Slope and Environmental Transport Factors for the Ground Pathway

0Nuclide (i)	Slope(i)*	ETFG(i,t) At Time in Years (dimensionless)									
	t=	0.000E+00	1.000E+00	2.000E+00	2.400E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ac-228	4.530E-06	1.454E-02	1.454E-02	1.454E-02	1.454E-02	1.454E-02	1.452E-02	1.448E-02	1.433E-02	1.385E-02	1.161E-02
At-218	3.570E-09	1.767E-02	1.767E-02	1.767E-02	1.767E-02	1.767E-02	1.767E-02	1.767E-02	1.768E-02	1.771E-02	1.767E-02
Ba-137m	2.690E-06	1.516E-02	1.516E-02	1.516E-02	1.516E-02	1.516E-02	1.514E-02	1.511E-02	1.496E-02	1.452E-02	1.232E-02
Bi-210	2.760E-09	1.664E-02	1.664E-02	1.664E-02	1.664E-02	1.664E-02	1.663E-02	1.661E-02	1.652E-02	1.623E-02	1.455E-02
Bi-212	8.870E-07	1.466E-02	1.466E-02	1.466E-02	1.466E-02	1.466E-02	1.464E-02	1.460E-02	1.445E-02	1.397E-02	1.171E-02
Bi-214	7.480E-06	1.398E-02	1.398E-02	1.398E-02	1.398E-02	1.397E-02	1.396E-02	1.391E-02	1.375E-02	1.325E-02	1.097E-02
Cs-137	5.320E-10	1.708E-02	1.707E-02	1.707E-02	1.707E-02	1.707E-02	1.707E-02	1.705E-02	1.699E-02	1.678E-02	1.543E-02
H-3	0.000E+00	1.830E-02	1.830E-02	1.830E-02	1.830E-02	1.830E-02	1.830E-02	1.830E-02	1.830E-02	1.830E-02	1.830E-02
Pb-210	1.410E-09	1.788E-02	1.788E-02	1.788E-02	1.788E-02	1.788E-02	1.788E-02	1.788E-02	1.789E-02	1.790E-02	1.790E-02
Pb-212	5.090E-07	1.648E-02	1.647E-02	1.647E-02	1.647E-02	1.647E-02	1.646E-02	1.644E-02	1.634E-02	1.604E-02	1.425E-02
Pb-214	9.820E-07	1.591E-02	1.590E-02	1.590E-02	1.590E-02	1.590E-02	1.589E-02	1.586E-02	1.574E-02	1.535E-02	1.333E-02
Po-210	3.950E-11	1.491E-02	1.491E-02	1.490E-02	1.490E-02	1.490E-02	1.489E-02	1.485E-02	1.470E-02	1.423E-02	1.199E-02
Po-212	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Po-214	3.860E-10	1.482E-02	1.482E-02	1.482E-02	1.481E-02	1.481E-02	1.480E-02	1.476E-02	1.461E-02	1.415E-02	1.193E-02
Po-216	7.870E-11	1.483E-02	1.483E-02	1.483E-02	1.483E-02	1.482E-02	1.481E-02	1.477E-02	1.462E-02	1.415E-02	1.192E-02
Po-218	4.260E-11	1.482E-02	1.482E-02	1.482E-02	1.482E-02	1.482E-02	1.480E-02	1.476E-02	1.461E-02	1.415E-02	1.191E-02
Ra-224	3.720E-08	1.637E-02	1.636E-02	1.636E-02	1.636E-02	1.636E-02	1.635E-02	1.632E-02	1.622E-02	1.589E-02	1.401E-02
Ra-226	2.290E-08	1.657E-02	1.656E-02	1.656E-02	1.656E-02	1.656E-02	1.655E-02	1.653E-02	1.644E-02	1.614E-02	1.440E-02
Ra-228	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Rn-220	1.700E-09	1.529E-02	1.528E-02	1.528E-02	1.528E-02	1.528E-02	1.527E-02	1.523E-02	1.509E-02	1.465E-02	1.247E-02
Rn-222	1.740E-09	1.535E-02	1.534E-02	1.534E-02	1.534E-02	1.534E-02	1.533E-02	1.529E-02	1.515E-02	1.472E-02	1.256E-02
Th-228	5.590E-09	1.698E-02	1.698E-02	1.698E-02	1.698E-02	1.698E-02	1.697E-02	1.695E-02	1.689E-02	1.667E-02	1.522E-02
Th-230	8.190E-10	1.730E-02	1.730E-02	1.730E-02	1.730E-02	1.730E-02	1.729E-02	1.729E-02	1.725E-02	1.712E-02	1.611E-02
Tl-208	1.760E-05	1.304E-02	1.303E-02	1.303E-02	1.303E-02	1.303E-02	1.301E-02	1.297E-02	1.280E-02	1.228E-02	1.002E-02
Tl-210	0.000E+00	1.830E-02	1.830E-02	1.830E-02	1.830E-02	1.830E-02	1.830E-02	1.830E-02	1.830E-02	1.830E-02	1.830E-02
U-234	2.520E-10	1.751E-02	1.751E-02	1.751E-02	1.751E-02	1.750E-02	1.750E-02	1.750E-02	1.747E-02	1.737E-02	1.657E-02

* - Units are 1/yr per (pCi/g) at infinite depth and area. Multiplication by ETFG(i,t) converts to site conditions.

Intrisk : Residual Dose and Risk Assessment for Disposal Pit C Under Site Worker Scenario
File : C:\USERS\MRAHMAN\DOCUMENTS\OLD RESRAD FILES\SEAD 12 PIT C-SITE WORKER.RAD

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 0.000E+00 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Cs-137	2.109E-05	0.000E+00	0.000E+00	0.000E+00	6.680E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.680E-01
H-3	5.248E+01	0.000E+00	0.000E+00	0.000E+00	6.680E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.680E-01
Pb-210	2.109E-05	0.000E+00	0.000E+00	0.000E+00	6.680E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.680E-01
Ra-226	2.109E-05	0.000E+00	0.000E+00	0.000E+00	6.680E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.680E-01
Ra-228	2.109E-05	0.000E+00	0.000E+00	0.000E+00	6.680E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.680E-01
Th-228	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	2.109E-05	0.000E+00	0.000E+00	0.000E+00	6.680E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.680E-01
U-234	2.109E-05	0.000E+00	0.000E+00	0.000E+00	6.680E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.680E-01

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil and water-dependent water, fish, plant, meat, milk pathways

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of Radon and its Decay Products as pCi/yr at t= 0.000E+00 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p) and Fraction of Total Risk at t= 0.000E+00 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	9.649E-07	0.1686	5.905E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.245E-10	0.0001
H-3	0.000E+00	0.0000	1.116E-09	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.405E-12	0.0000
Pb-210	1.793E-09	0.0003	1.622E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.749E-08	0.0100
Ra-226	3.015E-06	0.5267	1.491E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.596E-09	0.0015
Ra-228	1.647E-06	0.2877	2.307E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.393E-08	0.0042
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	3.542E-10	0.0001	1.793E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.987E-09	0.0003
U-234	1.103E-10	0.0000	1.466E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.595E-09	0.0003
Total	5.629E-06	0.9833	1.203E-09	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.423E-08	0.0165

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 0.000E+00 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All Pathways** risk	All Pathways** fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.656E-07	0.1687
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.119E-09	0.0002
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.930E-08	0.0104
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.024E-06	0.5282
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.671E-06	0.2919
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.359E-09	0.0004
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.720E-09	0.0003
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.725E-06	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

0

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 0.000E+00 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 0.000E+00 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground risk	Ground fract.	Inhalation risk	Inhalation fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	Soil risk	Soil fract.
Cs-137	9.649E-07	0.1686	5.905E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.245E-10	0.0001
H-3	0.000E+00	0.0000	1.116E-09	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.405E-12	0.0000
Pb-210	1.793E-09	0.0003	1.622E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.749E-08	0.0100
Ra-226	3.015E-06	0.5267	1.491E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.596E-09	0.0015
Ra-228	1.647E-06	0.2877	2.307E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.393E-08	0.0042
Th-230	3.542E-10	0.0001	1.793E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.987E-09	0.0003
U-234	1.103E-10	0.0000	1.466E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.595E-09	0.0003
Total	5.629E-06	0.9833	1.203E-09	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.423E-08	0.0165

0

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 0.000E+00 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All pathways risk	All pathways fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.656E-07	0.1687
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.119E-09	0.0002
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.930E-08	0.0104
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.024E-06	0.5282
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.671E-06	0.2919
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.359E-09	0.0004
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.720E-09	0.0003
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.725E-06	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Intrisk : Residual Dose and Risk Assessment for Disposal Pit C Under Site Worker Scenario
File : C:\USERS\MRAHMAN\DOCUMENTS\OLD RESRAD FILES\SEAD 12 PIT C-SITE WORKER.RAD

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 1.000E+00 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Cs-137	2.059E-05	0.000E+00	0.000E+00	0.000E+00	6.521E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.521E-01
H-3	3.449E-02	0.000E+00	0.000E+00	0.000E+00	4.390E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.390E-04
Pb-210	2.105E-05	0.000E+00	0.000E+00	0.000E+00	6.666E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.666E-01
Ra-226	2.108E-05	0.000E+00	0.000E+00	0.000E+00	6.676E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.676E-01
Ra-228	1.869E-05	0.000E+00	0.000E+00	0.000E+00	5.918E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.918E-01
Th-228	6.014E-06	0.000E+00	0.000E+00	0.000E+00	1.905E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.905E-01
Th-230	2.108E-05	0.000E+00	0.000E+00	0.000E+00	6.676E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.676E-01
U-234	2.107E-05	0.000E+00	0.000E+00	0.000E+00	6.674E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.674E-01

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil and water-dependent water, fish, plant, meat, milk pathways

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of Radon and its Decay Products as pCi/yr at t= 1.000E+00 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p) and Fraction of Total Risk at t= 1.000E+00 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	9.423E-07	0.1506	5.765E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.097E-10	0.0001
H-3	0.000E+00	0.0000	7.339E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.581E-15	0.0000
Pb-210	1.790E-09	0.0003	1.618E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.737E-08	0.0092
Ra-226	3.014E-06	0.4817	1.490E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.591E-09	0.0014
Ra-228	1.460E-06	0.2333	2.044E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.120E-08	0.0034
Th-228	7.456E-07	0.1192	2.165E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.011E-09	0.0003
Th-230	3.541E-10	0.0001	1.792E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.986E-09	0.0003
U-234	1.102E-10	0.0000	1.464E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.593E-09	0.0003
Total	6.164E-06	0.9851	1.065E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.337E-08	0.0149

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+00 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All Pathways** risk	All Pathways** fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.429E-07	0.1507
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.355E-13	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.918E-08	0.0095
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.023E-06	0.4831
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.481E-06	0.2366
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.477E-07	0.1195
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.358E-09	0.0004
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.718E-09	0.0003
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.258E-06	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

0

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 1.000E+00 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+00 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	9.423E-07	0.1506	5.765E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.097E-10	0.0001
H-3	0.000E+00	0.0000	7.339E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.581E-15	0.0000
Pb-210	1.735E-09	0.0003	1.569E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.562E-08	0.0089
Ra-226	3.013E-06	0.4815	1.539E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.034E-08	0.0017
Ra-228	2.205E-06	0.3524	4.209E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.321E-08	0.0037
Th-230	1.660E-09	0.0003	1.792E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.990E-09	0.0003
U-234	1.102E-10	0.0000	1.464E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.593E-09	0.0003
Total	6.164E-06	0.9851	1.065E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.337E-08	0.0149

0

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+00 years

Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.429E-07	0.1507
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.355E-13	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.737E-08	0.0092
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.023E-06	0.4832
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.229E-06	0.3561
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.668E-09	0.0006
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.718E-09	0.0003
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.258E-06	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Intrisk : Residual Dose and Risk Assessment for Disposal Pit C Under Site Worker Scenario
File : C:\USERS\MRAHMAN\DOCUMENTS\OLD RESRAD FILES\SEAD 12 PIT C-SITE WORKER.RAD

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 2.000E+00 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Cs-137	2.010E-05	0.000E+00	0.000E+00	0.000E+00	6.366E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.366E-01
H-3	2.267E-05	0.000E+00	0.000E+00	0.000E+00	2.886E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.886E-07
Pb-210	2.100E-05	0.000E+00	0.000E+00	0.000E+00	6.652E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.652E-01
Ra-226	2.107E-05	0.000E+00	0.000E+00	0.000E+00	6.673E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.673E-01
Ra-228	1.656E-05	0.000E+00	0.000E+00	0.000E+00	5.243E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.243E-01
Th-228	9.513E-06	0.000E+00	0.000E+00	0.000E+00	3.013E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.013E-01
Th-230	2.107E-05	0.000E+00	0.000E+00	0.000E+00	6.672E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.672E-01
U-234	2.105E-05	0.000E+00	0.000E+00	0.000E+00	6.668E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.668E-01

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil and water-dependent water, fish, plant, meat, milk pathways

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of Radon and its Decay Products as pCi/yr at t= 2.000E+00 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p) and Fraction of Total Risk at t= 2.000E+00 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	9.202E-07	0.1415	5.628E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.953E-10	0.0001
H-3	0.000E+00	0.0000	4.824E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.039E-18	0.0000
Pb-210	1.787E-09	0.0003	1.615E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.726E-08	0.0088
Ra-226	3.014E-06	0.4635	1.489E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.587E-09	0.0013
Ra-228	1.294E-06	0.1990	1.811E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.878E-08	0.0029
Th-228	1.180E-06	0.1815	3.425E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.182E-09	0.0005
Th-230	3.541E-10	0.0001	1.791E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.985E-09	0.0003
U-234	1.102E-10	0.0000	1.463E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.592E-09	0.0002
Total	6.409E-06	0.9858	1.160E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.198E-08	0.0141

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 2.000E+00 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All Pathways** risk	All Pathways** fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.208E-07	0.1416
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.834E-16	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.906E-08	0.0091
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.022E-06	0.4649
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.312E-06	0.2019
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.183E-06	0.1819
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.357E-09	0.0004
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.717E-09	0.0003
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.501E-06	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

0

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 2.000E+00 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 2.000E+00 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	9.202E-07	0.1415	5.628E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.953E-10	0.0001
H-3	0.000E+00	0.0000	4.824E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.039E-18	0.0000
Pb-210	1.679E-09	0.0003	1.517E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.380E-08	0.0083
Ra-226	3.011E-06	0.4631	1.585E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.203E-08	0.0019
Ra-228	2.473E-06	0.3804	5.236E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.196E-08	0.0034
Th-230	2.964E-09	0.0005	1.792E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.994E-09	0.0003
U-234	1.102E-10	0.0000	1.463E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.592E-09	0.0002
Total	6.409E-06	0.9858	1.160E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.198E-08	0.0141

0

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 2.000E+00 years

Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.208E-07	0.1416
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.834E-16	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.550E-08	0.0085
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.023E-06	0.4650
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.495E-06	0.3838
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.976E-09	0.0008
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.717E-09	0.0003
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.501E-06	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Intrisk : Residual Dose and Risk Assessment for Disposal Pit C Under Site Worker Scenario
File : C:\USERS\MRAHMAN\DOCUMENTS\OLD RESRAD FILES\SEAD 12 PIT C-SITE WORKER.RAD

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 2.400E+00 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Cs-137	1.991E-05	0.000E+00	0.000E+00	0.000E+00	6.306E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.306E-01
H-3	1.210E-06	0.000E+00	0.000E+00	0.000E+00	1.539E-08	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.539E-08
Pb-210	2.099E-05	0.000E+00	0.000E+00	0.000E+00	6.647E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.647E-01
Ra-226	2.106E-05	0.000E+00	0.000E+00	0.000E+00	6.671E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.671E-01
Ra-228	1.577E-05	0.000E+00	0.000E+00	0.000E+00	4.995E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.995E-01
Th-228	1.041E-05	0.000E+00	0.000E+00	0.000E+00	3.296E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.296E-01
Th-230	2.106E-05	0.000E+00	0.000E+00	0.000E+00	6.670E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.670E-01
U-234	2.104E-05	0.000E+00	0.000E+00	0.000E+00	6.665E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.665E-01

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 2.400E+00 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 2.400E+00 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	9.115E-07	0.1393	5.575E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.896E-10	0.0001
H-3	0.000E+00	0.0000	2.573E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.542E-20	0.0000
Pb-210	1.786E-09	0.0003	1.614E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.721E-08	0.0087
Ra-226	3.013E-06	0.4606	1.489E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.585E-09	0.0013
Ra-228	1.233E-06	0.1884	1.725E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.789E-08	0.0027
Th-228	1.291E-06	0.1973	3.747E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.481E-09	0.0005
Th-230	3.540E-10	0.0001	1.790E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.984E-09	0.0003
U-234	1.102E-10	0.0000	1.463E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.591E-09	0.0002
Total	6.450E-06	0.9860	1.183E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.134E-08	0.0140

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 2.400E+00 years

Water Dependent Pathways

Radio-	Water		Fish		Plant		Meat		Milk		All Pathways**	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.121E-07	0.1394
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.579E-17	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.901E-08	0.0090
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.022E-06	0.4619
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.250E-06	0.1912
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.294E-06	0.1978
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.356E-09	0.0004
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.716E-09	0.0003
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.542E-06	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

0

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 2.400E+00 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 2.400E+00 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	9.115E-07	0.1393	5.575E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.896E-10	0.0001
H-3	0.000E+00	0.0000	2.573E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.542E-20	0.0000
Pb-210	1.657E-09	0.0003	1.497E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.309E-08	0.0081
Ra-226	3.010E-06	0.4602	1.603E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.269E-08	0.0019
Ra-228	2.523E-06	0.3857	5.472E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.138E-08	0.0033
Th-230	3.485E-09	0.0005	1.792E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.996E-09	0.0003
U-234	1.102E-10	0.0000	1.463E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.591E-09	0.0002
Total	6.450E-06	0.9860	1.183E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.134E-08	0.0140

0

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 2.400E+00 years

Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.121E-07	0.1394
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.579E-17	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.476E-08	0.0084
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.023E-06	0.4621
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.545E-06	0.3890
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.499E-09	0.0008
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.716E-09	0.0003
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.542E-06	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Intrisk : Residual Dose and Risk Assessment for Disposal Pit C Under Site Worker Scenario
File : C:\USERS\MRAHMAN\DOCUMENTS\OLD RESRAD FILES\SEAD 12 PIT C-SITE WORKER.RAD

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 3.000E+00 years

Radio-	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total
Nuclide	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	Ingestion*
Cs-137	1.963E-05	0.000E+00	0.000E+00	0.000E+00	6.216E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.216E-01
H-3	1.490E-08	0.000E+00	0.000E+00	0.000E+00	1.897E-10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.897E-10
Pb-210	2.096E-05	0.000E+00	0.000E+00	0.000E+00	6.639E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.639E-01
Ra-226	2.106E-05	0.000E+00	0.000E+00	0.000E+00	6.669E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.669E-01
Ra-228	1.467E-05	0.000E+00	0.000E+00	0.000E+00	4.645E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.645E-01
Th-228	1.134E-05	0.000E+00	0.000E+00	0.000E+00	3.591E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.591E-01
Th-230	2.105E-05	0.000E+00	0.000E+00	0.000E+00	6.668E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.668E-01
U-234	2.103E-05	0.000E+00	0.000E+00	0.000E+00	6.662E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.662E-01

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 3.000E+00 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+00 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	8.986E-07	0.1370	5.495E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.812E-10	0.0001
H-3	0.000E+00	0.0000	3.171E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.829E-22	0.0000
Pb-210	1.784E-09	0.0003	1.612E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.714E-08	0.0087
Ra-226	3.013E-06	0.4595	1.488E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.583E-09	0.0013
Ra-228	1.146E-06	0.1748	1.604E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.664E-08	0.0025
Th-228	1.407E-06	0.2145	4.083E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.793E-09	0.0006
Th-230	3.540E-10	0.0001	1.790E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.984E-09	0.0003
U-234	1.101E-10	0.0000	1.462E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.590E-09	0.0002
Total	6.467E-06	0.9862	1.204E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.032E-08	0.0138

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+00 years

Water Dependent Pathways

Radio-	Water		Fish		Plant		Meat		Milk		All Pathways**	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.992E-07	0.1371
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.177E-19	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.894E-08	0.0090
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.021E-06	0.4608
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.163E-06	0.1774
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.410E-06	0.2151
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.356E-09	0.0004
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.715E-09	0.0003
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.557E-06	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

0

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 3.000E+00 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+00 years

0 Water Independent Pathways (Inhalation excludes radon)

0

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	8.986E-07	0.1370	5.495E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.812E-10	0.0001
H-3	0.000E+00	0.0000	3.171E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.829E-22	0.0000
Pb-210	1.625E-09	0.0002	1.468E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.205E-08	0.0079
Ra-226	3.009E-06	0.4589	1.630E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.367E-08	0.0021
Ra-228	2.553E-06	0.3893	5.687E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.043E-08	0.0031
Th-230	4.267E-09	0.0007	1.792E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.998E-09	0.0003
U-234	1.102E-10	0.0000	1.462E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.591E-09	0.0002
Total	6.467E-06	0.9862	1.204E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.032E-08	0.0138

0

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+00 years

Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.992E-07	0.1371
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.177E-19	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.369E-08	0.0082
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.023E-06	0.4610
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.573E-06	0.3925
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.283E-09	0.0010
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.715E-09	0.0003
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.557E-06	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Intrisk : Residual Dose and Risk Assessment for Disposal Pit C Under Site Worker Scenario
File : C:\USERS\MRAHMAN\DOCUMENTS\OLD RESRAD FILES\SEAD 12 PIT C-SITE WORKER.RAD

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 1.000E+01 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Cs-137	1.659E-05	0.000E+00	0.000E+00	0.000E+00	5.254E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.254E-01
H-3	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	2.070E-05	0.000E+00	0.000E+00	0.000E+00	6.555E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.555E-01
Ra-226	2.098E-05	0.000E+00	0.000E+00	0.000E+00	6.646E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.646E-01
Ra-228	6.286E-06	0.000E+00	0.000E+00	0.000E+00	1.991E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.991E-01
Th-228	8.583E-06	0.000E+00	0.000E+00	0.000E+00	2.718E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.718E-01
Th-230	2.097E-05	0.000E+00	0.000E+00	0.000E+00	6.642E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.642E-01
U-234	2.090E-05	0.000E+00	0.000E+00	0.000E+00	6.620E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.620E-01

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 1.000E+01 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+01 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	7.611E-07	0.1407	4.645E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.913E-10	0.0001
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	1.766E-09	0.0003	1.591E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.642E-08	0.0104
Ra-226	3.007E-06	0.5561	1.483E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.552E-09	0.0016
Ra-228	4.922E-07	0.0910	6.875E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.131E-09	0.0013
Th-228	1.066E-06	0.1972	3.090E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.870E-09	0.0005
Th-230	3.535E-10	0.0001	1.783E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.976E-09	0.0004
U-234	1.097E-10	0.0000	1.453E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.580E-09	0.0003
Total	5.329E-06	0.9854	1.009E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.903E-08	0.0146

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+01 years

Water Dependent Pathways

Radio-	Water		Fish		Plant		Meat		Milk		All Pathways**	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.616E-07	0.1408
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.821E-08	0.0108
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.016E-06	0.5577
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.993E-07	0.0923
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.069E-06	0.1977
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.347E-09	0.0004
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.705E-09	0.0003
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.408E-06	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

0

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 1.000E+01 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+01 years

0 Water Independent Pathways (Inhalation excludes radon)

0 Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	7.611E-07	0.1407	4.645E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.913E-10	0.0001
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	1.291E-09	0.0002	1.164E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.126E-08	0.0076
Ra-226	2.995E-06	0.5538	1.904E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.365E-08	0.0044
Ra-228	1.558E-06	0.2882	3.778E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.000E-08	0.0018
Th-230	1.335E-08	0.0025	1.790E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.047E-09	0.0004
U-234	1.103E-10	0.0000	1.453E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.581E-09	0.0003
Total	5.329E-06	0.9854	1.009E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.903E-08	0.0146

0

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+01 years

Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.616E-07	0.1408
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.256E-08	0.0079
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.019E-06	0.5581
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.569E-06	0.2900
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.542E-08	0.0029
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.706E-09	0.0003
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.408E-06	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Intrisk : Residual Dose and Risk Assessment for Disposal Pit C Under Site Worker Scenario
File : C:\USERS\MRAHMAN\DOCUMENTS\OLD RESRAD FILES\SEAD 12 PIT C-SITE WORKER.RAD

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 3.000E+01 years

Radio-	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total
Nuclide	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	Ingestion*
Cs-137	1.027E-05	0.000E+00	0.000E+00	0.000E+00	3.251E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.251E-01
H-3	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	2.014E-05	0.000E+00	0.000E+00	0.000E+00	6.378E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.378E-01
Ra-226	2.077E-05	0.000E+00	0.000E+00	0.000E+00	6.579E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.579E-01
Ra-228	5.583E-07	0.000E+00	0.000E+00	0.000E+00	1.768E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.768E-02
Th-228	8.364E-07	0.000E+00	0.000E+00	0.000E+00	2.649E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.649E-02
Th-230	2.074E-05	0.000E+00	0.000E+00	0.000E+00	6.567E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.567E-01
U-234	2.053E-05	0.000E+00	0.000E+00	0.000E+00	6.502E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.502E-01

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 3.000E+01 years

Radon	Radionuclides							
Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+01 years
Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	4.736E-07	0.1285	2.874E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.040E-10	0.0001
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	1.731E-09	0.0005	1.548E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.490E-08	0.0149
Ra-226	2.992E-06	0.8121	1.468E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.466E-09	0.0023
Ra-228	4.394E-08	0.0119	6.107E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.335E-10	0.0002
Th-228	1.044E-07	0.0283	3.012E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.797E-10	0.0001
Th-230	3.522E-10	0.0001	1.763E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.954E-09	0.0005
U-234	1.086E-10	0.0000	1.427E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.552E-09	0.0004
Total	3.616E-06	0.9815	6.571E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.808E-08	0.0185

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+01 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All Pathways** risk	All Pathways** fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.739E-07	0.1286
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.664E-08	0.0154
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.000E-06	0.8144
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.458E-08	0.0121
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.047E-07	0.0284
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.324E-09	0.0006
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.675E-09	0.0005
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.684E-06	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 3.000E+01 years
Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+01 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	4.736E-07	0.1285	2.874E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.040E-10	0.0001
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	6.697E-10	0.0002	5.991E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.124E-08	0.0058
Ra-226	2.954E-06	0.8019	2.391E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.176E-08	0.0113
Ra-228	1.484E-07	0.0403	3.622E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.132E-10	0.0002
Th-230	3.896E-08	0.0106	1.788E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.315E-09	0.0006
U-234	1.139E-10	0.0000	1.427E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.553E-09	0.0004
Total	3.616E-06	0.9815	6.571E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.808E-08	0.0185

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+01 years

Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.739E-07	0.1286
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.192E-08	0.0059
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.996E-06	0.8133
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.493E-07	0.0405
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.129E-08	0.0112
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.681E-09	0.0005
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.684E-06	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Intrisk : Residual Dose and Risk Assessment for Disposal Pit C Under Site Worker Scenario
File : C:\USERS\MRAHMAN\DOCUMENTS\OLD RESRAD FILES\SEAD 12 PIT C-SITE WORKER.RAD

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 1.000E+02 years

Radio-	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total
Nuclide	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	Ingestion*
Cs-137	1.912E-06	0.000E+00	0.000E+00	0.000E+00	6.056E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.056E-02
H-3	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	1.909E-05	0.000E+00	0.000E+00	0.000E+00	6.047E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.047E-01
Ra-226	2.004E-05	0.000E+00	0.000E+00	0.000E+00	6.346E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.346E-01
Ra-228	1.166E-10	0.000E+00	0.000E+00	0.000E+00	3.692E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.692E-06
Th-228	1.747E-10	0.000E+00	0.000E+00	0.000E+00	5.535E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.535E-06
Th-230	1.992E-05	0.000E+00	0.000E+00	0.000E+00	6.309E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.309E-01
U-234	1.927E-05	0.000E+00	0.000E+00	0.000E+00	6.102E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.102E-01

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 1.000E+02 years

Radon	Radionuclides							
Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+02 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	8.993E-08	0.0291	5.354E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.662E-11	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	1.683E-09	0.0005	1.468E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.205E-08	0.0168
Ra-226	2.937E-06	0.9496	1.416E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.166E-09	0.0026
Ra-228	9.342E-12	0.0000	1.275E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.322E-13	0.0000
Th-228	2.218E-11	0.0000	6.292E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.844E-14	0.0000
Th-230	3.475E-10	0.0001	1.693E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.877E-09	0.0006
U-234	1.047E-10	0.0000	1.339E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.457E-09	0.0005
Total	3.029E-06	0.9794	5.917E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.361E-08	0.0206

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+02 years

Water Dependent Pathways

Radio-	Water		Fish		Plant		Meat		Milk		All Pathways**	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.998E-08	0.0291
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.375E-08	0.0174
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.945E-06	0.9523
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.474E-12	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.224E-11	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.242E-09	0.0007
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.575E-09	0.0005
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.093E-06	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

0

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 1.000E+02 years

0

Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+02 years

0 Water Independent Pathways (Inhalation excludes radon)

0

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	8.993E-08	0.0291	5.354E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.662E-11	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	6.725E-11	0.0000	5.865E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.080E-09	0.0007
Ra-226	2.815E-06	0.9100	2.722E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.624E-08	0.0182
Ra-228	3.152E-11	0.0000	7.567E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.907E-13	0.0000
Th-230	1.245E-07	0.0403	1.796E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.777E-09	0.0012
U-234	1.607E-10	0.0001	1.341E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.459E-09	0.0005
Total	3.029E-06	0.9794	5.917E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.361E-08	0.0206

0

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+02 years

Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.998E-08	0.0291
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.147E-09	0.0007
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.871E-06	0.9282
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.171E-11	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.283E-07	0.0415
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.633E-09	0.0005
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.093E-06	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 3.000E+02 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Cs-137	1.563E-08	0.000E+00	0.000E+00	0.000E+00	4.950E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.950E-04
H-3	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	1.710E-05	0.000E+00	0.000E+00	0.000E+00	5.415E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.415E-01
Ra-226	1.797E-05	0.000E+00	0.000E+00	0.000E+00	5.693E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.693E-01
Ra-228	3.542E-21	0.000E+00	0.000E+00	0.000E+00	1.122E-16	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.122E-16
Th-228	5.310E-21	0.000E+00	0.000E+00	0.000E+00	1.682E-16	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.682E-16
Th-230	1.768E-05	0.000E+00	0.000E+00	0.000E+00	5.599E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.599E-01
U-234	1.599E-05	0.000E+00	0.000E+00	0.000E+00	5.065E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.065E-01

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 3.000E+02 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+02 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	7.781E-10	0.0003	4.377E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.629E-13	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	1.626E-09	0.0006	1.315E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.661E-08	0.0164
Ra-226	2.774E-06	0.9789	1.270E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.326E-09	0.0026
Ra-228	2.994E-22	0.0000	3.874E-27	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.018E-24	0.0000
Th-228	7.075E-22	0.0000	1.912E-26	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.776E-24	0.0000
Th-230	3.339E-10	0.0001	1.503E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.666E-09	0.0006
U-234	9.431E-11	0.0000	1.111E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.209E-09	0.0004
Total	2.777E-06	0.9799	5.199E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.681E-08	0.0200

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+02 years

Water Dependent Pathways

Radio-	Water		Fish		Plant		Meat		Milk		All Pathways**	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.786E-10	0.0003
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.825E-08	0.0170
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.782E-06	0.9815
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.034E-22	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.093E-22	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.015E-09	0.0007
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.315E-09	0.0005
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.834E-06	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

0

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 3.000E+02 years

0

Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Intrisk : Residual Dose and Risk Assessment for Disposal Pit C Under Site Worker Scenario
File : C:\USERS\MRAHMAN\DOCUMENTS\OLD RESRAD FILES\SEAD 12 PIT C-SITE WORKER.RAD

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+02 years

0 Water Independent Pathways (Inhalation excludes radon)

0 Radio-Nuclide	Ground risk	Ground fract.	Inhalation risk	Inhalation fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	Soil risk	Soil fract.
Cs-137	7.781E-10	0.0003	4.377E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.629E-13	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	9.439E-14	0.0000	7.633E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.706E-12	0.0000
Ra-226	2.440E-06	0.8611	2.288E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.795E-08	0.0169
Ra-228	1.007E-21	0.0000	2.299E-26	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.794E-24	0.0000
Th-230	3.355E-07	0.1184	1.796E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.633E-09	0.0027
U-234	5.412E-10	0.0002	1.116E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.221E-09	0.0004
Total	2.777E-06	0.9799	5.199E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.681E-08	0.0200

0

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+02 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All pathways risk	All pathways fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.786E-10	0.0003
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.801E-12	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.488E-06	0.8780
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.013E-21	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.432E-07	0.1211
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.773E-09	0.0006
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.834E-06	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 1.000E+03 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Cs-137	7.139E-16	0.000E+00	0.000E+00	0.000E+00	2.261E-11	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.261E-11
H-3	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	1.074E-05	0.000E+00	0.000E+00	0.000E+00	3.403E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.403E-01
Ra-226	1.129E-05	0.000E+00	0.000E+00	0.000E+00	3.576E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.576E-01
Ra-228	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-228	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	1.075E-05	0.000E+00	0.000E+00	0.000E+00	3.405E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.405E-01
U-234	7.704E-06	0.000E+00	0.000E+00	0.000E+00	2.440E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.440E-01

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 1.000E+03 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+03 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	4.422E-17	0.0000	1.999E-24	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.114E-20	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	1.398E-09	0.0006	8.260E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.929E-08	0.0135
Ra-226	2.130E-06	0.9828	7.979E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.601E-09	0.0021
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	2.802E-10	0.0001	9.138E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.013E-09	0.0005
U-234	6.357E-11	0.0000	5.354E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.826E-10	0.0003
Total	2.131E-06	0.9836	3.073E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.548E-08	0.0164

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+03 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All Pathways** risk	All Pathways** fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.424E-17	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.069E-08	0.0142
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.134E-06	0.9849
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.302E-09	0.0006
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.515E-10	0.0003
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.167E-06	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

0

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 1.000E+03 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+03 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	4.422E-17	0.0000	1.999E-24	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.114E-20	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	9.497E-24	0.0000	5.611E-26	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.989E-22	0.0000
Ra-226	1.397E-06	0.6448	1.072E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.246E-08	0.0104
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	7.310E-07	0.3373	1.457E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.238E-08	0.0057
U-234	3.195E-09	0.0015	5.447E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.378E-10	0.0003
Total	2.131E-06	0.9836	3.073E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.548E-08	0.0164

0

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+03 years

Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.424E-17	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.085E-22	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.420E-06	0.6552
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.434E-07	0.3431
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.838E-09	0.0018
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.167E-06	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

ATTACHMENT G-3

DOSE AND RISK CALCULATION AND

OUTPUT DOSE AND RISK ASSESSMENTS SUMMARY REPORTS

FOR DISPOSAL PIT A/B UNDER FUTURE CONSTRUCTION WORKER

Table G-3-1: Results of Residual Dose Assessment for Disposal Pit A/B under Future Construction Worker Scenario

Nuclide	EPC (pCi/g)	Dose to Source Ratio ((mrem/yr)/(pCi/g))							
		T = 0 Year				T=1000 Years			
		Ground	Inhalation	Soil	All Pathways	Ground	Inhalation	Soil	All Pathways
Ac-227	0.295	3.9E-01	1.2E+00	5.8E-01	2.2E+00	2E-05	7.0E-05	3E-05	1.3E-04
Cs-137	0.117	6.2E-01	5.9E-06	2.0E-03	6.2E-01	5E-04	4.4E-09	1E-06	5.0E-04
H-3	20.09	0	3.0E-06	3.5E-07	3.4E-06	0	0	0	0
Th-230	0.205	6.7E-04	6.2E-02	2.2E-02	8.4E-02	5E-02	5.2E-02	3E-02	1.3E-01

Nuclide	Dose (mrem/yr)							
	T = 0 Year				T=1000 Years			
	Ground	Inhalation	Soil	All Pathways	Ground	Inhalation	Soil	All Pathways
Ac-227	1.1E-01	3.7E-01	1.7E-01	6.5E-01	7.0E-06	2.1E-05	9.6E-06	3.7E-05
Cs-137	7.3E-02	7.0E-07	2.3E-04	7.3E-02	5.8E-05	5.2E-10	1.7E-07	5.9E-05
H-3	0.0E+00	6.1E-05	7.0E-06	6.8E-05	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Th-230	1.4E-04	1.3E-02	4.5E-03	1.7E-02	1.1E-02	1.1E-02	5.2E-03	2.7E-02
	Cumulative Dose			**7E-01**	**Cumulative Dose**			**3E-02**

Table G-3-2: Results of Residual Risk Assessment for Disposal Pit A/B under Future Construction Worker Scenario

Nuclide	EPC (pCi/g)	Risk to Source Ratio (1/(pCi/g))							
		T = 0 Year				T=1000 Years			
		Ground	Inhalation	Soil	All Pathways	Ground	Inhalation	Soil	All Pathways
Ac-227	0.295	2.9E-07	4.0E-08	2.6E-08	3.5E-07	2.4E-21	2.4E-22	1.6E-22	2.8E-21
Cs-137	0.117	4.7E-07	2.1E-11	1.5E-09	4.7E-07	2.1E-17	7.2E-22	5.1E-20	2.1E-17
H-3	20.09	0	3.0E-10	5.8E-12	3.0E-10	0	0	0	0
Th-230	0.205	1.7E-10	6.4E-09	4.8E-09	1.1E-08	3.1E-08	3.4E-09	4.4E-09	3.9E-08

Nuclide	Risk (unitless)							
	T = 0 Year				T=1000 Years			
	Ground	Inhalation	Soil	All Pathways	Ground	Inhalation	Soil	All Pathways
Ac-227	8.5E-08	1.2E-08	7.7E-09	1.0E-07	7.2E-22	7.2E-23	4.7E-23	8.4E-22
Cs-137	5.5E-08	2.5E-12	1.7E-10	5.5E-08	2.5E-18	8.4E-23	5.9E-21	2.5E-18
H-3	0.0E+00	5.9E-09	1.2E-10	6.0E-09	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Th-230	3.5E-11	1.3E-09	9.7E-10	2.3E-09	6.3E-09	7.0E-10	9.1E-10	7.9E-09
	Cumulative Risk			**2E-07**	**Cumulative Risk**			**8E-09**

Summary : Residual Dose and Risk Assessment for Pit A/B Under Construction Worker Scenari
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Dose Conversion Factor (and Related) Parameter Summary
Dose Library: FGR 12 & FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation (mrem/yr)/(pCi/g)			
A-1	Ac-227 (Source: FGR 12)	4.951E-04	4.951E-04	DCF1(1)
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1(2)
A-1	Ba-137m (Source: FGR 12)	3.606E+00	3.606E+00	DCF1(3)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1(4)
A-1	Bi-211 (Source: FGR 12)	2.559E-01	2.559E-01	DCF1(5)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1(6)
A-1	Cs-137 (Source: FGR 12)	7.510E-04	7.510E-04	DCF1(7)
A-1	Fr-223 (Source: FGR 12)	1.980E-01	1.980E-01	DCF1(8)
A-1	H-3 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1(9)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1(10)
A-1	Pb-211 (Source: FGR 12)	3.064E-01	3.064E-01	DCF1(11)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1(12)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1(13)
A-1	Po-211 (Source: FGR 12)	4.764E-02	4.764E-02	DCF1(14)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1(15)
A-1	Po-215 (Source: FGR 12)	1.016E-03	1.016E-03	DCF1(16)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1(17)
A-1	Ra-223 (Source: FGR 12)	6.034E-01	6.034E-01	DCF1(18)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1(19)
A-1	Rn-219 (Source: FGR 12)	3.083E-01	3.083E-01	DCF1(20)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1(21)
A-1	Th-227 (Source: FGR 12)	5.212E-01	5.212E-01	DCF1(22)
A-1	Th-230 (Source: FGR 12)	1.209E-03	1.209E-03	DCF1(23)
A-1	Tl-207 (Source: FGR 12)	1.980E-02	1.980E-02	DCF1(24)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1(25)
B-1	Dose conversion factors for inhalation mrem/pCi:			
B-1	Ac-227+D	6.724E+00	6.700E+00	DCF2(1)
B-1	Cs-137+D	3.190E-05	3.190E-05	DCF2(2)
B-1	H-3	6.400E-08	6.400E-08	DCF2(3)
B-1	Pb-210+D	2.320E-02	1.360E-02	DCF2(4)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2(5)
B-1	Th-230	3.260E-01	3.260E-01	DCF2(6)
D-1	Dose conversion factors for ingestion mrem/pCi:			
D-1	Ac-227+D	1.480E-02	1.410E-02	DCF3(1)
D-1	Cs-137+D	5.000E-05	5.000E-05	DCF3(2)
D-1	H-3	6.400E-08	6.400E-08	DCF3(3)
D-1	Pb-210+D	7.276E-03	5.370E-03	DCF3(4)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3(5)

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D-1   Th-230                                                  5.480E-04  5.480E-04  DCF3(  6)

D-34  Food transfer factors:
D-34  Ac-227+D   plant/soil concentration ratio dimensionless    2.500E-03  2.500E-03  RTF(  11)
D-34  Ac-227+D   beef/livestock-intake ratio (pCi/kg)/(pCi/d)    2.000E-05  2.000E-05  RTF(  12)
D-34  Ac-227+D   milk/livestock-intake ratio (pCi/L)/(pCi/d)     2.000E-05  2.000E-05  RTF(  13)
D-34
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Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: FGR 12 & FGR 11

Menu		Parameter	Current Value#	Base Case*	Parameter Name
D-34	Cs-137+D	plant/soil concentration ratio dimensionless	4.000E-02	4.000E-02	RTF(21)
D-34	Cs-137+D	beef/livestock-intake ratio (pCi/kg)/(pCi/d)	3.000E-02	3.000E-02	RTF(22)
D-34	Cs-137+D	milk/livestock-intake ratio (pCi/L)/(pCi/d)	8.000E-03	8.000E-03	RTF(23)
D-34					
D-34	H-3	plant/soil concentration ratio dimensionless	4.800E+00	4.800E+00	RTF(31)
D-34	H-3	beef/livestock-intake ratio (pCi/kg)/(pCi/d)	1.200E-02	1.200E-02	RTF(32)
D-34	H-3	milk/livestock-intake ratio (pCi/L)/(pCi/d)	1.000E-02	1.000E-02	RTF(33)
D-34					
D-34	Pb-210+D	plant/soil concentration ratio dimensionless	1.000E-02	1.000E-02	RTF(41)
D-34	Pb-210+D	beef/livestock-intake ratio (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(42)
D-34	Pb-210+D	milk/livestock-intake ratio (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(43)
D-34					
D-34	Ra-226+D	plant/soil concentration ratio dimensionless	4.000E-02	4.000E-02	RTF(51)
D-34	Ra-226+D	beef/livestock-intake ratio (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(52)
D-34	Ra-226+D	milk/livestock-intake ratio (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(53)
D-34					
D-34	Th-230	plant/soil concentration ratio dimensionless	1.000E-03	1.000E-03	RTF(61)
D-34	Th-230	beef/livestock-intake ratio (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(62)
D-34	Th-230	milk/livestock-intake ratio (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(63)
D-5	Bioaccumulation factors fresh water L/kg:				
D-5	Ac-227+D	fish	1.500E+01	1.500E+01	BIOFAC(11)
D-5	Ac-227+D	crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(12)
D-5					
D-5	Cs-137+D	fish	2.000E+03	2.000E+03	BIOFAC(21)
D-5	Cs-137+D	crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(22)
D-5					
D-5	H-3	fish	1.000E+00	1.000E+00	BIOFAC(31)
D-5	H-3	crustacea and mollusks	1.000E+00	1.000E+00	BIOFAC(32)
D-5					
D-5	Pb-210+D	fish	3.000E+02	3.000E+02	BIOFAC(41)
D-5	Pb-210+D	crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(42)
D-5					
D-5	Ra-226+D	fish	5.000E+01	5.000E+01	BIOFAC(51)
D-5	Ra-226+D	crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(52)
D-5					
D-5	Th-230	fish	1.000E+02	1.000E+02	BIOFAC(61)
D-5	Th-230	crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(62)

#For DCF1(xxx) only factors are for infinite depth & area. See ETFG table in Ground Pathway of Detailed Report.
*Base Case means Default.Lib w/o Associate Nuclide contributions.

Site-Specific Parameter Summary

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	2.160E+03	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E-01	2.000E+00	---	THICK0
R011	Fraction of contamination that is submerged	0.000E+00	0.000E+00	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	not used	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	2.500E+01	3.000E+01	---	BRDL
R011	Time since placement of material (yr)	0.000E+00	0.000E+00	---	TI
R011	Times for calculations (yr)	1.000E+00	1.000E+00	---	T(2)
R011	Times for calculations (yr)	2.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	3.000E+00	1.000E+01	---	T(4)
R011	Times for calculations (yr)	1.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	3.000E+01	1.000E+02	---	T(6)
R011	Times for calculations (yr)	1.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	3.000E+02	1.000E+03	---	T(8)
R011	Times for calculations (yr)	1.000E+03	0.000E+00	---	T(9)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): Ac-227	1.000E+00	0.000E+00	---	S1(1)
R012	Initial principal radionuclide (pCi/g): Cs-137	1.000E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): H-3	1.000E+00	0.000E+00	---	S1(3)
R012	Initial principal radionuclide (pCi/g): Th-230	1.000E+00	0.000E+00	---	S1(6)
R012	Concentration in groundwater (pCi/L): Ac-227	not used	0.000E+00	---	W1(1)
R012	Concentration in groundwater (pCi/L): Cs-137	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): H-3	not used	0.000E+00	---	W1(3)
R012	Concentration in groundwater (pCi/L): Th-230	not used	0.000E+00	---	W1(6)
R013	Cover depth (m)	0.000E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)	not used	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	1.280E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	6.000E-05	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	3.700E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	6.000E-02	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	2.900E+01	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	7.750E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	3.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	6.600E+00	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	7.000E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	7.500E-01	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	0.000E+00	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	not used	1.000E+06	---	WAREA

R013	Accuracy for water/soil computations	not used	1.000E-03	---	EPS
R014	Density of saturated zone (g/cm**3)	not used	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	not used	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	not used	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	not used	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	not used	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	not used	2.000E-02	---	HGWT

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R014	Saturated zone b parameter	not used	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	not used	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	not used	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	not used	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	not used	2.500E+02	---	UW
R015	Number of unsaturated zone strata	not used	1	---	NS
R015	Unsat. zone 1 thickness (m)	not used	4.000E+00	---	H(1)
R015	Unsat. zone 1 soil density (g/cm**3)	not used	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1 total porosity	not used	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1 effective porosity	not used	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1 field capacity	not used	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1 soil-specific b parameter	not used	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1 hydraulic conductivity (m/yr)	not used	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Ac-227				
R016	Contaminated zone (cm**3/g)	2.400E+03	2.000E+01	---	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+01	---	DCNUCU(11)
R016	Saturated zone (cm**3/g)	not used	2.000E+01	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.906E-04	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for Cs-137				
R016	Contaminated zone (cm**3/g)	1.900E+03	4.600E+03	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	not used	4.600E+03	---	DCNUCU(21)
R016	Saturated zone (cm**3/g)	not used	4.600E+03	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.934E-04	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for H-3				
R016	Contaminated zone (cm**3/g)	6.000E-02	0.000E+00	---	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	not used	0.000E+00	---	DCNUCU(31)
R016	Saturated zone (cm**3/g)	not used	0.000E+00	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.353E+00	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)
R016	Distribution coefficients for Th-230				
R016	Contaminated zone (cm**3/g)	5.800E+03	6.000E+04	---	DCNUCC(6)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU(61)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS(6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.616E-04	ALEACH(6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(6)

R016	Distribution coefficients for daughter Pb-210				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC(4)
R016	Unsaturated zone 1 (cm**3/g)	not used	1.000E+02	---	DCNUCU(41)
R016	Saturated zone (cm**3/g)	not used	1.000E+02	---	DCNUCS(4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.354E-03	ALEACH(4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(4)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for daughter Ra-226				
R016	Contaminated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCC(5)
R016	Unsaturated zone 1 (cm**3/g)	not used	7.000E+01	---	DCNUCU(51)
R016	Saturated zone (cm**3/g)	not used	7.000E+01	---	DCNUCS(5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.335E-02	ALEACH(5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(5)
R017	Inhalation rate (m**3/yr)	1.100E+04	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	6.000E-04	1.000E-04	---	MLINH
R017	Exposure duration	1.000E+00	3.000E+01	---	ED
R017	Shielding factor inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor external gamma	4.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	0.000E+00	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	2.280E-01	2.500E-01	---	FOTD
R017	Shape factor flag external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m) ring 1:	not used	5.000E+01	---	RAD_SHAPE(1)
R017	Outer annular radius (m) ring 2:	not used	7.071E+01	---	RAD_SHAPE(2)
R017	Outer annular radius (m) ring 3:	not used	0.000E+00	---	RAD_SHAPE(3)
R017	Outer annular radius (m) ring 4:	not used	0.000E+00	---	RAD_SHAPE(4)
R017	Outer annular radius (m) ring 5:	not used	0.000E+00	---	RAD_SHAPE(5)
R017	Outer annular radius (m) ring 6:	not used	0.000E+00	---	RAD_SHAPE(6)
R017	Outer annular radius (m) ring 7:	not used	0.000E+00	---	RAD_SHAPE(7)
R017	Outer annular radius (m) ring 8:	not used	0.000E+00	---	RAD_SHAPE(8)
R017	Outer annular radius (m) ring 9:	not used	0.000E+00	---	RAD_SHAPE(9)
R017	Outer annular radius (m) ring 10:	not used	0.000E+00	---	RAD_SHAPE(10)
R017	Outer annular radius (m) ring 11:	not used	0.000E+00	---	RAD_SHAPE(11)
R017	Outer annular radius (m) ring 12:	not used	0.000E+00	---	RAD_SHAPE(12)
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA(1)
R017	Ring 2	not used	2.732E-01	---	FRACA(2)
R017	Ring 3	not used	0.000E+00	---	FRACA(3)
R017	Ring 4	not used	0.000E+00	---	FRACA(4)
R017	Ring 5	not used	0.000E+00	---	FRACA(5)
R017	Ring 6	not used	0.000E+00	---	FRACA(6)
R017	Ring 7	not used	0.000E+00	---	FRACA(7)
R017	Ring 8	not used	0.000E+00	---	FRACA(8)
R017	Ring 9	not used	0.000E+00	---	FRACA(9)
R017	Ring 10	not used	0.000E+00	---	FRACA(10)
R017	Ring 11	not used	0.000E+00	---	FRACA(11)
R017	Ring 12	not used	0.000E+00	---	FRACA(12)

R018	Fruits vegetables and grain consumption (kg/yr)	not used	1.600E+02	---	DIET(1)
R018	Leafy vegetable consumption (kg/yr)	not used	1.400E+01	---	DIET(2)
R018	Milk consumption (L/yr)	not used	9.200E+01	---	DIET(3)
R018	Meat and poultry consumption (kg/yr)	not used	6.300E+01	---	DIET(4)
R018	Fish consumption (kg/yr)	not used	5.400E+00	---	DIET(5)
R018	Other seafood consumption (kg/yr)	not used	9.000E-01	---	DIET(6)
R018	Soil ingestion rate (g/yr)	1.752E+02	3.650E+01	---	SOIL

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R018	Drinking water intake (L/yr)	not used	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	not used	1.000E+00	---	FDW
R018	Contamination fraction of household water	not used	1.000E+00	---	FHHW
R018	Contamination fraction of livestock water	not used	1.000E+00	---	FLW
R018	Contamination fraction of irrigation water	not used	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	not used	5.000E-01	---	FR9
R018	Contamination fraction of plant food	not used	-1	---	FPLANT
R018	Contamination fraction of meat	not used	-1	---	FMEAT
R018	Contamination fraction of milk	not used	-1	---	FMILK
R019	Livestock fodder intake for meat (kg/day)	not used	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	not used	5.500E+01	---	LFI6
R019	Livestock water intake for meat (L/day)	not used	5.000E+01	---	LWI5
R019	Livestock water intake for milk (L/day)	not used	1.600E+02	---	LWI6
R019	Livestock soil intake (kg/day)	not used	5.000E-01	---	LSI
R019	Mass loading for foliar deposition (g/m**3)	not used	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	1.500E-01	1.500E-01	---	DM
R019	Depth of roots (m)	not used	9.000E-01	---	DROOT
R019	Drinking water fraction from ground water	not used	1.000E+00	---	FGWDW
R019	Household water fraction from ground water	not used	1.000E+00	---	FGWHH
R019	Livestock water fraction from ground water	not used	1.000E+00	---	FGWLW
R019	Irrigation fraction from ground water	not used	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	not used	7.000E-01	---	YV(1)
R19B	Wet weight crop yield for Leafy (kg/m**2)	not used	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	not used	1.100E+00	---	YV(3)
R19B	Growing Season for Non-Leafy (years)	not used	1.700E-01	---	TE(1)
R19B	Growing Season for Leafy (years)	not used	2.500E-01	---	TE(2)
R19B	Growing Season for Fodder (years)	not used	8.000E-02	---	TE(3)
R19B	Translocation Factor for Non-Leafy	not used	1.000E-01	---	TIV(1)
R19B	Translocation Factor for Leafy	not used	1.000E+00	---	TIV(2)
R19B	Translocation Factor for Fodder	not used	1.000E+00	---	TIV(3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RDRY(1)
R19B	Dry Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RDRY(2)
R19B	Dry Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RDRY(3)
R19B	Wet Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RWET(1)
R19B	Wet Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RWET(2)
R19B	Wet Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RWET(3)
R19B	Weathering Removal Constant for Vegetation	not used	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm**3)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ

C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (1/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits non-leafy vegetables and grain	1.400E+01	1.400E+01	---	STOR_T(1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA(1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA(2)
TITL	Number of graphical time points	32	---	---	NPTS
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	1	---	---	KYMAX

Summary of Pathway Selections

Pathway	User Selection
1 -- external gamma	active
2 -- inhalation (w/o radon)	active
3 -- plant ingestion	suppressed
4 -- meat ingestion	suppressed
5 -- milk ingestion	suppressed
6 -- aquatic foods	suppressed
7 -- drinking water	suppressed
8 -- soil ingestion	active
9 -- radon	suppressed
Find peak pathway doses	suppressed

Summary : Residual Dose and Risk Assessment for Pit A/B Under Construction Worker Scenari
File : C:\USERS\MRAHMAN\DOCUMENTS\OLD RESRAD FILES\PIT AB-CONSTRUCTION WORKER.RAD

Contaminated Zone Dimensions		Initial Soil Concentrations pCi/g	
Area:	2160.00 square meters	Ac-227	1.000E+00
Thickness:	0.15 meters	Cs-137	1.000E+00
Cover Depth:	0.00 meters	H-3	1.000E+00
		Th-230	1.000E+00

0

Total Dose TDOSE(t) mrem/yr
Basic Radiation Dose Limit = 2.500E+01 mrem/yr
Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	2.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	2.928E+00	2.843E+00	2.761E+00	2.681E+00	2.187E+00	1.246E+00	2.722E-01	1.323E-01	8.746E-02
M(t):	1.171E-01	1.137E-01	1.104E-01	1.072E-01	8.746E-02	4.984E-02	1.089E-02	5.292E-03	3.498E-03

0Maximum TDOSE(t): 2.928E+00 mrem/yr at t = 0.000E+00 years

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	3.879E-01	0.1325	1.251E+00	0.4271	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.815E-01	0.1986
Cs-137	6.217E-01	0.2124	5.959E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.974E-03	0.0007
H-3	0.000E+00	0.0000	3.028E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.488E-07	0.0000
Th-230	6.703E-04	0.0002	6.161E-02	0.0210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.190E-02	0.0075
Total	1.010E+00	0.3451	1.312E+00	0.4482	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.054E-01	0.2068

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years
Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.220E+00	0.7582
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.237E-01	0.2130
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.377E-06	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.418E-02	0.0287
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.928E+00	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	3.755E-01	0.1321	1.210E+00	0.4258	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.629E-01	0.1980
Cs-137	6.072E-01	0.2136	5.817E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.927E-03	0.0007
H-3	0.000E+00	0.0000	1.991E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.292E-10	0.0000
Th-230	1.494E-03	0.0005	6.158E-02	0.0217	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.191E-02	0.0077
Total	9.842E-01	0.3462	1.272E+00	0.4474	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.867E-01	0.2064

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years
Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.149E+00	0.7559
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.091E-01	0.2143
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.220E-09	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.498E-02	0.0299
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.843E+00	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 2.000E+00 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	3.636E-01	0.1317	1.172E+00	0.4244	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.448E-01	0.1974
Cs-137	5.929E-01	0.2148	5.679E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.881E-03	0.0007
H-3	0.000E+00	0.0000	1.308E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.507E-13	0.0000
Th-230	2.306E-03	0.0008	6.154E-02	0.0223	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.193E-02	0.0079
Total	9.588E-01	0.3473	1.233E+00	0.4467	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.686E-01	0.2060

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 2.000E+00 years
Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.080E+00	0.7535
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.948E-01	0.2155
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.459E-12	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.577E-02	0.0311
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.761E+00	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	3.520E-01	0.1313	1.134E+00	0.4230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.273E-01	0.1967
Cs-137	5.790E-01	0.2160	5.545E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.836E-03	0.0007
H-3	0.000E+00	0.0000	8.600E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.904E-17	0.0000
Th-230	3.107E-03	0.0012	6.151E-02	0.0229	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.195E-02	0.0082
Total	9.341E-01	0.3485	1.195E+00	0.4460	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.511E-01	0.2056

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years
Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.013E+00	0.7510
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.809E-01	0.2167
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.591E-16	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.656E-02	0.0323
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.681E+00	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+01 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	2.807E-01	0.1284	9.024E-01	0.4127	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.197E-01	0.1919
Cs-137	4.904E-01	0.2243	4.687E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.552E-03	0.0007
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	8.403E-03	0.0038	6.127E-02	0.0280	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.216E-02	0.0101
Total	7.795E-01	0.3565	9.637E-01	0.4407	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.434E-01	0.2028

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+01 years
Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.603E+00	0.7330
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.919E-01	0.2250
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.183E-02	0.0420
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.187E+00	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	1.470E-01	0.1180	4.699E-01	0.3771	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.185E-01	0.1754
Cs-137	3.050E-01	0.2448	2.900E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.606E-04	0.0008
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	2.091E-02	0.0168	6.059E-02	0.0486	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.314E-02	0.0186
Total	4.730E-01	0.3796	5.305E-01	0.4257	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.426E-01	0.1947

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years
Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.354E-01	0.6705
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.060E-01	0.2456
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.046E-01	0.0840
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.246E+00	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	1.529E-02	0.0562	4.784E-02	0.1758	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.225E-02	0.0817
Cs-137	5.788E-02	0.2126	5.402E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.789E-04	0.0007
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	4.449E-02	0.1634	5.824E-02	0.2140	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.604E-02	0.0957
Total	1.177E-01	0.4322	1.061E-01	0.3897	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.847E-02	0.1780

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years
Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.538E-02	0.3137
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.805E-02	0.2133
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.288E-01	0.4731
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.722E-01	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	2.369E-05	0.0002	6.965E-05	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.239E-05	0.0002
Cs-137	4.996E-04	0.0038	4.416E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.463E-06	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	5.455E-02	0.4123	5.164E-02	0.3903	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.549E-02	0.1927
Total	5.507E-02	0.4162	5.171E-02	0.3908	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.553E-02	0.1929

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years
Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.257E-04	0.0010
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.011E-04	0.0038
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.317E-01	0.9953
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.323E-01	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	3.287E-15	0.0000	7.581E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.525E-15	0.0000
Cs-137	2.816E-11	0.0000	2.017E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.679E-14	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	4.069E-02	0.4652	3.124E-02	0.3572	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.553E-02	0.1776
Total	4.069E-02	0.4652	3.124E-02	0.3572	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.553E-02	0.1776

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years
Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.439E-14	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.822E-11	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.746E-02	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.746E-02	1.0000

*Sum of all water independent and dependent pathways.

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

0 Parent (i)	Product (j)	Thread Fraction	DSR(jt) At Time in Years (mrem/yr)/(pCi/g) 0.000E+00	1.000E+00	2.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ac-227+D	Ac-227+D	1.000E+00	2.220E+00	2.149E+00	2.080E+00	2.013E+00	1.603E+00	8.354E-01	8.538E-02	1.257E-04	1.439E-14
0Cs-137+D	Cs-137+D	1.000E+00	6.237E-01	6.091E-01	5.948E-01	5.809E-01	4.919E-01	3.060E-01	5.805E-02	5.011E-04	2.822E-11
0H-3	H-3	1.000E+00	3.377E-06	2.220E-09	1.459E-12	9.591E-16	5.084E-38	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0Th-230	Th-230	1.000E+00	8.375E-02	8.370E-02	8.365E-02	8.360E-02	8.327E-02	8.232E-02	7.905E-02	7.004E-02	4.243E-02
Th-230	Ra-226+D	1.000E+00	4.276E-04	1.275E-03	2.110E-03	2.933E-03	8.377E-03	2.123E-02	4.544E-02	5.570E-02	4.134E-02
Th-230	Pb-210+D	1.000E+00	6.558E-07	4.519E-06	1.205E-05	2.305E-05	1.818E-04	1.088E-03	4.288E-03	5.933E-03	3.689E-03
Th-230	-DSR(j)		8.418E-02	8.498E-02	8.577E-02	8.656E-02	9.183E-02	1.046E-01	1.288E-01	1.317E-01	8.746E-02

The DSR includes contributions from associated (half-life ó 180 days) daughters.

0

Single Radionuclide Soil Guidelines G(it) in pCi/g
Basic Radiation Dose Limit = 2.500E+01 mrem/yr

0Nuclide (i)	t= 0.000E+00	1.000E+00	2.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ac-227	1.126E+01	1.163E+01	1.202E+01	1.242E+01	1.560E+01	2.992E+01	2.928E+02	1.988E+05	*7.232E+13
Cs-137	4.008E+01	4.104E+01	4.203E+01	4.304E+01	5.082E+01	8.170E+01	4.306E+02	4.990E+04	8.858E+11
H-3	7.403E+06	1.126E+10	1.713E+13	*9.597E+15	*9.597E+15	*9.597E+15	*9.597E+15	*9.597E+15	*9.597E+15
Th-230	2.970E+02	2.942E+02	2.915E+02	2.888E+02	2.722E+02	2.389E+02	1.941E+02	1.899E+02	2.858E+02

*At specific activity limit

0

Summed Dose/Source Ratios DSR(it) in (mrem/yr)/(pCi/g)
and Single Radionuclide Soil Guidelines G(it) in pCi/g
at tmin = time of minimum single radionuclide soil guideline
and at tmax = time of maximum total dose = 0.000E+00 years

0Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(itmin) (pCi/g)	G(itmin) (pCi/g)	DSR(itmax) (pCi/g)	G(itmax) (pCi/g)
Ac-227	1.000E+00	0.000E+00	2.220E+00	1.126E+01	2.220E+00	1.126E+01
Cs-137	1.000E+00	0.000E+00	6.237E-01	4.008E+01	6.237E-01	4.008E+01
H-3	1.000E+00	0.000E+00	3.377E-06	7.403E+06	3.377E-06	7.403E+06
Th-230	1.000E+00	191.6 ñ 0.4	1.353E-01	1.848E+02	8.418E-02	2.970E+02

Individual Nuclide Dose Summed Over All Pathways
Parent Nuclide and Branch Fraction Indicated

0Nuclide (j)	Parent (i)	THF(i)	DOSE(jt) mrem/yr t= 0.000E+00	1.000E+00	2.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ac-227	Ac-227	1.000E+00	2.220E+00	2.149E+00	2.080E+00	2.013E+00	1.603E+00	8.354E-01	8.538E-02	1.257E-04	1.439E-14
0Cs-137	Cs-137	1.000E+00	6.237E-01	6.091E-01	5.948E-01	5.809E-01	4.919E-01	3.060E-01	5.805E-02	5.011E-04	2.822E-11
0H-3	H-3	1.000E+00	3.377E-06	2.220E-09	1.459E-12	9.591E-16	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0Th-230	Th-230	1.000E+00	8.375E-02	8.370E-02	8.365E-02	8.360E-02	8.327E-02	8.232E-02	7.905E-02	7.004E-02	4.243E-02
0Ra-226	Th-230	1.000E+00	4.276E-04	1.275E-03	2.110E-03	2.933E-03	8.377E-03	2.123E-02	4.544E-02	5.570E-02	4.134E-02
0Pb-210	Th-230	1.000E+00	6.558E-07	4.519E-06	1.205E-05	2.305E-05	1.818E-04	1.088E-03	4.288E-03	5.933E-03	3.689E-03

THF(i) is the thread fraction of the parent nuclide.

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

0Nuclide (j)	Parent (i)	THF(i)	S(jt) pCi/g t= 0.000E+00	1.000E+00	2.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ac-227	Ac-227	1.000E+00	1.000E+00	9.683E-01	9.376E-01	9.078E-01	7.245E-01	3.803E-01	3.985E-02	6.329E-05	1.010E-14
0Cs-137	Cs-137	1.000E+00	1.000E+00	9.767E-01	9.539E-01	9.317E-01	7.898E-01	4.927E-01	9.444E-02	8.422E-04	5.642E-11
0H-3	H-3	1.000E+00	1.000E+00	6.576E-04	4.324E-07	2.843E-10	1.511E-32	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0Th-230	Th-230	1.000E+00	1.000E+00	9.998E-01	9.997E-01	9.995E-01	9.983E-01	9.949E-01	9.831E-01	9.501E-01	8.431E-01
0Ra-226	Th-230	1.000E+00	0.000E+00	4.302E-04	8.545E-04	1.273E-03	4.043E-03	1.062E-02	2.327E-02	2.973E-02	2.683E-02
0Pb-210	Th-230	1.000E+00	0.000E+00	6.612E-06	2.598E-05	5.741E-05	5.636E-04	3.627E-03	1.502E-02	2.275E-02	2.071E-02

THF(i) is the thread fraction of the parent nuclide.
0RESCALC.EXE execution time = 0.51 seconds

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Part III: Intake Quantities and Health Risk Factors

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Time= 2.000E+00 10
Time= 3.000E+00 13
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Cancer Risk Slope Factors Summary Table
Risk Library: FGR 13 Morbidity

0

Menu	Parameter	Current Value	Base Case*	Parameter Name
Sf-1	Ground external radiation slope factors, 1/yr per (pCi/g):			
Sf-1	Ac-227+D	1.47E-06	3.48E-10	SLPF(1,1)
Sf-1	Cs-137+D	2.55E-06	5.32E-10	SLPF(2,1)
Sf-1	H-3	0.00E+00	0.00E+00	SLPF(3,1)
Sf-1	Pb-210+D	4.21E-09	1.41E-09	SLPF(4,1)
Sf-1	Ra-226+D	8.49E-06	2.29E-08	SLPF(5,1)
Sf-1	Th-230	8.19E-10	8.19E-10	SLPF(6,1)
Sf-2	Inhalation, slope factors, 1/(pCi):			
Sf-2	Ac-227+D	2.13E-07	1.49E-07	SLPF(1,2)
Sf-2	Cs-137+D	1.12E-10	1.12E-10	SLPF(2,2)
Sf-2	H-3	8.51E-13	8.51E-13	SLPF(3,2)
Sf-2	Pb-210+D	3.08E-08	1.58E-08	SLPF(4,2)
Sf-2	Ra-226+D	2.83E-08	2.82E-08	SLPF(5,2)
Sf-2	Th-230	3.40E-08	3.40E-08	SLPF(6,2)
Sf-3	Food ingestion, slope factors, 1/(pCi):			
Sf-3	Ac-227+D	6.53E-10	2.45E-10	SLPF(1,3)
Sf-3	Cs-137+D	3.74E-11	3.74E-11	SLPF(2,3)
Sf-3	H-3	1.44E-13	1.44E-13	SLPF(3,3)
Sf-3	Pb-210+D	3.44E-09	1.18E-09	SLPF(4,3)
Sf-3	Ra-226+D	5.15E-10	5.14E-10	SLPF(5,3)
Sf-3	Th-230	1.19E-10	1.19E-10	SLPF(6,3)
Sf-3	Water ingestion, slope factors, 1/(pCi):			
Sf-3	Ac-227+D	4.86E-10	2.01E-10	SLPF(1,4)
Sf-3	Cs-137+D	3.04E-11	3.04E-11	SLPF(2,4)
Sf-3	H-3	1.12E-13	1.12E-13	SLPF(3,4)
Sf-3	Pb-210+D	2.66E-09	8.81E-10	SLPF(4,4)
Sf-3	Ra-226+D	3.86E-10	3.85E-10	SLPF(5,4)
Sf-3	Th-230	9.10E-11	9.10E-11	SLPF(6,4)
Sf-3	Soil ingestion, slope factors, 1/(pCi):			
Sf-3	Ac-227+D	6.53E-10	2.45E-10	SLPF(1,5)
Sf-3	Cs-137+D	3.74E-11	3.74E-11	SLPF(2,5)
Sf-3	H-3	1.44E-13	1.44E-13	SLPF(3,5)
Sf-3	Pb-210+D	3.44E-09	1.18E-09	SLPF(4,5)
Sf-3	Ra-226+D	5.15E-10	5.14E-10	SLPF(5,5)
Sf-3	Th-230	1.19E-10	1.19E-10	SLPF(6,5)
Sf-Rn	Radon Inhalation slope factors, 1/(pCi):			

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Sf-Rn  Rn-222                                                    1.80E-12   1.80E-12   SLPFRN(1,1)
Sf-Rn  Po-218                                                    3.70E-12   3.70E-12   SLPFRN(1,2)
Sf-Rn  Pb-214                                                    6.20E-12   6.20E-12   SLPFRN(1,3)
Sf-Rn  Bi-214                                                    1.50E-11   1.50E-11   SLPFRN(1,4)

Sf-Rn  Radon K factors, (mrem/WLM):
Sf-Rn  Rn-222 Indoor                                             7.60E+02   7.60E+02   KFACTR(1,1)
Sf-Rn  Rn-222 Outdoor                                            5.70E+02   5.70E+02   KFACTR(1,2)
-------------------------------------------------------------------------------------------------------
*Base Case means Default.Lib w/o Associate Nuclide contributions.
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Risk Slope and Environmental Transport Factors for the Ground Pathway

0Nuclide (i)	Slope(i)*	ETFG(i,t) At Time in Years (dimensionless)								
	t=	0.000E+00	1.000E+00	2.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ac-227	3.480E-10	2.087E-01	2.087E-01	2.086E-01	2.086E-01	2.085E-01	2.083E-01	2.074E-01	2.045E-01	1.863E-01
At-218	3.570E-09	2.126E-01	2.126E-01	2.126E-01	2.126E-01	2.127E-01	2.128E-01	2.130E-01	2.138E-01	2.148E-01
Ba-137m	2.690E-06	1.844E-01	1.844E-01	1.843E-01	1.843E-01	1.841E-01	1.836E-01	1.818E-01	1.759E-01	1.480E-01
Bi-210	2.760E-09	2.030E-01	2.030E-01	2.030E-01	2.030E-01	2.028E-01	2.025E-01	2.013E-01	1.973E-01	1.755E-01
Bi-211	1.880E-07	1.944E-01	1.944E-01	1.944E-01	1.943E-01	1.942E-01	1.938E-01	1.922E-01	1.871E-01	1.612E-01
Bi-214	7.480E-06	1.695E-01	1.695E-01	1.694E-01	1.694E-01	1.692E-01	1.686E-01	1.665E-01	1.600E-01	1.312E-01
Cs-137	5.320E-10	2.089E-01	2.089E-01	2.089E-01	2.089E-01	2.088E-01	2.086E-01	2.077E-01	2.047E-01	1.867E-01
Fr-223	1.400E-07	2.019E-01	2.019E-01	2.019E-01	2.018E-01	2.017E-01	2.014E-01	2.003E-01	1.967E-01	1.762E-01
H-3	0.000E+00	2.280E-01	2.280E-01	2.280E-01	2.280E-01	2.280E-01	2.280E-01	2.280E-01	2.280E-01	2.280E-01
Pb-210	1.410E-09	2.147E-01	2.147E-01	2.147E-01	2.147E-01	2.147E-01	2.147E-01	2.149E-01	2.153E-01	2.164E-01
Pb-211	2.290E-07	1.851E-01	1.851E-01	1.851E-01	1.850E-01	1.849E-01	1.843E-01	1.825E-01	1.767E-01	1.490E-01
Pb-214	9.820E-07	1.939E-01	1.939E-01	1.939E-01	1.938E-01	1.937E-01	1.933E-01	1.917E-01	1.866E-01	1.608E-01
Po-210	3.950E-11	1.809E-01	1.809E-01	1.809E-01	1.808E-01	1.807E-01	1.801E-01	1.782E-01	1.721E-01	1.438E-01
Po-211	3.580E-08	1.813E-01	1.813E-01	1.813E-01	1.813E-01	1.811E-01	1.805E-01	1.786E-01	1.726E-01	1.445E-01
Po-214	3.860E-10	1.802E-01	1.802E-01	1.801E-01	1.801E-01	1.799E-01	1.794E-01	1.775E-01	1.714E-01	1.434E-01
Po-215	7.480E-10	1.883E-01	1.882E-01	1.882E-01	1.882E-01	1.880E-01	1.875E-01	1.858E-01	1.802E-01	1.533E-01
Po-218	4.260E-11	1.799E-01	1.799E-01	1.798E-01	1.798E-01	1.796E-01	1.791E-01	1.771E-01	1.711E-01	1.429E-01
Ra-223	4.340E-07	2.012E-01	2.012E-01	2.012E-01	2.012E-01	2.010E-01	2.007E-01	1.994E-01	1.953E-01	1.729E-01
Ra-226	2.290E-08	2.028E-01	2.028E-01	2.028E-01	2.028E-01	2.027E-01	2.023E-01	2.011E-01	1.970E-01	1.744E-01
Rn-219	2.250E-07	1.941E-01	1.941E-01	1.941E-01	1.941E-01	1.939E-01	1.935E-01	1.919E-01	1.868E-01	1.609E-01
Rn-222	1.740E-09	1.868E-01	1.868E-01	1.868E-01	1.868E-01	1.866E-01	1.861E-01	1.843E-01	1.786E-01	1.511E-01
Th-227	3.780E-07	1.982E-01	1.982E-01	1.982E-01	1.982E-01	1.980E-01	1.976E-01	1.962E-01	1.916E-01	1.674E-01
Th-230	8.190E-10	2.105E-01	2.104E-01	2.104E-01	2.104E-01	2.104E-01	2.103E-01	2.098E-01	2.082E-01	1.955E-01
Tl-207	1.520E-08	1.865E-01	1.865E-01	1.865E-01	1.864E-01	1.863E-01	1.858E-01	1.840E-01	1.784E-01	1.512E-01
Tl-210	0.000E+00	2.280E-01	2.280E-01	2.280E-01	2.280E-01	2.280E-01	2.280E-01	2.280E-01	2.280E-01	2.280E-01

* - Units are 1/yr per (pCi/g) at infinite depth and area. Multiplication by ETFG(i,t) converts to site conditions.

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 0.000E+00 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Ac-227	1.890E-01	0.000E+00	0.000E+00	0.000E+00	3.995E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.995E+01
Cs-137	1.890E-01	0.000E+00	0.000E+00	0.000E+00	3.995E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.995E+01
H-3	3.469E+02	0.000E+00	0.000E+00	0.000E+00	3.995E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.995E+01
Pb-210	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ra-226	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	1.890E-01	0.000E+00	0.000E+00	0.000E+00	3.995E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.995E+01

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

0

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 0.000E+00 years

0

Radon Pathway	Radionuclides							
	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

0

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 0.000E+00 years

0

0

Radio-Nuclide	Ground		Water Independent Pathways (Inhalation excludes radon) Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	2.873E-07	0.3436	4.024E-08	0.0481	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.608E-08	0.0312
Cs-137	4.693E-07	0.5613	2.117E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.494E-09	0.0018
H-3	0.000E+00	0.0000	2.952E-10	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.752E-12	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	1.724E-10	0.0002	6.427E-09	0.0077	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.754E-09	0.0057
Total	7.568E-07	0.9051	4.698E-08	0.0562	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.234E-08	0.0387

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 0.000E+00 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All Pathways** risk	All Pathways** fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.536E-07	0.4229
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.708E-07	0.5631
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.009E-10	0.0004
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.135E-08	0.0136
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.361E-07	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

0

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 0.000E+00 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 0.000E+00 years

0 Water Independent Pathways (Inhalation excludes radon)

0

Radio-Nuclide	Ground risk	Ground fract.	Inhalation risk	Inhalation fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	Soil risk	Soil fract.
Ac-227	2.873E-07	0.3436	4.024E-08	0.0481	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.608E-08	0.0312
Cs-137	4.693E-07	0.5613	2.117E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.494E-09	0.0018
H-3	0.000E+00	0.0000	2.952E-10	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.752E-12	0.0000
Th-230	1.724E-10	0.0002	6.427E-09	0.0077	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.754E-09	0.0057
Total	7.568E-07	0.9051	4.698E-08	0.0562	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.234E-08	0.0387

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 0.000E+00 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All pathways risk	All pathways fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.536E-07	0.4229
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.708E-07	0.5631
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.009E-10	0.0004
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.135E-08	0.0136
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.361E-07	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 1.000E+00 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Ac-227	1.830E-01	0.000E+00	0.000E+00	0.000E+00	3.866E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.866E+01
Cs-137	1.846E-01	0.000E+00	0.000E+00	0.000E+00	3.900E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.900E+01
H-3	2.280E-01	0.000E+00	0.000E+00	0.000E+00	2.626E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.626E-02
Pb-210	1.249E-06	0.000E+00	0.000E+00	0.000E+00	2.640E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.640E-04
Ra-226	8.129E-05	0.000E+00	0.000E+00	0.000E+00	1.718E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.718E-02
Th-230	1.889E-01	0.000E+00	0.000E+00	0.000E+00	3.992E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.992E+01

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

0

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 1.000E+00 years

0

Radon Pathway	Radionuclides							
	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

0

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+00 years

0

0

Radio-Nuclide	Ground		Water Independent Pathways (Inhalation excludes radon) Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	2.781E-07	0.3417	3.895E-08	0.0478	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.525E-08	0.0310
Cs-137	4.583E-07	0.5630	2.067E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.459E-09	0.0018
H-3	0.000E+00	0.0000	1.940E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.781E-15	0.0000
Pb-210	5.753E-15	0.0000	3.843E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.090E-13	0.0000
Ra-226	6.294E-10	0.0008	2.298E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.842E-12	0.0000
Th-230	1.723E-10	0.0002	6.424E-09	0.0079	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.751E-09	0.0058
Total	7.373E-07	0.9056	4.539E-08	0.0558	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.146E-08	0.0386

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+00 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All Pathways** risk	All Pathways** fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.423E-07	0.4205
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.598E-07	0.5648
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.978E-13	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.532E-13	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.405E-10	0.0008
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.135E-08	0.0139
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.141E-07	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

0

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 1.000E+00 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+00 years

0 Water Independent Pathways (Inhalation excludes radon)

0

Radio-Nuclide	Ground risk	Ground fract.	Inhalation risk	Inhalation fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	Soil risk	Soil fract.
Ac-227	2.781E-07	0.3417	3.895E-08	0.0478	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.525E-08	0.0310
Cs-137	4.583E-07	0.5630	2.067E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.459E-09	0.0018
H-3	0.000E+00	0.0000	1.940E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.781E-15	0.0000
Th-230	8.017E-10	0.0010	6.426E-09	0.0079	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.761E-09	0.0058
Total	7.373E-07	0.9056	4.539E-08	0.0558	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.146E-08	0.0386

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+00 years

Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.423E-07	0.4205
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.598E-07	0.5648
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.978E-13	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.199E-08	0.0147
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.141E-07	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 2.000E+00 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Ac-227	1.771E-01	0.000E+00	0.000E+00	0.000E+00	3.742E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.742E+01
Cs-137	1.802E-01	0.000E+00	0.000E+00	0.000E+00	3.807E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.807E+01
H-3	1.499E-04	0.000E+00	0.000E+00	0.000E+00	1.726E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.726E-05
Pb-210	4.907E-06	0.000E+00	0.000E+00	0.000E+00	1.037E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.037E-03
Ra-226	1.614E-04	0.000E+00	0.000E+00	0.000E+00	3.410E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.410E-02
Th-230	1.888E-01	0.000E+00	0.000E+00	0.000E+00	3.990E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.990E+01

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

0

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 2.000E+00 years

0

Radon Pathway	Radionuclides							
	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

0

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 2.000E+00 years

0

0

Radio-Nuclide	Ground		Water Independent Pathways (Inhalation excludes radon) Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	2.693E-07	0.3396	3.770E-08	0.0475	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.444E-08	0.0308
Cs-137	4.476E-07	0.5644	2.018E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.424E-09	0.0018
H-3	0.000E+00	0.0000	1.275E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.485E-18	0.0000
Pb-210	2.260E-14	0.0000	1.509E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.570E-12	0.0000
Ra-226	1.250E-09	0.0016	4.563E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.756E-11	0.0000
Th-230	1.723E-10	0.0002	6.420E-09	0.0081	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.748E-09	0.0060
Total	7.183E-07	0.9057	4.414E-08	0.0557	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.063E-08	0.0386

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 2.000E+00 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All Pathways** risk	All Pathways** fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.314E-07	0.4179
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.490E-07	0.5662
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.300E-16	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.743E-12	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.272E-09	0.0016
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.134E-08	0.0143
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.931E-07	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

0

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 2.000E+00 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 2.000E+00 years

0 Water Independent Pathways (Inhalation excludes radon)

0

Radio-Nuclide	Ground risk	Ground fract.	Inhalation risk	Inhalation fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	Soil risk	Soil fract.
Ac-227	2.693E-07	0.3396	3.770E-08	0.0475	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.444E-08	0.0308
Cs-137	4.476E-07	0.5644	2.018E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.424E-09	0.0018
H-3	0.000E+00	0.0000	1.275E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.485E-18	0.0000
Th-230	1.422E-09	0.0018	6.425E-09	0.0081	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.769E-09	0.0060
Total	7.183E-07	0.9057	4.414E-08	0.0557	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.063E-08	0.0386

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 2.000E+00 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All pathways risk	All pathways fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.314E-07	0.4179
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.490E-07	0.5662
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.300E-16	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.262E-08	0.0159
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.931E-07	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 3.000E+00 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Ac-227	1.714E-01	0.000E+00	0.000E+00	0.000E+00	3.622E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.622E+01
Cs-137	1.759E-01	0.000E+00	0.000E+00	0.000E+00	3.717E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.717E+01
H-3	9.850E-08	0.000E+00	0.000E+00	0.000E+00	1.134E-08	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.134E-08
Pb-210	1.084E-05	0.000E+00	0.000E+00	0.000E+00	2.290E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.290E-03
Ra-226	2.403E-04	0.000E+00	0.000E+00	0.000E+00	5.078E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.078E-02
Th-230	1.887E-01	0.000E+00	0.000E+00	0.000E+00	3.988E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.988E+01

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

0

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 3.000E+00 years

0

Radon Pathway	Radionuclides							
	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

0

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+00 years

0

0

Radio-Nuclide	Ground		Water Independent Pathways (Inhalation excludes radon) Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	2.607E-07	0.3375	3.649E-08	0.0472	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.365E-08	0.0306
Cs-137	4.371E-07	0.5657	1.970E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.390E-09	0.0018
H-3	0.000E+00	0.0000	8.383E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.634E-21	0.0000
Pb-210	4.994E-14	0.0000	3.333E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.886E-12	0.0000
Ra-226	1.861E-09	0.0024	6.794E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.614E-11	0.0000
Th-230	1.723E-10	0.0002	6.416E-09	0.0083	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.745E-09	0.0061
Total	6.998E-07	0.9058	4.293E-08	0.0556	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.982E-08	0.0386

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+00 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All Pathways** risk	All Pathways** fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.209E-07	0.4153
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.385E-07	0.5675
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.546E-20	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.269E-12	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.894E-09	0.0025
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.133E-08	0.0147
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.726E-07	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

0

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 3.000E+00 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+00 years

0 Water Independent Pathways (Inhalation excludes radon)

0

Radio-Nuclide	Ground risk	Ground fract.	Inhalation risk	Inhalation fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	Soil risk	Soil fract.
Ac-227	2.607E-07	0.3375	3.649E-08	0.0472	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.365E-08	0.0306
Cs-137	4.371E-07	0.5657	1.970E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.390E-09	0.0018
H-3	0.000E+00	0.0000	8.383E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.634E-21	0.0000
Th-230	2.034E-09	0.0026	6.423E-09	0.0083	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.779E-09	0.0062
Total	6.998E-07	0.9058	4.293E-08	0.0556	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.982E-08	0.0386

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+00 years

Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.209E-07	0.4153
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.385E-07	0.5675
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.546E-20	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.324E-08	0.0171
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.726E-07	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 1.000E+01 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Ac-227	1.364E-01	0.000E+00	0.000E+00	0.000E+00	2.883E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.883E+01
Cs-137	1.487E-01	0.000E+00	0.000E+00	0.000E+00	3.142E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.142E+01
H-3	5.222E-30	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	1.061E-04	0.000E+00	0.000E+00	0.000E+00	2.242E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.242E-02
Ra-226	7.613E-04	0.000E+00	0.000E+00	0.000E+00	1.609E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.609E-01
Th-230	1.880E-01	0.000E+00	0.000E+00	0.000E+00	3.972E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.972E+01

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

0

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 1.000E+01 years

0

Radon Pathway	Radionuclides							
	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

0

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+01 years

0

0

Radio-Nuclide	Ground		Water Independent Pathways (Inhalation excludes radon) Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	2.079E-07	0.3226	2.904E-08	0.0451	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.882E-08	0.0292
Cs-137	3.702E-07	0.5743	1.665E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.175E-09	0.0018
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	4.902E-13	0.0000	3.264E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.720E-11	0.0001
Ra-226	5.906E-09	0.0092	2.152E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.281E-11	0.0001
Th-230	1.720E-10	0.0003	6.391E-09	0.0099	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.726E-09	0.0073
Total	5.842E-07	0.9064	3.547E-08	0.0550	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.488E-08	0.0386

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+01 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All Pathways** risk	All Pathways** fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.558E-07	0.3969
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.714E-07	0.5762
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.096E-11	0.0001
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.011E-09	0.0093
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.129E-08	0.0175
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.445E-07	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

0

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 1.000E+01 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+01 years

0 Water Independent Pathways (Inhalation excludes radon)

0

Radio-Nuclide	Ground risk	Ground fract.	Inhalation risk	Inhalation fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	Soil risk	Soil fract.
Ac-227	2.079E-07	0.3226	2.904E-08	0.0451	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.882E-08	0.0292
Cs-137	3.702E-07	0.5743	1.665E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.175E-09	0.0018
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	6.079E-09	0.0094	6.415E-09	0.0100	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.886E-09	0.0076
Total	5.842E-07	0.9064	3.547E-08	0.0550	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.488E-08	0.0386

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+01 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All pathways risk	All pathways fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.558E-07	0.3969
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.714E-07	0.5762
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.738E-08	0.0270
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.445E-07	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 3.000E+01 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Ac-227	7.103E-02	0.000E+00	0.000E+00	0.000E+00	1.501E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.501E+01
Cs-137	9.201E-02	0.000E+00	0.000E+00	0.000E+00	1.944E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.944E+01
H-3	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	6.773E-04	0.000E+00	0.000E+00	0.000E+00	1.431E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.431E-01
Ra-226	1.983E-03	0.000E+00	0.000E+00	0.000E+00	4.189E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.189E-01
Th-230	1.858E-01	0.000E+00	0.000E+00	0.000E+00	3.926E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.926E+01

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

0

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 3.000E+01 years

0

Radon Pathway	Radionuclides							
	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

0

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+01 years

0

0

Radio-Nuclide	Ground		Water Independent Pathways (Inhalation excludes radon) Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	1.089E-07	0.2777	1.512E-08	0.0385	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.801E-09	0.0250
Cs-137	2.302E-07	0.5870	1.031E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.272E-10	0.0019
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	3.151E-12	0.0000	2.083E-11	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.928E-10	0.0013
Ra-226	1.545E-08	0.0394	5.605E-11	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.157E-10	0.0005
Th-230	1.713E-10	0.0004	6.318E-09	0.0161	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.673E-09	0.0119
Total	3.548E-07	0.9046	2.152E-08	0.0549	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.591E-08	0.0406

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+01 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All Pathways** risk	All Pathways** fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.338E-07	0.3412
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.310E-07	0.5889
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.168E-10	0.0013
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.573E-08	0.0401
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.116E-08	0.0285
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.922E-07	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

0

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 3.000E+01 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+01 years

0 Water Independent Pathways (Inhalation excludes radon)

0

Radio-Nuclide	Ground risk	Ground fract.	Inhalation risk	Inhalation fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	Soil risk	Soil fract.
Ac-227	1.089E-07	0.2777	1.512E-08	0.0385	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.801E-09	0.0250
Cs-137	2.302E-07	0.5870	1.031E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.272E-10	0.0019
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	1.563E-08	0.0398	6.395E-09	0.0163	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.381E-09	0.0137
Total	3.548E-07	0.9046	2.152E-08	0.0549	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.591E-08	0.0406

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+01 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All pathways risk	All pathways fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.338E-07	0.3412
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.310E-07	0.5889
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.740E-08	0.0699
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.922E-07	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 1.000E+02 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Ac-227	7.232E-03	0.000E+00	0.000E+00	0.000E+00	1.528E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.528E+00
Cs-137	1.714E-02	0.000E+00	0.000E+00	0.000E+00	3.621E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.621E+00
H-3	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	2.725E-03	0.000E+00	0.000E+00	0.000E+00	5.759E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.759E-01
Ra-226	4.222E-03	0.000E+00	0.000E+00	0.000E+00	8.922E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.922E-01
Th-230	1.784E-01	0.000E+00	0.000E+00	0.000E+00	3.770E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.770E+01

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

0

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 1.000E+02 years

0

Radon Pathway	Radionuclides							
	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

0

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+02 years

0

0

Radio-Nuclide	Ground		Water Independent Pathways (Inhalation excludes radon) Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	1.133E-08	0.1083	1.539E-09	0.0147	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.979E-10	0.0095
Cs-137	4.369E-08	0.4179	1.919E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.354E-10	0.0013
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	1.300E-11	0.0001	8.382E-11	0.0008	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.983E-09	0.0190
Ra-226	3.347E-08	0.3201	1.194E-10	0.0011	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.593E-10	0.0044
Th-230	1.689E-10	0.0016	6.066E-09	0.0580	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.486E-09	0.0429
Total	8.866E-08	0.8482	7.810E-09	0.0747	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.062E-09	0.0771

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+02 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All Pathways** risk	All Pathways** fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.386E-08	0.1326
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.383E-08	0.4192
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.080E-09	0.0199
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.405E-08	0.3257
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.072E-08	0.1026
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.045E-07	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

0

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 1.000E+02 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+02 years

0 Water Independent Pathways (Inhalation excludes radon)

0

Radio-Nuclide	Ground risk	Ground fract.	Inhalation risk	Inhalation fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	Soil risk	Soil fract.
Ac-227	1.133E-08	0.1083	1.539E-09	0.0147	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.979E-10	0.0095
Cs-137	4.369E-08	0.4179	1.919E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.354E-10	0.0013
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	3.365E-08	0.3219	6.269E-09	0.0600	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.928E-09	0.0663
Total	8.866E-08	0.8482	7.810E-09	0.0747	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.062E-09	0.0771

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+02 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All pathways risk	All pathways fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.386E-08	0.1326
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.383E-08	0.4192
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.685E-08	0.4481
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.045E-07	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 3.000E+02 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Ac-227	1.053E-05	0.000E+00	0.000E+00	0.000E+00	2.225E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.225E-03
Cs-137	1.401E-04	0.000E+00	0.000E+00	0.000E+00	2.961E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.961E-02
H-3	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	3.784E-03	0.000E+00	0.000E+00	0.000E+00	7.995E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.995E-01
Ra-226	4.945E-03	0.000E+00	0.000E+00	0.000E+00	1.045E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.045E+00
Th-230	1.581E-01	0.000E+00	0.000E+00	0.000E+00	3.340E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.340E+01

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

0

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 3.000E+02 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

0

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+02 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	1.754E-11	0.0003	2.241E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.453E-12	0.0000
Cs-137	3.771E-10	0.0069	1.569E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.107E-12	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	1.944E-11	0.0004	1.164E-10	0.0021	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.753E-09	0.0504
Ra-226	4.117E-08	0.7534	1.398E-10	0.0026	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.379E-10	0.0098
Th-230	1.620E-10	0.0030	5.374E-09	0.0983	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.974E-09	0.0727
Total	4.174E-08	0.7639	5.632E-09	0.1031	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.268E-09	0.1330

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+02 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All Pathways** risk	All Pathways** fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.124E-11	0.0004
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.782E-10	0.0069
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.889E-09	0.0529
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.184E-08	0.7658
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.510E-09	0.1740
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.464E-08	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

0

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 3.000E+02 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+02 years

0 Water Independent Pathways (Inhalation excludes radon)

0

Radio-Nuclide	Ground risk	Ground fract.	Inhalation risk	Inhalation fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	Soil risk	Soil fract.
Ac-227	1.754E-11	0.0003	2.241E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.453E-12	0.0000
Cs-137	3.771E-10	0.0069	1.569E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.107E-12	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	4.135E-08	0.7567	5.630E-09	0.1030	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.265E-09	0.1330
Total	4.174E-08	0.7639	5.632E-09	0.1031	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.268E-09	0.1330

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+02 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All pathways risk	All pathways fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.124E-11	0.0004
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.782E-10	0.0069
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.424E-08	0.9927
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.464E-08	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 1.000E+03 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Ac-227	1.146E-15	0.000E+00	0.000E+00	0.000E+00	2.422E-13	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.422E-13
Cs-137	6.399E-12	0.000E+00	0.000E+00	0.000E+00	1.352E-09	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.352E-09
H-3	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	2.349E-03	0.000E+00	0.000E+00	0.000E+00	4.964E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.964E-01
Ra-226	3.043E-03	0.000E+00	0.000E+00	0.000E+00	6.431E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.431E-01
Th-230	9.563E-02	0.000E+00	0.000E+00	0.000E+00	2.021E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.021E+01

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

0

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 1.000E+03 years

0

Radon Pathway	Radionuclides							
	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

0

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+03 years

0

0

Radio-Nuclide	Ground		Water Independent Pathways (Inhalation excludes radon) Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	2.434E-21	0.0000	2.440E-22	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.581E-22	0.0000
Cs-137	2.126E-17	0.0000	7.167E-22	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.057E-20	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	1.647E-11	0.0004	7.225E-11	0.0019	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.709E-09	0.0442
Ra-226	3.069E-08	0.7931	8.603E-11	0.0022	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.310E-10	0.0086
Th-230	1.350E-10	0.0035	3.251E-09	0.0840	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.405E-09	0.0622
Total	3.084E-08	0.7970	3.410E-09	0.0881	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.445E-09	0.1149

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+03 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All Pathways** risk	All Pathways** fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.836E-21	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.131E-17	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.798E-09	0.0465
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.110E-08	0.8039
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.791E-09	0.1497
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.869E-08	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

0

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 1.000E+03 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+03 years

0 Water Independent Pathways (Inhalation excludes radon)

0

Radio-Nuclide	Ground risk	Ground fract.	Inhalation risk	Inhalation fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	Soil risk	Soil fract.
Ac-227	2.434E-21	0.0000	2.440E-22	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.581E-22	0.0000
Cs-137	2.126E-17	0.0000	7.167E-22	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.057E-20	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	3.084E-08	0.7970	3.410E-09	0.0881	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.445E-09	0.1149
Total	3.084E-08	0.7970	3.410E-09	0.0881	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.445E-09	0.1149

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+03 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All pathways risk	All pathways fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.836E-21	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.131E-17	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.869E-08	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.869E-08	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

ATTACHMENT G-4

DOSE AND RISK CALCULATION AND

OUTPUT DOSE AND RISK ASSESSMENTS SUMMARY REPORTS

FOR DISPOSAL PIT C UNDER FUTURE CONSTRUCTION WORKER

Table G-4-1: Results of Residual Dose Assessment for Disposal Pit C under Future Construction Worker Scenario

Nuclide	EPC (pCi/g)	Dose to Source Ratio ((mrem/yr)/(pCi/g))							
		T = 2.4 Year				T=1000 Years			
		Ground	Inhalation	Soil	All Pathway	Ground	Inhalation	Soil	All Pathways
Cs-137	0.11	6.0E-01	6.5E-06	1.9E-03	6.0E-01	2.9E-11	2.3E-16	6.7E-14	2.9E-11
H-3	49.84	0	1.1E-13	6.6E-15	1.2E-13	0	0	0	0
Pb-210	0	1.2E-03	4.6E-03	2.6E-01	2.7E-01	6.8E-18	1.7E-17	9.9E-16	1.0E-15
Ra-226	0	2.0E+0	2.3E-03	7.8E-02	2.1E+00	9.2E-01	2.4E-03	1.2E-01	1.0E+00
Ra-228	0.35	1.7E+00	4.1E-02	5.8E-02	1.8E+00	0	0	0	0
Th-230	0.20	2.8E-03	7.1E-02	2.2E-02	9.6E-02	4.8E-01	3.7E-02	7.0E-02	5.9E-01
U-234	0.03	8.8E-05	2.9E-02	1.1E-02	4.0E-02	2.1E-03	1.1E-02	4.5E-03	1.7E-02

Nuclide	Dose (mrem/yr)							
	T = 0 Year				T=1000 Years			
	Ground	Inhalation	Soil	All Pathways	Ground	Inhalation	Soil	All Pathways
Cs-137	6.6E-02	7.1E-07	2.0E-04	6.6E-02	3.2E-12	2.6E-17	7.3E-15	3.2E-12
H-3	0.0E+00	5.7E-12	3.3E-13	6.0E-12	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Pb-210	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Ra-226	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Ra-228	5.8E-01	1.4E-02	2.0E-02	6.2E-01	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Th-230	5.5E-04	1.4E-02	4.4E-03	1.9E-02	9.6E-02	7.4E-03	1.4E-02	1.2E-01
U-234	2.6E-06	8.6E-04	3.4E-04	1.2E-03	6.3E-05	3.2E-04	1.3E-04	5.2E-04
		Cumulative Dose		**7.1E-01**		**Cumulative Dose**		**1.2E-01**

Table G-4-2: Results of Residual Risk Assessment for Disposal Pit C under Future Construction Worker Scenario

Nuclide	EPC (pCi/g)	Risk to Source Ratio (1/(pCi/g))							
		T = 0 Year				T=1000 Years			
		Ground	Inhalation	Soil	All Pathways	Ground	Inhalation	Soil	All Pathways
Cs-137	0.11	4.5E-07	2.3E-11	1.4E-09	4.6E-07	2.2E-17	8.3E-22	5.1E-20	2.2E-17
H-3	49.84	0.0E+00	1.3E-17	1.3E-19	1.4E-17	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Pb-210	0	8.3E-10	6.2E-09	1.3E-07	1.3E-07	4.7E-24	2.3E-23	4.8E-22	5.0E-22
Ra-226	0	1.5E-06	6.6E-09	3.0E-08	1.5E-06	7.0E-07	4.4E-09	5.4E-08	7.5E-07
Ra-228	0.35	1.3E-06	2.3E-08	5.1E-08	1.3E-06	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Th-230	0.2	1.7E-09	7.4E-09	4.8E-09	1.4E-08	3.6E-07	6.0E-09	3.0E-08	4.0E-07
U-234	0.03	5.5E-11	6.0E-09	3.8E-09	9.9E-09	1.6E-09	2.2E-09	1.5E-09	5.4E-09

Nuclide	Risk (unitless)							
	T = 0 Year				T=1000 Years			
	Ground	Inhalation	Soil	All Pathways	Ground	Inhalation	Soil	All Pathways
Cs-137	5.0E-08	2.5E-12	1.6E-10	5.0E-08	2.4E-18	9.1E-23	5.6E-21	2.4E-18
H-3	0.0E+00	6.7E-16	6.6E-18	6.8E-16	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Pb-210	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Ra-226	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Ra-228	4.4E-07	7.9E-09	1.8E-08	4.7E-07	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Th-230	3.5E-10	1.5E-09	9.5E-10	2.8E-09	7.3E-08	1.2E-09	5.9E-09	8.0E-08
U-234	1.6E-12	1.8E-10	1.1E-10	3.0E-10	4.8E-11	6.7E-11	4.6E-11	1.6E-10
		Cumulative Risk		**5E-07**		**Cumulative Risk**		**8E-08**

Summary : Residual Dose and Risk Assessment for Pit C Under Construction Worker Scenario
File : C:\USERS\MRAHMAN\DOCUMENTS\OLD RESRAD FILES\PIT C-CONSTRUCTION WORKER.RAD

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Dose Conversion Factor (and Related) Parameter Summary
Dose Library: FGR 12 & FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation (mrem/yr)/(pCi/g)			
A-1	Ac-228 (Source: FGR 12)	5.978E+00	5.978E+00	DCF1(1)
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1(2)
A-1	Ba-137m (Source: FGR 12)	3.606E+00	3.606E+00	DCF1(3)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1(4)
A-1	Bi-212 (Source: FGR 12)	1.171E+00	1.171E+00	DCF1(5)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1(6)
A-1	Cs-137 (Source: FGR 12)	7.510E-04	7.510E-04	DCF1(7)
A-1	H-3 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1(8)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1(9)
A-1	Pb-212 (Source: FGR 12)	7.043E-01	7.043E-01	DCF1(10)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1(11)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1(12)
A-1	Po-212 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1(13)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1(14)
A-1	Po-216 (Source: FGR 12)	1.042E-04	1.042E-04	DCF1(15)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1(16)
A-1	Ra-224 (Source: FGR 12)	5.119E-02	5.119E-02	DCF1(17)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1(18)
A-1	Ra-228 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1(19)
A-1	Rn-220 (Source: FGR 12)	2.298E-03	2.298E-03	DCF1(20)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1(21)
A-1	Th-228 (Source: FGR 12)	7.940E-03	7.940E-03	DCF1(22)
A-1	Th-230 (Source: FGR 12)	1.209E-03	1.209E-03	DCF1(23)
A-1	Tl-208 (Source: FGR 12)	2.298E+01	2.298E+01	DCF1(24)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1(25)
A-1	U-234 (Source: FGR 12)	4.017E-04	4.017E-04	DCF1(26)
B-1	Dose conversion factors for inhalation mrem/pCi:			
B-1	Cs-137+D	3.190E-05	3.190E-05	DCF2(1)
B-1	H-3	6.400E-08	6.400E-08	DCF2(2)
B-1	Pb-210+D	2.320E-02	1.360E-02	DCF2(3)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2(4)
B-1	Ra-228+D	5.078E-03	4.770E-03	DCF2(5)
B-1	Th-228+D	3.454E-01	3.420E-01	DCF2(6)
B-1	Th-230	3.260E-01	3.260E-01	DCF2(7)
B-1	U-234	1.320E-01	1.320E-01	DCF2(8)
D-1	Dose conversion factors for ingestion mrem/pCi:			
D-1	Cs-137+D	5.000E-05	5.000E-05	DCF3(1)
D-1	H-3	6.400E-08	6.400E-08	DCF3(2)

D-1	Pb-210+D	7.276E-03	5.370E-03	DCF3(3)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3(4)
D-1	Ra-228+D	1.442E-03	1.440E-03	DCF3(5)
D-1	Th-228+D	8.086E-04	3.960E-04	DCF3(6)
D-1	Th-230	5.480E-04	5.480E-04	DCF3(7)
D-1	U-234	2.830E-04	2.830E-04	DCF3(8)

Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: FGR 12 & FGR 11

Menu	Parameter		Current Value#	Base Case*	Parameter Name
D-34	Food transfer factors:				
D-34	Cs-137+D	plant/soil concentration ratio dimensionless	4.000E-02	4.000E-02	RTF(11)
D-34	Cs-137+D	beef/livestock-intake ratio (pCi/kg)/(pCi/d)	3.000E-02	3.000E-02	RTF(12)
D-34	Cs-137+D	milk/livestock-intake ratio (pCi/L)/(pCi/d)	8.000E-03	8.000E-03	RTF(13)
D-34					
D-34	H-3	plant/soil concentration ratio dimensionless	4.800E+00	4.800E+00	RTF(21)
D-34	H-3	beef/livestock-intake ratio (pCi/kg)/(pCi/d)	1.200E-02	1.200E-02	RTF(22)
D-34	H-3	milk/livestock-intake ratio (pCi/L)/(pCi/d)	1.000E-02	1.000E-02	RTF(23)
D-34					
D-34	Pb-210+D	plant/soil concentration ratio dimensionless	1.000E-02	1.000E-02	RTF(31)
D-34	Pb-210+D	beef/livestock-intake ratio (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(32)
D-34	Pb-210+D	milk/livestock-intake ratio (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(33)
D-34					
D-34	Ra-226+D	plant/soil concentration ratio dimensionless	4.000E-02	4.000E-02	RTF(41)
D-34	Ra-226+D	beef/livestock-intake ratio (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(42)
D-34	Ra-226+D	milk/livestock-intake ratio (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(43)
D-34					
D-34	Ra-228+D	plant/soil concentration ratio dimensionless	4.000E-02	4.000E-02	RTF(51)
D-34	Ra-228+D	beef/livestock-intake ratio (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(52)
D-34	Ra-228+D	milk/livestock-intake ratio (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(53)
D-34					
D-34	Th-228+D	plant/soil concentration ratio dimensionless	1.000E-03	1.000E-03	RTF(61)
D-34	Th-228+D	beef/livestock-intake ratio (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(62)
D-34	Th-228+D	milk/livestock-intake ratio (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(63)
D-34					
D-34	Th-230	plant/soil concentration ratio dimensionless	1.000E-03	1.000E-03	RTF(71)
D-34	Th-230	beef/livestock-intake ratio (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(72)
D-34	Th-230	milk/livestock-intake ratio (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(73)
D-34					
D-34	U-234	plant/soil concentration ratio dimensionless	2.500E-03	2.500E-03	RTF(81)
D-34	U-234	beef/livestock-intake ratio (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(82)
D-34	U-234	milk/livestock-intake ratio (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(83)
D-5	Bioaccumulation factors fresh water L/kg:				
D-5	Cs-137+D	fish	2.000E+03	2.000E+03	BIOFAC(11)
D-5	Cs-137+D	crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(12)
D-5					
D-5	H-3	fish	1.000E+00	1.000E+00	BIOFAC(21)
D-5	H-3	crustacea and mollusks	1.000E+00	1.000E+00	BIOFAC(22)
D-5					
D-5	Pb-210+D	fish	3.000E+02	3.000E+02	BIOFAC(31)

```
D-5   Pb-210+D   crustacea and mollusks                    1.000E+02  1.000E+02  BIOFAC(  32)
D-5
D-5   Ra-226+D   fish                                      5.000E+01  5.000E+01  BIOFAC(  41)
D-5   Ra-226+D   crustacea and mollusks                    2.500E+02  2.500E+02  BIOFAC(  42)
D-5
D-5   Ra-228+D   fish                                      5.000E+01  5.000E+01  BIOFAC(  51)
D-5   Ra-228+D   crustacea and mollusks                    2.500E+02  2.500E+02  BIOFAC(  52)
D-5
```

Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: FGR 12 & FGR 11

Menu		Parameter	Current Value#	Base Case*	Parameter Name
D-5	Th-228+D	fish	1.000E+02	1.000E+02	BIOFAC(61)
D-5	Th-228+D	crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(62)
D-5					
D-5	Th-230	fish	1.000E+02	1.000E+02	BIOFAC(71)
D-5	Th-230	crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(72)
D-5					
D-5	U-234	fish	1.000E+01	1.000E+01	BIOFAC(81)
D-5	U-234	crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(82)

#For DCF1(xxx) only factors are for infinite depth & area. See ETFG table in Ground Pathway of Detailed Report.
*Base Case means Default.Lib w/o Associate Nuclide contributions.

Site-Specific Parameter Summary

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	8.404E+03	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E-01	2.000E+00	---	THICK0
R011	Fraction of contamination that is submerged	0.000E+00	0.000E+00	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	not used	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	2.500E+01	3.000E+01	---	BRDL
R011	Time since placement of material (yr)	0.000E+00	0.000E+00	---	TI
R011	Times for calculations (yr)	1.000E+00	1.000E+00	---	T(2)
R011	Times for calculations (yr)	2.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	2.400E+00	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+00	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+01	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+01	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+02	1.000E+03	---	T(8)
R011	Times for calculations (yr)	3.000E+02	0.000E+00	---	T(9)
R011	Times for calculations (yr)	1.000E+03	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): Cs-137	1.000E+00	0.000E+00	---	S1(1)
R012	Initial principal radionuclide (pCi/g): H-3	1.000E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Pb-210	1.000E+00	0.000E+00	---	S1(3)
R012	Initial principal radionuclide (pCi/g): Ra-226	1.000E+00	0.000E+00	---	S1(4)
R012	Initial principal radionuclide (pCi/g): Ra-228	1.000E+00	0.000E+00	---	S1(5)
R012	Initial principal radionuclide (pCi/g): Th-230	1.000E+00	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): U-234	1.000E+00	0.000E+00	---	S1(8)
R012	Concentration in groundwater (pCi/L): Cs-137	not used	0.000E+00	---	W1(1)
R012	Concentration in groundwater (pCi/L): H-3	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Pb-210	not used	0.000E+00	---	W1(3)
R012	Concentration in groundwater (pCi/L): Ra-226	not used	0.000E+00	---	W1(4)
R012	Concentration in groundwater (pCi/L): Ra-228	not used	0.000E+00	---	W1(5)
R012	Concentration in groundwater (pCi/L): Th-230	not used	0.000E+00	---	W1(7)
R012	Concentration in groundwater (pCi/L): U-234	not used	0.000E+00	---	W1(8)
R013	Cover depth (m)	0.000E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)	not used	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	1.280E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	6.000E-05	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	3.700E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	6.000E-02	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	2.900E+01	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	7.750E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	3.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	6.600E+00	8.000E+00	---	HUMID

R013	Evapotranspiration coefficient	7.000E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	7.500E-01	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	0.000E+00	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	not used	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	not used	1.000E-03	---	EPS

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R014	Density of saturated zone (g/cm**3)	not used	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	not used	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	not used	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	not used	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	not used	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	not used	2.000E-02	---	HGWT
R014	Saturated zone b parameter	not used	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	not used	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	not used	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	not used	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	not used	2.500E+02	---	UW
R015	Number of unsaturated zone strata	not used	1	---	NS
R015	Unsat. zone 1 thickness (m)	not used	4.000E+00	---	H(1)
R015	Unsat. zone 1 soil density (g/cm**3)	not used	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1 total porosity	not used	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1 effective porosity	not used	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1 field capacity	not used	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1 soil-specific b parameter	not used	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1 hydraulic conductivity (m/yr)	not used	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Cs-137				
R016	Contaminated zone (cm**3/g)	1.900E+03	4.600E+03	---	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	not used	4.600E+03	---	DCNUCU(11)
R016	Saturated zone (cm**3/g)	not used	4.600E+03	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.934E-04	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for H-3				
R016	Contaminated zone (cm**3/g)	6.000E-02	0.000E+00	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	not used	0.000E+00	---	DCNUCU(21)
R016	Saturated zone (cm**3/g)	not used	0.000E+00	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.353E+00	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for Pb-210				
R016	Contaminated zone (cm**3/g)	5.500E+02	1.000E+02	---	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	not used	1.000E+02	---	DCNUCU(31)
R016	Saturated zone (cm**3/g)	not used	1.000E+02	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.704E-03	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)

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R016  Distribution coefficients for Ra-226
R016    Contaminated zone (cm**3/g)          9.100E+03  7.000E+01          ---          DCNUCC( 4)
R016    Unsaturated zone 1 (cm**3/g)         not used   7.000E+01          ---          DCNUCU( 41)
R016    Saturated zone (cm**3/g)             not used   7.000E+01          ---          DCNUCS( 4)
R016    Leach rate (/yr)                     0.000E+00  0.000E+00       1.030E-04       ALEACH( 4)
R016    Solubility constant                  0.000E+00  0.000E+00       not used        SOLUBK( 4)
```

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Ra-228				
R016	Contaminated zone (cm**3/g)	9.100E+03	7.000E+01	---	DCNUCC(5)
R016	Unsaturated zone 1 (cm**3/g)	not used	7.000E+01	---	DCNUCU(51)
R016	Saturated zone (cm**3/g)	not used	7.000E+01	---	DCNUCS(5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.030E-04	ALEACH(5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(5)
R016	Distribution coefficients for Th-230				
R016	Contaminated zone (cm**3/g)	5.800E+03	6.000E+04	---	DCNUCC(7)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU(71)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS(7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.616E-04	ALEACH(7)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(7)
R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	1.900E+03	5.000E+01	---	DCNUCC(8)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU(81)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS(8)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.934E-04	ALEACH(8)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(8)
R016	Distribution coefficients for daughter Th-228				
R016	Contaminated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCC(6)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU(61)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS(6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.562E-05	ALEACH(6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(6)
R017	Inhalation rate (m**3/yr)	1.100E+04	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	6.000E-04	1.000E-04	---	MLINH
R017	Exposure duration	1.000E+00	3.000E+01	---	ED
R017	Shielding factor inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor external gamma	4.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	0.000E+00	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	2.280E-01	2.500E-01	---	FOTD
R017	Shape factor flag external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m) ring 1:	not used	5.000E+01	---	RAD_SHAPE(1)
R017	Outer annular radius (m) ring 2:	not used	7.071E+01	---	RAD_SHAPE(2)
R017	Outer annular radius (m) ring 3:	not used	0.000E+00	---	RAD_SHAPE(3)
R017	Outer annular radius (m) ring 4:	not used	0.000E+00	---	RAD_SHAPE(4)
R017	Outer annular radius (m) ring 5:	not used	0.000E+00	---	RAD_SHAPE(5)

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R017    Outer annular radius (m) ring  6:            not used   0.000E+00            ---              RAD_SHAPE( 6)
R017    Outer annular radius (m) ring  7:            not used   0.000E+00            ---              RAD_SHAPE( 7)
R017    Outer annular radius (m) ring  8:            not used   0.000E+00            ---              RAD_SHAPE( 8)
R017    Outer annular radius (m) ring  9:            not used   0.000E+00            ---              RAD_SHAPE( 9)
R017    Outer annular radius (m) ring 10:            not used   0.000E+00            ---              RAD_SHAPE(10)
R017    Outer annular radius (m) ring 11:            not used   0.000E+00            ---              RAD_SHAPE(11)
R017    Outer annular radius (m) ring 12:            not used   0.000E+00            ---              RAD_SHAPE(12)
```

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA(1)
R017	Ring 2	not used	2.732E-01	---	FRACA(2)
R017	Ring 3	not used	0.000E+00	---	FRACA(3)
R017	Ring 4	not used	0.000E+00	---	FRACA(4)
R017	Ring 5	not used	0.000E+00	---	FRACA(5)
R017	Ring 6	not used	0.000E+00	---	FRACA(6)
R017	Ring 7	not used	0.000E+00	---	FRACA(7)
R017	Ring 8	not used	0.000E+00	---	FRACA(8)
R017	Ring 9	not used	0.000E+00	---	FRACA(9)
R017	Ring 10	not used	0.000E+00	---	FRACA(10)
R017	Ring 11	not used	0.000E+00	---	FRACA(11)
R017	Ring 12	not used	0.000E+00	---	FRACA(12)
R018	Fruits vegetables and grain consumption (kg/yr)	not used	1.600E+02	---	DIET(1)
R018	Leafy vegetable consumption (kg/yr)	not used	1.400E+01	---	DIET(2)
R018	Milk consumption (L/yr)	not used	9.200E+01	---	DIET(3)
R018	Meat and poultry consumption (kg/yr)	not used	6.300E+01	---	DIET(4)
R018	Fish consumption (kg/yr)	not used	5.400E+00	---	DIET(5)
R018	Other seafood consumption (kg/yr)	not used	9.000E-01	---	DIET(6)
R018	Soil ingestion rate (g/yr)	1.752E+02	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	not used	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	not used	1.000E+00	---	FDW
R018	Contamination fraction of household water	not used	1.000E+00	---	FHHW
R018	Contamination fraction of livestock water	not used	1.000E+00	---	FLW
R018	Contamination fraction of irrigation water	not used	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	not used	5.000E-01	---	FR9
R018	Contamination fraction of plant food	not used	-1	---	FPLANT
R018	Contamination fraction of meat	not used	-1	---	FMEAT
R018	Contamination fraction of milk	not used	-1	---	FMILK
R019	Livestock fodder intake for meat (kg/day)	not used	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	not used	5.500E+01	---	LFI6
R019	Livestock water intake for meat (L/day)	not used	5.000E+01	---	LWI5
R019	Livestock water intake for milk (L/day)	not used	1.600E+02	---	LWI6
R019	Livestock soil intake (kg/day)	not used	5.000E-01	---	LSI
R019	Mass loading for foliar deposition (g/m**3)	not used	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	1.500E-01	1.500E-01	---	DM
R019	Depth of roots (m)	not used	9.000E-01	---	DROOT
R019	Drinking water fraction from ground water	not used	1.000E+00	---	FGWDW
R019	Household water fraction from ground water	not used	1.000E+00	---	FGWHH
R019	Livestock water fraction from ground water	not used	1.000E+00	---	FGWLW

R019	Irrigation fraction from ground water	not used	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	not used	7.000E-01	---	YV(1)
R19B	Wet weight crop yield for Leafy (kg/m**2)	not used	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	not used	1.100E+00	---	YV(3)
R19B	Growing Season for Non-Leafy (years)	not used	1.700E-01	---	TE(1)
R19B	Growing Season for Leafy (years)	not used	2.500E-01	---	TE(2)
R19B	Growing Season for Fodder (years)	not used	8.000E-02	---	TE(3)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R19B	Translocation Factor for Non-Leafy	not used	1.000E-01	---	TIV(1)
R19B	Translocation Factor for Leafy	not used	1.000E+00	---	TIV(2)
R19B	Translocation Factor for Fodder	not used	1.000E+00	---	TIV(3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RDRY(1)
R19B	Dry Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RDRY(2)
R19B	Dry Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RDRY(3)
R19B	Wet Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RWET(1)
R19B	Wet Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RWET(2)
R19B	Wet Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RWET(3)
R19B	Weathering Removal Constant for Vegetation	not used	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm**3)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (1/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits non-leafy vegetables and grain	1.400E+01	1.400E+01	---	STOR_T(1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ

R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA(1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA(2)
TITL	Number of graphical time points	32	---	---	NPTS

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	1	---	---	KYMAX

Summary of Pathway Selections

Pathway	User Selection
1 -- external gamma	active
2 -- inhalation (w/o radon)	active
3 -- plant ingestion	suppressed
4 -- meat ingestion	suppressed
5 -- milk ingestion	suppressed
6 -- aquatic foods	suppressed
7 -- drinking water	suppressed
8 -- soil ingestion	active
9 -- radon	suppressed
Find peak pathway doses	suppressed

Summary : Residual Dose and Risk Assessment for Pit C Under Construction Worker Scenario
File : C:\USERS\MRAHMAN\DOCUMENTS\OLD RESRAD FILES\PIT C-CONSTRUCTION WORKER.RAD

Contaminated Zone Dimensions
Area: 8404.00 square meters
Thickness: 0.15 meters
Cover Depth: 0.00 meters

Initial Soil Concentrations pCi/g

Cs-137	1.000E+00
H-3	1.000E+00
Pb-210	1.000E+00
Ra-226	1.000E+00
Ra-228	1.000E+00
Th-230	1.000E+00
U-234	1.000E+00

0

Total Dose TDOSE(t) mrem/yr
Basic Radiation Dose Limit = 2.500E+01 mrem/yr
Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	2.000E+00	2.400E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	4.462E+00	4.726E+00	4.827E+00	4.835E+00	4.823E+00	3.986E+00	2.844E+00	2.435E+00	2.219E+00	1.642E+00
M(t):	1.785E-01	1.891E-01	1.931E-01	1.934E-01	1.929E-01	1.594E-01	1.138E-01	9.739E-02	8.877E-02	6.570E-02

0Maximum TDOSE(t): 4.835E+00 mrem/yr at t = 2.426 ñ 0.005 years
0

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 2.426E+00 years
0 Water Independent Pathways (Inhalation excludes radon)

0 Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	6.014E-01	0.1244	6.472E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.862E-03	0.0004
H-3	0.000E+00	0.0000	1.138E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.647E-15	0.0000
Pb-210	1.183E-03	0.0002	4.582E-03	0.0009	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.638E-01	0.0546
Ra-226	1.977E+00	0.4089	2.302E-03	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.777E-02	0.0161
Ra-228	1.671E+00	0.3456	4.070E-02	0.0084	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.760E-02	0.0119
Th-230	2.768E-03	0.0006	7.084E-02	0.0146	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.194E-02	0.0045
U-234	8.752E-05	0.0000	2.866E-02	0.0059	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.128E-02	0.0023
Total	4.254E+00	0.8798	1.471E-01	0.0304	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.342E-01	0.0898

Summary : Residual Dose and Risk Assessment for Pit C Under Construction Worker Scenario
File : C:\USERS\MRAHMAN\DOCUMENTS\OLD RESRAD FILES\PIT C-CONSTRUCTION WORKER.RAD

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 2.426E+00 years

0 Water Dependent Pathways

0 Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.033E-01	0.1248
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.205E-13	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.695E-01	0.0557
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.057E+00	0.4255
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.769E+00	0.3659
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.554E-02	0.0198
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.002E-02	0.0083
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.835E+00	1.0000

0*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground mrem/yr	Ground fract.	Inhalation mrem/yr	Inhalation fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	Soil mrem/yr	Soil fract.
Cs-137	6.371E-01	0.1428	6.860E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.974E-03	0.0004
H-3	0.000E+00	0.0000	5.973E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.488E-07	0.0000
Pb-210	1.281E-03	0.0003	4.966E-03	0.0011	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.859E-01	0.0641
Ra-226	1.981E+00	0.4439	1.947E-03	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.721E-02	0.0128
Ra-228	1.285E+00	0.2880	1.266E-02	0.0028	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.925E-02	0.0133
Th-230	6.896E-04	0.0002	7.093E-02	0.0159	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.190E-02	0.0049
U-234	8.759E-05	0.0000	2.872E-02	0.0064	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.130E-02	0.0025
Total	3.905E+00	0.8752	1.192E-01	0.0267	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.375E-01	0.0981

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years
Water Dependent Pathways

Radio-Nuclide	Water mrem/yr	Water fract.	Fish mrem/yr	Fish fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	All Pathways* mrem/yr	All Pathways* fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.390E-01	0.1432
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.322E-06	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.921E-01	0.0655
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.040E+00	0.4572
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.357E+00	0.3042
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.352E-02	0.0210
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.010E-02	0.0090
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.462E+00	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground mrem/yr	Ground fract.	Inhalation mrem/yr	Inhalation fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	Soil mrem/yr	Soil fract.
Cs-137	6.221E-01	0.1316	6.698E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.927E-03	0.0004
H-3	0.000E+00	0.0000	3.926E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.292E-10	0.0000
Pb-210	1.240E-03	0.0003	4.804E-03	0.0010	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.766E-01	0.0585
Ra-226	1.979E+00	0.4188	2.097E-03	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.589E-02	0.0139
Ra-228	1.549E+00	0.3276	2.920E-02	0.0062	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.022E-02	0.0127
Th-230	1.547E-03	0.0003	7.089E-02	0.0150	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.191E-02	0.0046
U-234	8.756E-05	0.0000	2.869E-02	0.0061	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.129E-02	0.0024
Total	4.153E+00	0.8787	1.357E-01	0.0287	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.378E-01	0.0926

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years
Water Dependent Pathways

Radio-Nuclide	Water mrem/yr	Water fract.	Fish mrem/yr	Fish fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	All Pathways* mrem/yr	All Pathways* fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.241E-01	0.1320
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.156E-09	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.826E-01	0.0598
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.047E+00	0.4332
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.638E+00	0.3466
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.435E-02	0.0200
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.007E-02	0.0085
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.726E+00	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 2.000E+00 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground mrem/yr	Ground fract.	Inhalation mrem/yr	Inhalation fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	Soil mrem/yr	Soil fract.
Cs-137	6.075E-01	0.1259	6.539E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.881E-03	0.0004
H-3	0.000E+00	0.0000	2.581E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.507E-13	0.0000
Pb-210	1.200E-03	0.0002	4.647E-03	0.0010	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.675E-01	0.0554
Ra-226	1.978E+00	0.4098	2.242E-03	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.428E-02	0.0154
Ra-228	1.657E+00	0.3434	3.837E-02	0.0080	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.873E-02	0.0122
Th-230	2.404E-03	0.0005	7.085E-02	0.0147	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.193E-02	0.0045
U-234	8.753E-05	0.0000	2.867E-02	0.0059	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.128E-02	0.0023
Total	4.247E+00	0.8798	1.448E-01	0.0300	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.356E-01	0.0902

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 2.000E+00 years
Water Dependent Pathways

Radio-Nuclide	Water mrem/yr	Water fract.	Fish mrem/yr	Fish fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	All Pathways* mrem/yr	All Pathways* fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.094E-01	0.1263
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.731E-12	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.734E-01	0.0566
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.054E+00	0.4256
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.755E+00	0.3635
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.519E-02	0.0197
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.003E-02	0.0083
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.827E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Residual Dose and Risk Assessment for Pit C Under Construction Worker Scenario
File : C:\USERS\MRAHMAN\DOCUMENTS\OLD RESRAD FILES\PIT C-CONSTRUCTION WORKER.RAD

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 2.400E+00 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	6.018E-01	0.1245	6.476E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.863E-03	0.0004
H-3	0.000E+00	0.0000	1.377E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.038E-15	0.0000
Pb-210	1.184E-03	0.0002	4.586E-03	0.0009	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.640E-01	0.0546
Ra-226	1.977E+00	0.4090	2.299E-03	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.755E-02	0.0160
Ra-228	1.671E+00	0.3455	4.058E-02	0.0084	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.768E-02	0.0119
Th-230	2.746E-03	0.0006	7.084E-02	0.0147	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.194E-02	0.0045
U-234	8.752E-05	0.0000	2.866E-02	0.0059	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.128E-02	0.0023
Total	4.254E+00	0.8798	1.470E-01	0.0304	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.343E-01	0.0898

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 2.400E+00 years
Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.037E-01	0.1248
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.457E-13	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.698E-01	0.0558
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.057E+00	0.4255
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.769E+00	0.3659
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.552E-02	0.0198
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.002E-02	0.0083
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.835E+00	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground mrem/yr	Ground fract.	Inhalation mrem/yr	Inhalation fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	Soil mrem/yr	Soil fract.
Cs-137	5.933E-01	0.1230	6.384E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.836E-03	0.0004
H-3	0.000E+00	0.0000	1.696E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.904E-17	0.0000
Pb-210	1.161E-03	0.0002	4.495E-03	0.0009	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.588E-01	0.0537
Ra-226	1.977E+00	0.4099	2.382E-03	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.238E-02	0.0171
Ra-228	1.667E+00	0.3457	4.270E-02	0.0089	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.577E-02	0.0116
Th-230	3.259E-03	0.0007	7.081E-02	0.0147	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.195E-02	0.0046
U-234	8.751E-05	0.0000	2.864E-02	0.0059	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.127E-02	0.0023
Total	4.242E+00	0.8795	1.490E-01	0.0309	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.320E-01	0.0896

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years
Water Dependent Pathways

Radio-Nuclide	Water mrem/yr	Water fract.	Fish mrem/yr	Fish fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	All Pathways* mrem/yr	All Pathways* fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.951E-01	0.1234
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.795E-15	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.645E-01	0.0548
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.061E+00	0.4274
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.766E+00	0.3661
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.602E-02	0.0199
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.000E-02	0.0083
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.823E+00	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+01 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	5.025E-01	0.1261	5.397E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.552E-03	0.0004
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	9.228E-04	0.0002	3.563E-03	0.0009	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.051E-01	0.0515
Ra-226	1.967E+00	0.4936	3.236E-03	0.0008	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.319E-01	0.0331
Ra-228	9.698E-01	0.2433	2.943E-02	0.0074	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.868E-02	0.0072
Th-230	9.225E-03	0.0023	7.054E-02	0.0177	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.219E-02	0.0056
U-234	8.759E-05	0.0000	2.847E-02	0.0071	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.120E-02	0.0028
Total	3.450E+00	0.8655	1.352E-01	0.0339	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.007E-01	0.1005

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+01 years
Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.041E-01	0.1265
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.096E-01	0.0526
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.102E+00	0.5275
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.028E+00	0.2579
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.020E-01	0.0256
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.975E-02	0.0100
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.986E+00	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground mrem/yr	Ground fract.	Inhalation mrem/yr	Inhalation fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	Soil mrem/yr	Soil fract.
Cs-137	3.126E-01	0.1099	3.339E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.606E-04	0.0003
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	4.786E-04	0.0002	1.835E-03	0.0006	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.056E-01	0.0371
Ra-226	1.941E+00	0.6823	4.778E-03	0.0017	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.217E-01	0.0779
Ra-228	9.164E-02	0.0322	2.835E-03	0.0010	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.643E-03	0.0009
Th-230	2.604E-02	0.0092	6.977E-02	0.0245	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.351E-02	0.0083
U-234	8.985E-05	0.0000	2.797E-02	0.0098	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.101E-02	0.0039
Total	2.372E+00	0.8338	1.072E-01	0.0377	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.654E-01	0.1285

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years
Water Dependent Pathways

Radio-Nuclide	Water mrem/yr	Water fract.	Fish mrem/yr	Fish fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	All Pathways* mrem/yr	All Pathways* fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.136E-01	0.1103
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.079E-01	0.0380
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.167E+00	0.7620
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.712E-02	0.0341
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.193E-01	0.0419
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.907E-02	0.0137
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.844E+00	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground mrem/yr	Ground fract.	Inhalation mrem/yr	Inhalation fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	Soil mrem/yr	Soil fract.
Cs-137	5.937E-02	0.0244	6.219E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.789E-04	0.0001
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	4.808E-05	0.0000	1.796E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.034E-02	0.0042
Ra-226	1.849E+00	0.7594	5.953E-03	0.0024	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.928E-01	0.1203
Ra-228	1.947E-05	0.0000	5.923E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.519E-07	0.0000
Th-230	8.224E-02	0.0338	6.716E-02	0.0276	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.070E-02	0.0126
U-234	1.203E-04	0.0000	2.629E-02	0.0108	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.034E-02	0.0042
Total	1.991E+00	0.8177	9.958E-02	0.0409	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.444E-01	0.1414

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years
Water Dependent Pathways

Radio-Nuclide	Water mrem/yr	Water fract.	Fish mrem/yr	Fish fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	All Pathways* mrem/yr	All Pathways* fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.955E-02	0.0245
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.057E-02	0.0043
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.148E+00	0.8821
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.061E-05	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.801E-01	0.0740
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.676E-02	0.0151
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.435E+00	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	5.137E-04	0.0002	5.084E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.463E-06	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	6.757E-08	0.0000	2.337E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.346E-05	0.0000
Ra-226	1.603E+00	0.7224	5.044E-03	0.0023	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.493E-01	0.1123
Ra-228	6.220E-16	0.0000	1.800E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.677E-17	0.0000
Th-230	2.208E-01	0.0995	5.994E-02	0.0270	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.949E-02	0.0223
U-234	3.696E-04	0.0002	2.193E-02	0.0099	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.654E-03	0.0039
Total	1.825E+00	0.8223	8.692E-02	0.0392	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.074E-01	0.1385

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years
Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.152E-04	0.0002
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.376E-05	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.858E+00	0.8370
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.568E-16	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.303E-01	0.1488
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.095E-02	0.0139
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.219E+00	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	2.919E-11	0.0000	2.322E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.679E-14	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	6.849E-18	0.0000	1.718E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.890E-16	0.0000
Ra-226	9.180E-01	0.5589	2.363E-03	0.0014	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.168E-01	0.0711
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	4.806E-01	0.2926	3.708E-02	0.0226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.029E-02	0.0428
U-234	2.110E-03	0.0013	1.077E-02	0.0066	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.460E-03	0.0027
Total	1.401E+00	0.8528	5.021E-02	0.0306	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.915E-01	0.1166

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years
Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.926E-11	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.013E-15	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.037E+00	0.6315
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.880E-01	0.3580
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.734E-02	0.0106
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.642E+00	1.0000

*Sum of all water independent and dependent pathways.

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

0 Parent (i)	Product (j)	Thread Fraction	DSR(jt) At Time in Years (mrem/yr)/(pCi/g) 0.000E+00	1.000E+00	2.000E+00	2.400E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Cs-137+D	Cs-137+D	1.000E+00	6.390E-01	6.241E-01	6.094E-01	6.037E-01	5.951E-01	5.041E-01	3.136E-01	5.955E-02	5.152E-04	2.926E-11
0H-3	H-3	1.000E+00	6.322E-06	4.156E-09	2.731E-12	1.457E-13	1.795E-15	9.517E-38	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0Pb-210+D	Pb-210+D	1.000E+00	2.921E-01	2.826E-01	2.734E-01	2.698E-01	2.645E-01	2.096E-01	1.079E-01	1.057E-02	1.376E-05	1.013E-15
0Ra-226+D	Ra-226+D	1.000E+00	2.035E+00	2.034E+00	2.032E+00	2.032E+00	2.031E+00	2.021E+00	1.993E+00	1.897E+00	1.643E+00	9.365E-01
Ra-226+D	Pb-210+D	1.000E+00	4.564E-03	1.349E-02	2.211E-02	2.548E-02	3.044E-02	8.142E-02	1.742E-01	2.502E-01	2.145E-01	1.006E-01
Ra-226+D	-DSR(j)		2.040E+00	2.047E+00	2.054E+00	2.057E+00	2.061E+00	2.102E+00	2.167E+00	2.148E+00	1.858E+00	1.037E+00
0Ra-228+D	Ra-228+D	1.000E+00	1.076E+00	9.532E-01	8.448E-01	8.049E-01	7.486E-01	3.214E-01	2.869E-02	6.093E-06	1.947E-16	0.000E+00
Ra-228+D	Th-228+D	1.000E+00	2.814E-01	6.847E-01	9.098E-01	9.641E-01	1.017E+00	7.066E-01	6.844E-02	1.452E-05	4.620E-16	0.000E+00
Ra-228+D	-DSR(j)		1.357E+00	1.638E+00	1.755E+00	1.769E+00	1.766E+00	1.028E+00	9.712E-02	2.061E-05	6.568E-16	0.000E+00
0Th-230	Th-230	1.000E+00	9.308E-02	9.302E-02	9.297E-02	9.295E-02	9.292E-02	9.255E-02	9.149E-02	8.785E-02	7.785E-02	4.715E-02
Th-230	Ra-226+D	1.000E+00	4.408E-04	1.322E-03	2.202E-03	2.554E-03	3.081E-03	9.211E-03	2.648E-02	8.415E-02	2.261E-01	4.901E-01
Th-230	Pb-210+D	1.000E+00	6.608E-07	4.580E-06	1.230E-05	1.642E-05	2.368E-05	1.960E-04	1.342E-03	8.095E-03	2.633E-02	5.074E-02
Th-230	-DSR(j)		9.352E-02	9.435E-02	9.519E-02	9.552E-02	9.602E-02	1.020E-01	1.193E-01	1.801E-01	3.303E-01	5.880E-01
0U-234	U-234	1.000E+00	4.010E-02	4.007E-02	4.003E-02	4.002E-02	4.000E-02	3.975E-02	3.904E-02	3.664E-02	3.042E-02	1.467E-02
U-234	Th-230	1.000E+00	4.189E-07	1.256E-06	2.091E-06	2.425E-06	2.926E-06	8.733E-06	2.500E-05	7.819E-05	2.006E-04	3.624E-04
U-234	Ra-226+D	1.000E+00	1.323E-09	9.254E-09	2.511E-08	3.366E-08	4.886E-08	4.354E-07	3.631E-06	3.788E-05	3.014E-04	2.100E-03
U-234	Pb-210+D	1.000E+00	1.489E-12	2.217E-11	9.529E-11	1.468E-10	2.544E-10	6.353E-09	1.321E-07	2.935E-06	3.195E-05	2.112E-04
U-234	-DSR(j)		4.010E-02	4.007E-02	4.003E-02	4.002E-02	4.000E-02	3.975E-02	3.907E-02	3.676E-02	3.095E-02	1.734E-02

The DSR includes contributions from associated (half-life ó 180 days) daughters.

0

Single Radionuclide Soil Guidelines G(it) in pCi/g
Basic Radiation Dose Limit = 2.500E+01 mrem/yr

0Nuclide (i)	t= 0.000E+00	1.000E+00	2.000E+00	2.400E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Cs-137	3.912E+01	4.006E+01	4.102E+01	4.141E+01	4.201E+01	4.960E+01	7.972E+01	4.198E+02	4.853E+04	8.544E+11
H-3	3.954E+06	6.016E+09	9.153E+12	1.716E+14	*9.597E+15	*9.597E+15	*9.597E+15	*9.597E+15	*9.597E+15	*9.597E+15
Pb-210	8.558E+01	8.846E+01	9.145E+01	9.267E+01	9.453E+01	1.193E+02	2.316E+02	2.366E+03	1.817E+06	*7.634E+13
Ra-226	1.226E+01	1.221E+01	1.217E+01	1.215E+01	1.213E+01	1.189E+01	1.154E+01	1.164E+01	1.346E+01	2.410E+01
Ra-228	1.842E+01	1.526E+01	1.425E+01	1.413E+01	1.416E+01	2.432E+01	2.574E+02	1.213E+06	*2.726E+14	*2.726E+14
Th-230	2.673E+02	2.650E+02	2.626E+02	2.617E+02	2.604E+02	2.452E+02	2.095E+02	1.388E+02	7.570E+01	4.252E+01
U-234	6.234E+02	6.239E+02	6.245E+02	6.247E+02	6.250E+02	6.289E+02	6.399E+02	6.801E+02	8.077E+02	1.442E+03

*At specific activity limit

Summary : Residual Dose and Risk Assessment for Pit C Under Construction Worker Scenario
File : C:\USERS\MRAHMAN\DOCUMENTS\OLD RESRAD FILES\PIT C-CONSTRUCTION WORKER.RAD

Summed Dose/Source Ratios DSR(it) in (mrem/yr)/(pCi/g)
and Single Radionuclide Soil Guidelines G(it) in pCi/g
at tmin = time of minimum single radionuclide soil guideline
and at tmax = time of maximum total dose = 2.426 ñ 0.005 years

0Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(itmin)	G(itmin) (pCi/g)	DSR(itmax)	G(itmax) (pCi/g)
Cs-137	1.000E+00	0.000E+00	6.390E-01	3.912E+01	6.033E-01	4.144E+01
H-3	1.000E+00	0.000E+00	6.322E-06	3.954E+06	1.205E-13	2.075E+14
Pb-210	1.000E+00	0.000E+00	2.921E-01	8.558E+01	2.695E-01	9.275E+01
Ra-226	1.000E+00	52.6 ñ 0.1	2.185E+00	1.144E+01	2.057E+00	1.215E+01
Ra-228	1.000E+00	2.620 ñ 0.005	1.771E+00	1.412E+01	1.769E+00	1.413E+01
Th-230	1.000E+00	1.000E+03	5.880E-01	4.252E+01	9.554E-02	2.617E+02
U-234	1.000E+00	0.000E+00	4.010E-02	6.234E+02	4.002E-02	6.247E+02

Summary : Residual Dose and Risk Assessment for Pit C Under Construction Worker Scenario
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Individual Nuclide Dose Summed Over All Pathways
Parent Nuclide and Branch Fraction Indicated

0Nuclide (j)	Parent (i)	THF(i)	DOSE(jt) mrem/yr t= 0.000E+00	1.000E+00	2.000E+00	2.400E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Cs-137	Cs-137	1.000E+00	6.390E-01	6.241E-01	6.094E-01	6.037E-01	5.951E-01	5.041E-01	3.136E-01	5.955E-02	5.152E-04	2.926E-11
0H-3	H-3	1.000E+00	6.322E-06	4.156E-09	2.731E-12	1.457E-13	1.795E-15	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0Pb-210	Pb-210	1.000E+00	2.921E-01	2.826E-01	2.734E-01	2.698E-01	2.645E-01	2.096E-01	1.079E-01	1.057E-02	1.376E-05	1.013E-15
Pb-210	Ra-226	1.000E+00	4.564E-03	1.349E-02	2.211E-02	2.548E-02	3.044E-02	8.142E-02	1.742E-01	2.502E-01	2.145E-01	1.006E-01
Pb-210	Th-230	1.000E+00	6.608E-07	4.580E-06	1.230E-05	1.642E-05	2.368E-05	1.960E-04	1.342E-03	8.095E-03	2.633E-02	5.074E-02
Pb-210	U-234	1.000E+00	1.489E-12	2.217E-11	9.529E-11	1.468E-10	2.544E-10	6.353E-09	1.321E-07	2.935E-06	3.195E-05	2.112E-04
Pb-210	-DOSE(j)		2.967E-01	2.961E-01	2.955E-01	2.953E-01	2.949E-01	2.912E-01	2.834E-01	2.689E-01	2.408E-01	1.516E-01
0Ra-226	Ra-226	1.000E+00	2.035E+00	2.034E+00	2.032E+00	2.032E+00	2.031E+00	2.021E+00	1.993E+00	1.897E+00	1.643E+00	9.365E-01
Ra-226	Th-230	1.000E+00	4.408E-04	1.322E-03	2.202E-03	2.554E-03	3.081E-03	9.211E-03	2.648E-02	8.415E-02	2.261E-01	4.901E-01
Ra-226	U-234	1.000E+00	1.323E-09	9.254E-09	2.511E-08	3.366E-08	4.886E-08	4.354E-07	3.631E-06	3.788E-05	3.014E-04	2.100E-03
Ra-226	-DOSE(j)		2.036E+00	2.035E+00	2.035E+00	2.034E+00	2.034E+00	2.030E+00	2.020E+00	1.982E+00	1.869E+00	1.429E+00
0Ra-228	Ra-228	1.000E+00	1.076E+00	9.532E-01	8.448E-01	8.049E-01	7.486E-01	3.214E-01	2.869E-02	6.093E-06	1.947E-16	0.000E+00
0Th-228	Ra-228	1.000E+00	2.814E-01	6.847E-01	9.098E-01	9.641E-01	1.017E+00	7.066E-01	6.844E-02	1.452E-05	4.620E-16	0.000E+00
0Th-230	Th-230	1.000E+00	9.308E-02	9.302E-02	9.297E-02	9.295E-02	9.292E-02	9.255E-02	9.149E-02	8.785E-02	7.785E-02	4.715E-02
Th-230	U-234	1.000E+00	4.189E-07	1.256E-06	2.091E-06	2.425E-06	2.926E-06	8.733E-06	2.500E-05	7.819E-05	2.006E-04	3.624E-04
Th-230	-DOSE(j)		9.308E-02	9.303E-02	9.297E-02	9.295E-02	9.292E-02	9.256E-02	9.152E-02	8.793E-02	7.805E-02	4.751E-02
0U-234	U-234	1.000E+00	4.010E-02	4.007E-02	4.003E-02	4.002E-02	4.000E-02	3.975E-02	3.904E-02	3.664E-02	3.042E-02	1.467E-02

THF(i) is the thread fraction of the parent nuclide.

Summary : Residual Dose and Risk Assessment for Pit C Under Construction Worker Scenario
File : C:\USERS\MRAHMAN\DOCUMENTS\OLD RESRAD FILES\PIT C-CONSTRUCTION WORKER.RAD

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

0Nuclide (j)	Parent (i)	THF(i)	t= 0.000E+00	1.000E+00	2.000E+00	2.400E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
			S(jt) pCi/g									
Cs-137	Cs-137	1.000E+00	1.000E+00	9.767E-01	9.539E-01	9.449E-01	9.317E-01	7.898E-01	4.927E-01	9.444E-02	8.422E-04	5.642E-11
0H-3	H-3	1.000E+00	1.000E+00	6.576E-04	4.324E-07	2.307E-08	2.843E-10	1.511E-32	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0Pb-210	Pb-210	1.000E+00	1.000E+00	9.677E-01	9.365E-01	9.243E-01	9.063E-01	7.205E-01	3.740E-01	3.768E-02	5.349E-05	5.767E-15
Pb-210	Ra-226	1.000E+00	0.000E+00	3.057E-02	6.014E-02	7.169E-02	8.874E-02	2.643E-01	5.880E-01	8.772E-01	8.205E-01	5.638E-01
Pb-210	Th-230	1.000E+00	0.000E+00	6.658E-06	2.634E-05	3.776E-05	5.861E-05	6.039E-04	4.445E-03	2.820E-02	1.006E-01	2.841E-01
Pb-210	U-234	1.000E+00	0.000E+00	2.003E-11	1.589E-10	2.737E-10	5.318E-10	1.859E-08	4.299E-07	1.017E-05	1.218E-04	1.182E-03
Pb-210	-S(j):		1.000E+00	9.983E-01	9.967E-01	9.961E-01	9.951E-01	9.853E-01	9.664E-01	9.431E-01	9.213E-01	8.490E-01
0Ra-226	Ra-226	1.000E+00	1.000E+00	9.995E-01	9.989E-01	9.987E-01	9.984E-01	9.947E-01	9.840E-01	9.478E-01	8.514E-01	5.849E-01
Ra-226	Th-230	1.000E+00	0.000E+00	4.331E-04	8.658E-04	1.039E-03	1.298E-03	4.317E-03	1.286E-02	4.182E-02	1.169E-01	3.059E-01
Ra-226	U-234	1.000E+00	0.000E+00	1.949E-09	7.793E-09	1.122E-08	1.753E-08	1.942E-07	1.734E-06	1.873E-05	1.556E-04	1.310E-03
Ra-226	-S(j):		1.000E+00	9.999E-01	9.998E-01	9.998E-01	9.997E-01	9.990E-01	9.969E-01	9.896E-01	9.685E-01	8.922E-01
0Ra-228	Ra-228	1.000E+00	1.000E+00	8.863E-01	7.856E-01	7.486E-01	6.963E-01	2.992E-01	2.680E-02	5.757E-06	1.908E-16	0.000E+00
0Th-228	Ra-228	1.000E+00	0.000E+00	2.853E-01	4.514E-01	4.939E-01	5.383E-01	4.086E-01	4.014E-02	8.631E-06	2.861E-16	0.000E+00
0Th-230	Th-230	1.000E+00	1.000E+00	9.998E-01	9.997E-01	9.996E-01	9.995E-01	9.983E-01	9.949E-01	9.831E-01	9.501E-01	8.431E-01
Th-230	U-234	1.000E+00	0.000E+00	8.999E-06	1.799E-05	2.159E-05	2.698E-05	8.972E-05	2.674E-04	8.707E-04	2.444E-03	6.478E-03
Th-230	-S(j):		1.000E+00	9.998E-01	9.997E-01	9.996E-01	9.995E-01	9.984E-01	9.952E-01	9.840E-01	9.525E-01	8.496E-01
0U-234	U-234	1.000E+00	1.000E+00	9.995E-01	9.990E-01	9.988E-01	9.985E-01	9.951E-01	9.852E-01	9.516E-01	8.617E-01	6.088E-01

THF(i) is the thread fraction of the parent nuclide.
0RESCALC.EXE execution time = 0.44 seconds

Intrisk : Residual Dose and Risk Assessment for Pit C Under Construction Worker Scenario
File : C:\USERS\MRAHMAN\DOCUMENTS\OLD RESRAD FILES\PIT C-CONSTRUCTION WORKER.RAD

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Cancer Risk Slope Factors Summary Table
Risk Library: FGR 13 Morbidity

Menu	Parameter	Current Value	Base Case*	Parameter Name
Sf-1	Ground external radiation slope factors, 1/yr per (pCi/g):			
Sf-1	Cs-137+D	2.55E-06	5.32E-10	SLPF(1,1)
Sf-1	H-3	0.00E+00	0.00E+00	SLPF(2,1)
Sf-1	Pb-210+D	4.21E-09	1.41E-09	SLPF(3,1)
Sf-1	Ra-226+D	8.49E-06	2.29E-08	SLPF(4,1)
Sf-1	Ra-228+D	4.53E-06	0.00E+00	SLPF(5,1)
Sf-1	Th-228+D	7.76E-06	5.59E-09	SLPF(6,1)
Sf-1	Th-230	8.19E-10	8.19E-10	SLPF(7,1)
Sf-1	U-234	2.52E-10	2.52E-10	SLPF(8,1)
Sf-2	Inhalation, slope factors, 1/(pCi):			
Sf-2	Cs-137+D	1.12E-10	1.12E-10	SLPF(1,2)
Sf-2	H-3	8.51E-13	8.51E-13	SLPF(2,2)
Sf-2	Pb-210+D	3.08E-08	1.58E-08	SLPF(3,2)
Sf-2	Ra-226+D	2.83E-08	2.82E-08	SLPF(4,2)
Sf-2	Ra-228+D	4.37E-08	4.37E-08	SLPF(5,2)
Sf-2	Th-228+D	1.44E-07	1.32E-07	SLPF(6,2)
Sf-2	Th-230	3.40E-08	3.40E-08	SLPF(7,2)
Sf-2	U-234	2.78E-08	2.78E-08	SLPF(8,2)
Sf-3	Food ingestion, slope factors, 1/(pCi):			
Sf-3	Cs-137+D	3.74E-11	3.74E-11	SLPF(1,3)
Sf-3	H-3	1.44E-13	1.44E-13	SLPF(2,3)
Sf-3	Pb-210+D	3.44E-09	1.18E-09	SLPF(3,3)
Sf-3	Ra-226+D	5.15E-10	5.14E-10	SLPF(4,3)
Sf-3	Ra-228+D	1.43E-09	1.43E-09	SLPF(5,3)
Sf-3	Th-228+D	4.22E-10	1.48E-10	SLPF(6,3)
Sf-3	Th-230	1.19E-10	1.19E-10	SLPF(7,3)
Sf-3	U-234	9.55E-11	9.55E-11	SLPF(8,3)
Sf-3	Water ingestion, slope factors, 1/(pCi):			
Sf-3	Cs-137+D	3.04E-11	3.04E-11	SLPF(1,4)
Sf-3	H-3	1.12E-13	1.12E-13	SLPF(2,4)
Sf-3	Pb-210+D	2.66E-09	8.81E-10	SLPF(3,4)
Sf-3	Ra-226+D	3.86E-10	3.85E-10	SLPF(4,4)
Sf-3	Ra-228+D	1.04E-09	1.04E-09	SLPF(5,4)
Sf-3	Th-228+D	2.99E-10	1.07E-10	SLPF(6,4)
Sf-3	Th-230	9.10E-11	9.10E-11	SLPF(7,4)
Sf-3	U-234	7.07E-11	7.07E-11	SLPF(8,4)
Sf-3	Soil ingestion, slope factors, 1/(pCi):			

Sf-3	Cs-137+D	3.74E-11	3.74E-11	SLPF(1,5)
Sf-3	H-3	1.44E-13	1.44E-13	SLPF(2,5)
Sf-3	Pb-210+D	3.44E-09	1.18E-09	SLPF(3,5)
Sf-3	Ra-226+D	5.15E-10	5.14E-10	SLPF(4,5)
Sf-3	Ra-228+D	1.43E-09	1.43E-09	SLPF(5,5)
Sf-3	Th-228+D	4.22E-10	1.48E-10	SLPF(6,5)
Sf-3	Th-230	1.19E-10	1.19E-10	SLPF(7,5)
Sf-3	U-234	9.55E-11	9.55E-11	SLPF(8,5)

Cancer Risk Slope Factors Summary Table (continued)
Risk Library: FGR 13 Morbidity

Menu	Parameter	Current Value	Base Case*	Parameter Name
Sf-Rn	Radon Inhalation slope factors, 1/(pCi):			
Sf-Rn	Rn-222	1.80E-12	1.80E-12	SLPFRN(1,1)
Sf-Rn	Po-218	3.70E-12	3.70E-12	SLPFRN(1,2)
Sf-Rn	Pb-214	6.20E-12	6.20E-12	SLPFRN(1,3)
Sf-Rn	Bi-214	1.50E-11	1.50E-11	SLPFRN(1,4)
Sf-Rn	Rn-220	1.90E-13	1.90E-13	SLPFRN(2,1)
Sf-Rn	Po-216	3.00E-15	3.00E-15	SLPFRN(2,2)
Sf-Rn	Pb-212	3.90E-11	3.90E-11	SLPFRN(2,3)
Sf-Rn	Bi-212	3.70E-11	3.70E-11	SLPFRN(2,4)
Sf-Rn	Radon K factors, (mrem/WLM):			
Sf-Rn	Rn-222 Indoor	7.60E+02	7.60E+02	KFACTR(1,1)
Sf-Rn	Rn-222 Outdoor	5.70E+02	5.70E+02	KFACTR(1,2)
Sf-Rn	Rn-220 Indoor	1.50E+02	1.50E+02	KFACTR(2,1)
Sf-Rn	Rn-220 Outdoor	2.50E+02	2.50E+02	KFACTR(2,2)

*Base Case means Default.Lib w/o Associate Nuclide contributions.

Risk Slope and Environmental Transport Factors for the Ground Pathway

0Nuclide (i)	Slope(i)*	ETFG(i,t) At Time in Years (dimensionless)									
	t=	0.000E+00	1.000E+00	2.000E+00	2.400E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ac-228	4.530E-06	1.812E-01	1.812E-01	1.811E-01	1.811E-01	1.811E-01	1.809E-01	1.804E-01	1.785E-01	1.726E-01	1.447E-01
At-218	3.570E-09	2.201E-01	2.201E-01	2.201E-01	2.201E-01	2.201E-01	2.201E-01	2.202E-01	2.203E-01	2.207E-01	2.202E-01
Ba-137m	2.690E-06	1.889E-01	1.889E-01	1.889E-01	1.889E-01	1.889E-01	1.887E-01	1.882E-01	1.864E-01	1.809E-01	1.535E-01
Bi-210	2.760E-09	2.074E-01	2.073E-01	2.073E-01	2.073E-01	2.073E-01	2.072E-01	2.069E-01	2.058E-01	2.022E-01	1.813E-01
Bi-212	8.870E-07	1.827E-01	1.827E-01	1.827E-01	1.826E-01	1.826E-01	1.825E-01	1.819E-01	1.800E-01	1.741E-01	1.459E-01
Bi-214	7.480E-06	1.742E-01	1.742E-01	1.741E-01	1.741E-01	1.741E-01	1.739E-01	1.733E-01	1.713E-01	1.651E-01	1.366E-01
Cs-137	5.320E-10	2.127E-01	2.127E-01	2.127E-01	2.127E-01	2.127E-01	2.126E-01	2.124E-01	2.117E-01	2.091E-01	1.922E-01
H-3	0.000E+00	2.280E-01	2.280E-01	2.280E-01	2.280E-01	2.280E-01	2.280E-01	2.280E-01	2.280E-01	2.280E-01	2.280E-01
Pb-210	1.410E-09	2.228E-01	2.228E-01	2.228E-01	2.228E-01	2.228E-01	2.228E-01	2.228E-01	2.229E-01	2.230E-01	2.230E-01
Pb-212	5.090E-07	2.053E-01	2.053E-01	2.052E-01	2.052E-01	2.052E-01	2.051E-01	2.048E-01	2.036E-01	1.998E-01	1.775E-01
Pb-214	9.820E-07	1.982E-01	1.982E-01	1.981E-01	1.981E-01	1.981E-01	1.980E-01	1.976E-01	1.961E-01	1.913E-01	1.661E-01
Po-210	3.950E-11	1.857E-01	1.857E-01	1.857E-01	1.857E-01	1.857E-01	1.855E-01	1.850E-01	1.831E-01	1.773E-01	1.494E-01
Po-212	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Po-214	3.860E-10	1.846E-01	1.846E-01	1.846E-01	1.846E-01	1.846E-01	1.844E-01	1.839E-01	1.820E-01	1.763E-01	1.486E-01
Po-216	7.870E-11	1.848E-01	1.847E-01	1.847E-01	1.847E-01	1.847E-01	1.845E-01	1.840E-01	1.822E-01	1.763E-01	1.486E-01
Po-218	4.260E-11	1.847E-01	1.847E-01	1.846E-01	1.846E-01	1.846E-01	1.844E-01	1.839E-01	1.821E-01	1.762E-01	1.484E-01
Ra-224	3.720E-08	2.039E-01	2.039E-01	2.039E-01	2.039E-01	2.038E-01	2.037E-01	2.034E-01	2.021E-01	1.980E-01	1.746E-01
Ra-226	2.290E-08	2.064E-01	2.064E-01	2.064E-01	2.064E-01	2.063E-01	2.062E-01	2.059E-01	2.048E-01	2.011E-01	1.794E-01
Ra-228	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Rn-220	1.700E-09	1.904E-01	1.904E-01	1.904E-01	1.904E-01	1.904E-01	1.902E-01	1.897E-01	1.880E-01	1.825E-01	1.554E-01
Rn-222	1.740E-09	1.912E-01	1.912E-01	1.911E-01	1.911E-01	1.911E-01	1.910E-01	1.905E-01	1.888E-01	1.834E-01	1.564E-01
Th-228	5.590E-09	2.115E-01	2.115E-01	2.115E-01	2.115E-01	2.115E-01	2.114E-01	2.112E-01	2.104E-01	2.076E-01	1.896E-01
Th-230	8.190E-10	2.155E-01	2.155E-01	2.155E-01	2.155E-01	2.155E-01	2.155E-01	2.154E-01	2.149E-01	2.133E-01	2.007E-01
Tl-208	1.760E-05	1.624E-01	1.624E-01	1.624E-01	1.624E-01	1.623E-01	1.621E-01	1.615E-01	1.594E-01	1.530E-01	1.249E-01
Tl-210	0.000E+00	2.280E-01	2.280E-01	2.280E-01	2.280E-01	2.280E-01	2.280E-01	2.280E-01	2.280E-01	2.280E-01	2.280E-01
U-234	2.520E-10	2.181E-01	2.181E-01	2.181E-01	2.181E-01	2.181E-01	2.181E-01	2.180E-01	2.177E-01	2.164E-01	2.065E-01

* - Units are 1/yr per (pCi/g) at infinite depth and area. Multiplication by ETFG(i,t) converts to site conditions.

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 0.000E+00 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Cs-137	2.176E-01	0.000E+00	0.000E+00	0.000E+00	3.995E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.995E+01
H-3	6.842E+02	0.000E+00	0.000E+00	0.000E+00	3.995E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.995E+01
Pb-210	2.176E-01	0.000E+00	0.000E+00	0.000E+00	3.995E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.995E+01
Ra-226	2.176E-01	0.000E+00	0.000E+00	0.000E+00	3.995E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.995E+01
Ra-228	2.176E-01	0.000E+00	0.000E+00	0.000E+00	3.995E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.995E+01
Th-228	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	2.176E-01	0.000E+00	0.000E+00	0.000E+00	3.995E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.995E+01
U-234	2.176E-01	0.000E+00	0.000E+00	0.000E+00	3.995E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.995E+01

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 0.000E+00 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 0.000E+00 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	4.809E-07	0.1568	2.438E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.494E-09	0.0005
H-3	0.000E+00	0.0000	5.822E-10	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.752E-12	0.0000
Pb-210	8.937E-10	0.0003	6.694E-09	0.0022	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.375E-07	0.0448
Ra-226	1.503E-06	0.4899	6.153E-09	0.0020	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.056E-08	0.0067
Ra-228	8.208E-07	0.2676	9.522E-09	0.0031	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.724E-08	0.0187
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	1.765E-10	0.0001	7.400E-09	0.0024	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.754E-09	0.0015
U-234	5.496E-11	0.0000	6.051E-09	0.0020	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.815E-09	0.0012
Total	2.805E-06	0.9146	3.643E-08	0.0119	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.254E-07	0.0735

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 0.000E+00 years

Water Dependent Pathways

Radio-	Water		Fish		Plant		Meat		Milk		All Pathways**	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.824E-07	0.1573
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.880E-10	0.0002
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.451E-07	0.0473
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.529E-06	0.4986
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.876E-07	0.2894
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.233E-08	0.0040
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.920E-09	0.0032
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.067E-06	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

0

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 0.000E+00 years

0

Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 0.000E+00 years

0 Water Independent Pathways (Inhalation excludes radon)

0 Radio-Nuclide	Ground risk	Ground fract.	Inhalation risk	Inhalation fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	Soil risk	Soil fract.
Cs-137	4.809E-07	0.1568	2.438E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.494E-09	0.0005
H-3	0.000E+00	0.0000	5.822E-10	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.752E-12	0.0000
Pb-210	8.937E-10	0.0003	6.694E-09	0.0022	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.375E-07	0.0448
Ra-226	1.503E-06	0.4899	6.153E-09	0.0020	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.056E-08	0.0067
Ra-228	8.208E-07	0.2676	9.522E-09	0.0031	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.724E-08	0.0187
Th-230	1.765E-10	0.0001	7.400E-09	0.0024	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.754E-09	0.0015
U-234	5.496E-11	0.0000	6.051E-09	0.0020	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.815E-09	0.0012
Total	2.805E-06	0.9146	3.643E-08	0.0119	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.254E-07	0.0735

0

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 0.000E+00 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All pathways risk	All pathways fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.824E-07	0.1573
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.880E-10	0.0002
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.451E-07	0.0473
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.529E-06	0.4986
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.876E-07	0.2894
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.233E-08	0.0040
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.920E-09	0.0032
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.067E-06	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 1.000E+00 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Cs-137	2.125E-01	0.000E+00	0.000E+00	0.000E+00	3.900E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.900E+01
H-3	4.497E-01	0.000E+00	0.000E+00	0.000E+00	2.626E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.626E-02
Pb-210	2.172E-01	0.000E+00	0.000E+00	0.000E+00	3.986E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.986E+01
Ra-226	2.175E-01	0.000E+00	0.000E+00	0.000E+00	3.993E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.993E+01
Ra-228	1.928E-01	0.000E+00	0.000E+00	0.000E+00	3.539E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.539E+01
Th-228	6.206E-02	0.000E+00	0.000E+00	0.000E+00	1.139E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.139E+01
Th-230	2.175E-01	0.000E+00	0.000E+00	0.000E+00	3.992E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.992E+01
U-234	2.175E-01	0.000E+00	0.000E+00	0.000E+00	3.991E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.991E+01

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 1.000E+00 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+00 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	4.696E-07	0.1406	2.380E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.459E-09	0.0004
H-3	0.000E+00	0.0000	3.827E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.781E-15	0.0000
Pb-210	8.922E-10	0.0003	6.680E-09	0.0020	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.372E-07	0.0411
Ra-226	1.502E-06	0.4499	6.150E-09	0.0018	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.055E-08	0.0062
Ra-228	7.274E-07	0.2179	8.436E-09	0.0025	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.071E-08	0.0152
Th-228	3.716E-07	0.1113	8.939E-09	0.0027	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.812E-09	0.0014
Th-230	1.765E-10	0.0001	7.396E-09	0.0022	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.751E-09	0.0014
U-234	5.493E-11	0.0000	6.045E-09	0.0018	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.811E-09	0.0011
Total	3.072E-06	0.9200	4.367E-08	0.0131	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.233E-07	0.0669

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+00 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All Pathways** risk	All Pathways** fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.711E-07	0.1411
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.865E-13	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.448E-07	0.0434
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.529E-06	0.4579
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.866E-07	0.2356
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.853E-07	0.1154
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.232E-08	0.0037
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.911E-09	0.0030
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.339E-06	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

0

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 1.000E+00 years

0

Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+00 years

0 Water Independent Pathways (Inhalation excludes radon)

0 Radio-Nuclide	Ground risk	Ground fract.	Inhalation risk	Inhalation fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	Soil risk	Soil fract.
Cs-137	4.696E-07	0.1406	2.380E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.459E-09	0.0004
H-3	0.000E+00	0.0000	3.827E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.781E-15	0.0000
Pb-210	8.649E-10	0.0003	6.475E-09	0.0019	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.330E-07	0.0398
Ra-226	1.502E-06	0.4497	6.352E-09	0.0019	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.475E-08	0.0074
Ra-228	1.099E-06	0.3291	1.738E-08	0.0052	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.552E-08	0.0166
Th-230	8.271E-10	0.0002	7.398E-09	0.0022	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.761E-09	0.0014
U-234	5.494E-11	0.0000	6.045E-09	0.0018	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.811E-09	0.0011
Total	3.072E-06	0.9200	4.367E-08	0.0131	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.233E-07	0.0669

0

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+00 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All pathways risk	All pathways fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.711E-07	0.1411
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.865E-13	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.404E-07	0.0420
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.533E-06	0.4590
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.172E-06	0.3510
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.299E-08	0.0039
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.912E-09	0.0030
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.339E-06	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 2.000E+00 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Cs-137	2.074E-01	0.000E+00	0.000E+00	0.000E+00	3.807E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.807E+01
H-3	2.956E-04	0.000E+00	0.000E+00	0.000E+00	1.726E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.726E-05
Pb-210	2.168E-01	0.000E+00	0.000E+00	0.000E+00	3.978E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.978E+01
Ra-226	2.174E-01	0.000E+00	0.000E+00	0.000E+00	3.991E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.991E+01
Ra-228	1.708E-01	0.000E+00	0.000E+00	0.000E+00	3.136E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.136E+01
Th-228	9.817E-02	0.000E+00	0.000E+00	0.000E+00	1.802E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.802E+01
Th-230	2.174E-01	0.000E+00	0.000E+00	0.000E+00	3.990E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.990E+01
U-234	2.173E-01	0.000E+00	0.000E+00	0.000E+00	3.987E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.987E+01

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 2.000E+00 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 2.000E+00 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	4.586E-07	0.1325	2.323E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.424E-09	0.0004
H-3	0.000E+00	0.0000	2.516E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.485E-18	0.0000
Pb-210	8.907E-10	0.0003	6.666E-09	0.0019	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.370E-07	0.0396
Ra-226	1.502E-06	0.4338	6.147E-09	0.0018	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.054E-08	0.0059
Ra-228	6.447E-07	0.1862	7.474E-09	0.0022	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.493E-08	0.0130
Th-228	5.879E-07	0.1698	1.414E-08	0.0041	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.611E-09	0.0022
Th-230	1.765E-10	0.0001	7.392E-09	0.0021	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.748E-09	0.0014
U-234	5.491E-11	0.0000	6.040E-09	0.0017	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.808E-09	0.0011
Total	3.194E-06	0.9226	4.788E-08	0.0138	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.200E-07	0.0636

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 2.000E+00 years

Water Dependent Pathways

Radio-	Water		Fish		Plant		Meat		Milk		All Pathways**	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.600E-07	0.1329
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.540E-16	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.445E-07	0.0417
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.529E-06	0.4415
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.971E-07	0.2013
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.097E-07	0.1761
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.232E-08	0.0036
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.903E-09	0.0029
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.462E-06	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

0

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 2.000E+00 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 2.000E+00 years

0 Water Independent Pathways (Inhalation excludes radon)

0 Radio-Nuclide	Ground risk	Ground fract.	Inhalation risk	Inhalation fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	Soil risk	Soil fract.
Cs-137	4.586E-07	0.1325	2.323E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.424E-09	0.0004
H-3	0.000E+00	0.0000	2.516E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.485E-18	0.0000
Pb-210	8.369E-10	0.0002	6.264E-09	0.0018	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.287E-07	0.0372
Ra-226	1.501E-06	0.4334	6.544E-09	0.0019	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.879E-08	0.0083
Ra-228	1.233E-06	0.3560	2.161E-08	0.0062	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.254E-08	0.0152
Th-230	1.477E-09	0.0004	7.397E-09	0.0021	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.770E-09	0.0014
U-234	5.492E-11	0.0000	6.040E-09	0.0017	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.808E-09	0.0011
Total	3.194E-06	0.9226	4.788E-08	0.0138	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.200E-07	0.0636

0

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 2.000E+00 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All pathways risk	All pathways fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.600E-07	0.1329
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.540E-16	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.358E-07	0.0392
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.536E-06	0.4436
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.307E-06	0.3774
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.364E-08	0.0039
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.903E-09	0.0029
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.462E-06	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Intrisk : Residual Dose and Risk Assessment for Pit C Under Construction Worker Scenario
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Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 2.400E+00 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Cs-137	2.055E-01	0.000E+00	0.000E+00	0.000E+00	3.771E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.771E+01
H-3	1.577E-05	0.000E+00	0.000E+00	0.000E+00	9.207E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	9.207E-07
Pb-210	2.166E-01	0.000E+00	0.000E+00	0.000E+00	3.975E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.975E+01
Ra-226	2.174E-01	0.000E+00	0.000E+00	0.000E+00	3.990E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.990E+01
Ra-228	1.628E-01	0.000E+00	0.000E+00	0.000E+00	2.987E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.987E+01
Th-228	1.074E-01	0.000E+00	0.000E+00	0.000E+00	1.971E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.971E+01
Th-230	2.174E-01	0.000E+00	0.000E+00	0.000E+00	3.989E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.989E+01
U-234	2.172E-01	0.000E+00	0.000E+00	0.000E+00	3.986E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.986E+01

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil and water-dependent water, fish, plant, meat, milk pathways

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of Radon and its Decay Products as pCi/yr at t= 2.400E+00 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p) and Fraction of Total Risk at t= 2.400E+00 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	4.543E-07	0.1305	2.301E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.410E-09	0.0004
H-3	0.000E+00	0.0000	1.342E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.326E-19	0.0000
Pb-210	8.901E-10	0.0003	6.661E-09	0.0019	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.369E-07	0.0393
Ra-226	1.502E-06	0.4313	6.146E-09	0.0018	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.054E-08	0.0059
Ra-228	6.143E-07	0.1764	7.121E-09	0.0020	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.281E-08	0.0123
Th-228	6.432E-07	0.1847	1.547E-08	0.0044	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.326E-09	0.0024
Th-230	1.764E-10	0.0001	7.390E-09	0.0021	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.747E-09	0.0014
U-234	5.489E-11	0.0000	6.038E-09	0.0017	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.807E-09	0.0011
Total	3.215E-06	0.9232	4.885E-08	0.0140	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.185E-07	0.0628

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 2.400E+00 years

Water Dependent Pathways

Radio-	Water		Fish		Plant		Meat		Milk		All Pathways**	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.557E-07	0.1309
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.355E-17	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.444E-07	0.0415
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.528E-06	0.4390
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.642E-07	0.1908
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.670E-07	0.1916
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.231E-08	0.0035
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.899E-09	0.0028
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.482E-06	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

0

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 2.400E+00 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 2.400E+00 years

0 Water Independent Pathways (Inhalation excludes radon)

0 Radio-Nuclide	Ground risk	Ground fract.	Inhalation risk	Inhalation fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	Soil risk	Soil fract.
Cs-137	4.543E-07	0.1305	2.301E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.410E-09	0.0004
H-3	0.000E+00	0.0000	1.342E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.326E-19	0.0000
Pb-210	8.260E-10	0.0002	6.181E-09	0.0018	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.270E-07	0.0365
Ra-226	1.500E-06	0.4309	6.619E-09	0.0019	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.037E-08	0.0087
Ra-228	1.257E-06	0.3611	2.259E-08	0.0065	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.113E-08	0.0147
Th-230	1.737E-09	0.0005	7.396E-09	0.0021	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.774E-09	0.0014
U-234	5.492E-11	0.0000	6.038E-09	0.0017	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.807E-09	0.0011
Total	3.215E-06	0.9232	4.885E-08	0.0140	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.185E-07	0.0628

0

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 2.400E+00 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All pathways risk	All pathways fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.557E-07	0.1309
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.355E-17	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.340E-07	0.0385
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.537E-06	0.4415
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.331E-06	0.3823
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.391E-08	0.0040
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.899E-09	0.0028
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.482E-06	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 3.000E+00 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Cs-137	2.025E-01	0.000E+00	0.000E+00	0.000E+00	3.717E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.717E+01
H-3	1.943E-07	0.000E+00	0.000E+00	0.000E+00	1.134E-08	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.134E-08
Pb-210	2.163E-01	0.000E+00	0.000E+00	0.000E+00	3.970E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.970E+01
Ra-226	2.173E-01	0.000E+00	0.000E+00	0.000E+00	3.989E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.989E+01
Ra-228	1.514E-01	0.000E+00	0.000E+00	0.000E+00	2.778E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.778E+01
Th-228	1.170E-01	0.000E+00	0.000E+00	0.000E+00	2.148E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.148E+01
Th-230	2.173E-01	0.000E+00	0.000E+00	0.000E+00	3.988E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.988E+01
U-234	2.171E-01	0.000E+00	0.000E+00	0.000E+00	3.984E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.984E+01

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 3.000E+00 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+00 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	4.478E-07	0.1284	2.268E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.390E-09	0.0004
H-3	0.000E+00	0.0000	1.653E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.634E-21	0.0000
Pb-210	8.893E-10	0.0003	6.653E-09	0.0019	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.367E-07	0.0392
Ra-226	1.501E-06	0.4304	6.144E-09	0.0018	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.053E-08	0.0059
Ra-228	5.713E-07	0.1638	6.622E-09	0.0019	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.981E-08	0.0114
Th-228	7.010E-07	0.2009	1.685E-08	0.0048	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.072E-09	0.0026
Th-230	1.764E-10	0.0001	7.388E-09	0.0021	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.746E-09	0.0014
U-234	5.488E-11	0.0000	6.034E-09	0.0017	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.805E-09	0.0011
Total	3.223E-06	0.9238	4.972E-08	0.0143	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.160E-07	0.0619

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+00 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All Pathways** risk	All Pathways** fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.493E-07	0.1288
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.670E-19	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.442E-07	0.0413
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.528E-06	0.4381
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.177E-07	0.1771
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.269E-07	0.2084
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.231E-08	0.0035
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.894E-09	0.0028
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.489E-06	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

0

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 3.000E+00 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+00 years

0 Water Independent Pathways (Inhalation excludes radon)

0

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	4.478E-07	0.1284	2.268E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.390E-09	0.0004
H-3	0.000E+00	0.0000	1.653E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.634E-21	0.0000
Pb-210	8.099E-10	0.0002	6.059E-09	0.0017	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.245E-07	0.0357
Ra-226	1.500E-06	0.4299	6.729E-09	0.0019	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.269E-08	0.0094
Ra-228	1.272E-06	0.3647	2.348E-08	0.0067	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.888E-08	0.0140
Th-230	2.126E-09	0.0006	7.396E-09	0.0021	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.780E-09	0.0014
U-234	5.491E-11	0.0000	6.035E-09	0.0017	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.805E-09	0.0011
Total	3.223E-06	0.9238	4.972E-08	0.0143	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.160E-07	0.0619

0

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+00 years

Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.493E-07	0.1288
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.670E-19	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.314E-07	0.0377
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.539E-06	0.4412
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.345E-06	0.3855
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.430E-08	0.0041
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.894E-09	0.0028
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.489E-06	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 1.000E+01 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Cs-137	1.712E-01	0.000E+00	0.000E+00	0.000E+00	3.142E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.142E+01
H-3	1.030E-29	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	2.136E-01	0.000E+00	0.000E+00	0.000E+00	3.920E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.920E+01
Ra-226	2.166E-01	0.000E+00	0.000E+00	0.000E+00	3.974E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.974E+01
Ra-228	6.487E-02	0.000E+00	0.000E+00	0.000E+00	1.191E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.191E+01
Th-228	8.857E-02	0.000E+00	0.000E+00	0.000E+00	1.626E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.626E+01
Th-230	2.164E-01	0.000E+00	0.000E+00	0.000E+00	3.972E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.972E+01
U-234	2.157E-01	0.000E+00	0.000E+00	0.000E+00	3.959E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.959E+01

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 1.000E+01 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+01 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	3.793E-07	0.1314	1.918E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.175E-09	0.0004
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	8.802E-10	0.0003	6.569E-09	0.0023	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.350E-07	0.0468
Ra-226	1.499E-06	0.5192	6.122E-09	0.0021	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.046E-08	0.0071
Ra-228	2.453E-07	0.0850	2.838E-09	0.0010	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.706E-08	0.0059
Th-228	5.314E-07	0.1841	1.276E-08	0.0044	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.867E-09	0.0024
Th-230	1.762E-10	0.0001	7.358E-09	0.0025	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.727E-09	0.0016
U-234	5.468E-11	0.0000	5.997E-09	0.0021	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.781E-09	0.0013
Total	2.656E-06	0.9201	4.166E-08	0.0144	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.890E-07	0.0655

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+01 years

Water Dependent Pathways

Radio-	Water		Fish		Plant		Meat		Milk		All Pathways**	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.805E-07	0.1318
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.424E-07	0.0493
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.525E-06	0.5284
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.652E-07	0.0919
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.510E-07	0.1909
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.226E-08	0.0042
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.832E-09	0.0034
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.887E-06	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

0

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 1.000E+01 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+01 years

0 Water Independent Pathways (Inhalation excludes radon)

0 Radio-Nuclide	Ground risk	Ground fract.	Inhalation risk	Inhalation fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	Soil risk	Soil fract.
Cs-137	3.793E-07	0.1314	1.918E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.175E-09	0.0004
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	6.436E-10	0.0002	4.803E-09	0.0017	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.869E-08	0.0342
Ra-226	1.493E-06	0.5171	7.858E-09	0.0027	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.657E-08	0.0196
Ra-228	7.767E-07	0.2691	1.559E-08	0.0054	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.393E-08	0.0083
Th-230	6.654E-09	0.0023	7.388E-09	0.0026	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.898E-09	0.0017
U-234	5.499E-11	0.0000	5.997E-09	0.0021	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.781E-09	0.0013
Total	2.656E-06	0.9201	4.166E-08	0.0144	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.890E-07	0.0655

0

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+01 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All pathways risk	All pathways fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.805E-07	0.1318
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.041E-07	0.0361
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.557E-06	0.5394
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.162E-07	0.2828
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.894E-08	0.0066
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.833E-09	0.0034
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.887E-06	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Intrisk : Residual Dose and Risk Assessment for Pit C Under Construction Worker Scenario
File : C:\USERS\MRAHMAN\DOCUMENTS\OLD RESRAD FILES\PIT C-CONSTRUCTION WORKER.RAD

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 3.000E+01 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Cs-137	1.059E-01	0.000E+00	0.000E+00	0.000E+00	1.944E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.944E+01
H-3	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	2.078E-01	0.000E+00	0.000E+00	0.000E+00	3.814E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.814E+01
Ra-226	2.144E-01	0.000E+00	0.000E+00	0.000E+00	3.934E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.934E+01
Ra-228	5.762E-03	0.000E+00	0.000E+00	0.000E+00	1.058E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.058E+00
Th-228	8.632E-03	0.000E+00	0.000E+00	0.000E+00	1.584E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.584E+00
Th-230	2.140E-01	0.000E+00	0.000E+00	0.000E+00	3.928E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.928E+01
U-234	2.119E-01	0.000E+00	0.000E+00	0.000E+00	3.888E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.888E+01

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 3.000E+01 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+01 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	2.360E-07	0.1185	1.187E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.272E-10	0.0004
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	8.625E-10	0.0004	6.391E-09	0.0032	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.313E-07	0.0659
Ra-226	1.491E-06	0.7485	6.060E-09	0.0030	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.025E-08	0.0102
Ra-228	2.190E-08	0.0110	2.521E-10	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.515E-09	0.0008
Th-228	5.203E-08	0.0261	1.243E-09	0.0006	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.692E-10	0.0003
Th-230	1.755E-10	0.0001	7.276E-09	0.0037	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.674E-09	0.0023
U-234	5.412E-11	0.0000	5.890E-09	0.0030	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.713E-09	0.0019
Total	1.802E-06	0.9046	2.712E-08	0.0136	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.629E-07	0.0818

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+01 years

Water Dependent Pathways

Radio-	Water		Fish		Plant		Meat		Milk		All Pathways**	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.367E-07	0.1188
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.386E-07	0.0696
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.517E-06	0.7617
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.367E-08	0.0119
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.395E-08	0.0271
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.213E-08	0.0061
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.657E-09	0.0048
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.992E-06	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

0

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 3.000E+01 years

0

Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+01 years

0 Water Independent Pathways (Inhalation excludes radon)

0 Radio-Nuclide	Ground risk	Ground fract.	Inhalation risk	Inhalation fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	Soil risk	Soil fract.
Cs-137	2.360E-07	0.1185	1.187E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.272E-10	0.0004
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	3.338E-10	0.0002	2.473E-09	0.0012	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.081E-08	0.0255
Ra-226	1.472E-06	0.7391	9.871E-09	0.0050	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.989E-08	0.0501
Ra-228	7.393E-08	0.0371	1.495E-09	0.0008	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.185E-09	0.0011
Th-230	1.941E-08	0.0097	7.381E-09	0.0037	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.538E-09	0.0028
U-234	5.676E-11	0.0000	5.892E-09	0.0030	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.715E-09	0.0019
Total	1.802E-06	0.9046	2.712E-08	0.0136	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.629E-07	0.0818

0

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+01 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All pathways risk	All pathways fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.367E-07	0.1188
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.362E-08	0.0269
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.582E-06	0.7942
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.761E-08	0.0390
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.233E-08	0.0162
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.663E-09	0.0049
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.992E-06	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 1.000E+02 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Cs-137	1.973E-02	0.000E+00	0.000E+00	0.000E+00	3.621E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.621E+00
H-3	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	1.970E-01	0.000E+00	0.000E+00	0.000E+00	3.616E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.616E+01
Ra-226	2.068E-01	0.000E+00	0.000E+00	0.000E+00	3.795E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.795E+01
Ra-228	1.203E-06	0.000E+00	0.000E+00	0.000E+00	2.208E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.208E-04
Th-228	1.803E-06	0.000E+00	0.000E+00	0.000E+00	3.310E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.310E-04
Th-230	2.056E-01	0.000E+00	0.000E+00	0.000E+00	3.773E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.773E+01
U-234	1.988E-01	0.000E+00	0.000E+00	0.000E+00	3.649E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.649E+01

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 1.000E+02 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+02 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	4.482E-08	0.0266	2.210E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.354E-10	0.0001
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	8.388E-10	0.0005	6.060E-09	0.0036	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.245E-07	0.0738
Ra-226	1.464E-06	0.8681	5.846E-09	0.0035	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.953E-08	0.0116
Ra-228	4.656E-12	0.0000	5.263E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.164E-13	0.0000
Th-228	1.105E-11	0.0000	2.597E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.398E-13	0.0000
Th-230	1.732E-10	0.0001	6.990E-09	0.0041	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.490E-09	0.0027
U-234	5.220E-11	0.0000	5.527E-09	0.0033	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.485E-09	0.0021
Total	1.510E-06	0.8953	2.443E-08	0.0145	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.522E-07	0.0902

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+02 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All Pathways** risk	All Pathways** fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.495E-08	0.0267
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.314E-07	0.0779
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.489E-06	0.8831
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.025E-12	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.145E-11	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.165E-08	0.0069
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.064E-09	0.0054
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.686E-06	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

0

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 1.000E+02 years

0

Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+02 years

0 Water Independent Pathways (Inhalation excludes radon)

0 Radio-Nuclide	Ground risk	Ground fract.	Inhalation risk	Inhalation fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	Soil risk	Soil fract.
Cs-137	4.482E-08	0.0266	2.210E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.354E-10	0.0001
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	3.351E-11	0.0000	2.421E-10	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.975E-09	0.0030
Ra-226	1.403E-06	0.8318	1.124E-08	0.0067	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.345E-07	0.0798
Ra-228	1.571E-11	0.0000	3.124E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.562E-13	0.0000
Th-230	6.205E-08	0.0368	7.412E-09	0.0044	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.035E-09	0.0054
U-234	8.007E-11	0.0000	5.534E-09	0.0033	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.491E-09	0.0021
Total	1.510E-06	0.8953	2.443E-08	0.0145	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.522E-07	0.0902

0

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+02 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All pathways risk	All pathways fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.495E-08	0.0267
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.250E-09	0.0031
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.548E-06	0.9183
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.648E-11	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.850E-08	0.0466
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.104E-09	0.0054
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.686E-06	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Intrisk : Residual Dose and Risk Assessment for Pit C Under Construction Worker Scenario
File : C:\USERS\MRAHMAN\DOCUMENTS\OLD RESRAD FILES\PIT C-CONSTRUCTION WORKER.RAD

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 3.000E+02 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Cs-137	1.613E-04	0.000E+00	0.000E+00	0.000E+00	2.961E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.961E-02
H-3	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	1.764E-01	0.000E+00	0.000E+00	0.000E+00	3.238E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.238E+01
Ra-226	1.855E-01	0.000E+00	0.000E+00	0.000E+00	3.405E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.405E+01
Ra-228	3.655E-17	0.000E+00	0.000E+00	0.000E+00	6.708E-15	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.708E-15
Th-228	5.480E-17	0.000E+00	0.000E+00	0.000E+00	1.006E-14	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.006E-14
Th-230	1.824E-01	0.000E+00	0.000E+00	0.000E+00	3.348E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.348E+01
U-234	1.650E-01	0.000E+00	0.000E+00	0.000E+00	3.029E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.029E+01

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 3.000E+02 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+02 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	3.878E-10	0.0003	1.807E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.107E-12	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	8.102E-10	0.0005	5.427E-09	0.0035	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.115E-07	0.0723
Ra-226	1.383E-06	0.8970	5.244E-09	0.0034	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.752E-08	0.0114
Ra-228	1.492E-22	0.0000	1.599E-24	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.612E-24	0.0000
Th-228	3.526E-22	0.0000	7.892E-24	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.248E-24	0.0000
Th-230	1.664E-10	0.0001	6.203E-09	0.0040	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.985E-09	0.0026
U-234	4.700E-11	0.0000	4.588E-09	0.0030	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.893E-09	0.0019
Total	1.384E-06	0.8979	2.146E-08	0.0139	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.359E-07	0.0882

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+02 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All Pathways** risk	All Pathways** fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.889E-10	0.0003
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.177E-07	0.0764
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.405E-06	0.9118
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.604E-22	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.647E-22	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.035E-08	0.0067
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.528E-09	0.0049
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.541E-06	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

0

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 3.000E+02 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+02 years

0 Water Independent Pathways (Inhalation excludes radon)

0 Radio-Nuclide	Ground risk	Ground fract.	Inhalation risk	Inhalation fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	Soil risk	Soil fract.
Cs-137	3.878E-10	0.0003	1.807E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.107E-12	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	4.704E-14	0.0000	3.151E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.474E-12	0.0000
Ra-226	1.216E-06	0.7890	9.443E-09	0.0061	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.147E-07	0.0744
Ra-228	5.018E-22	0.0000	9.491E-24	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.386E-23	0.0000
Th-230	1.672E-07	0.1085	7.413E-09	0.0048	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.826E-08	0.0118
U-234	2.697E-10	0.0002	4.606E-09	0.0030	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.920E-09	0.0019
Total	1.384E-06	0.8979	2.146E-08	0.0139	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.359E-07	0.0882

0

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+02 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All pathways risk	All pathways fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.889E-10	0.0003
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.836E-12	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.340E-06	0.8696
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.251E-22	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.929E-07	0.1251
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.796E-09	0.0051
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.541E-06	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Intrisk : Residual Dose and Risk Assessment for Pit C Under Construction Worker Scenario
File : C:\USERS\MRAHMAN\DOCUMENTS\OLD RESRAD FILES\PIT C-CONSTRUCTION WORKER.RAD

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 1.000E+03 years

Radio-	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total
Nuclide	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	Ingestion*
Cs-137	7.367E-12	0.000E+00	0.000E+00	0.000E+00	1.352E-09	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.352E-09
H-3	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	1.109E-01	0.000E+00	0.000E+00	0.000E+00	2.035E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.035E+01
Ra-226	1.165E-01	0.000E+00	0.000E+00	0.000E+00	2.138E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.138E+01
Ra-228	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-228	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	1.109E-01	0.000E+00	0.000E+00	0.000E+00	2.036E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.036E+01
U-234	7.951E-02	0.000E+00	0.000E+00	0.000E+00	1.459E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.459E+01

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 1.000E+03 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+03 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	2.204E-17	0.0000	8.251E-22	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.057E-20	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	6.968E-10	0.0006	3.410E-09	0.0029	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.006E-08	0.0604
Ra-226	1.061E-06	0.9151	3.294E-09	0.0028	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.101E-08	0.0095
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	1.396E-10	0.0001	3.772E-09	0.0033	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.423E-09	0.0021
U-234	3.168E-11	0.0000	2.210E-09	0.0019	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.394E-09	0.0012
Total	1.062E-06	0.9159	1.269E-08	0.0109	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.488E-08	0.0732

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+03 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All Pathways** risk	All Pathways** fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.209E-17	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.417E-08	0.0640
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.076E-06	0.9275
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.335E-09	0.0055
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.636E-09	0.0031
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.160E-06	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

0

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 1.000E+03 years

0

Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+03 years

Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground risk	Ground fract.	Inhalation risk	Inhalation fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	Soil risk	Soil fract.
Cs-137	2.204E-17	0.0000	8.251E-22	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.057E-20	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	4.733E-24	0.0000	2.316E-23	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.759E-22	0.0000
Ra-226	6.963E-07	0.6004	4.424E-09	0.0038	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.374E-08	0.0463
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	3.643E-07	0.3141	6.014E-09	0.0052	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.962E-08	0.0255
U-234	1.592E-09	0.0014	2.249E-09	0.0019	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.526E-09	0.0013
Total	1.062E-06	0.9159	1.269E-08	0.0109	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.488E-08	0.0732

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+03 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All pathways risk	All pathways fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.209E-17	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.037E-22	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.544E-07	0.6505
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.999E-07	0.3448
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.367E-09	0.0046
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.160E-06	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

ATTACHMENT G-5

DOSE AND RISK CALCULCATION AND

OUTPUT DOSE AND RISK ASSESSMENTS SUMMARY REPORTS

FOR DISPOSAL PIT A/B UNDER FUTURE PARK WORKER

Table G-5-1: Results of Residual Dose Assessment for Disposal Pit A/B under Future Park Worker Scenario

Nuclide	EPC (pCi/g)	Dose to Source Ratio ((mrem/yr)/(pCi/g))									
		T = 0 Year					T=1000 Years				
		Ground	Inhalation	Soil	Water	All Pathways	Ground	Inhalation	Soil	Water	All Pathways
Cs-137	0.39	4.4E-01	4.2E-09	2.9E-04	0.0E+00	4.4E-01	2.0E-11	1.4E-19	9.8E-15	0.0E+00	2.0E-11
H-3	8.87	0.0E+00	1.7E-06	5.1E-08	9.7E-06	1.1E-05	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Th-230	0.266	4.7E-04	4.4E-05	3.2E-03	0.0E+00	3.7E-03	2.9E-02	2.2E-05	2.3E-03	5.4E-01	5.7E-01

Nuclide	Dose (mrem/yr)									
	T = 0 Year					T=1000 Years				
	Ground	Inhalation	Soil	Water	All Pathways	Ground	Inhalation	Soil	Water	All Pathways
Cs-137	1.7E-01	1.6E-09	1.1E-04	0.0E+00	1.7E-01	7.7E-12	5.6E-20	3.8E-15	0.0E+00	7.7E-12
H-3	0.0E+00	1.5E-05	4.5E-07	8.6E-05	1.0E-04	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Th-230	1.3E-04	1.2E-05	8.5E-04	0.0E+00	9.9E-04	7.6E-03	5.9E-06	6.0E-04	1.4E-01	1.5E-01
	Cumulative Dose				**1.7E-01**	**Cumulative Dose**				**1.51E-01**

Table G-5-2: Results of Residual Risk Assessment for Disposal Pit A/B under Future Park Worker Scenario

Nuclide	EPC (pCi/g)	Risk to Source Ratio (1/(pCi/g))									
		T = 0 Year					T=1000 Years				
		Ground	Inhalation	Soil	Water	All Pathways	Ground	Inhalation	Soil	Water	All Pathways
Cs-137	0.39	8.2E-06	3.7E-13	5.5E-09	0.0E+00	8.2E-06	3.7E-16	1.3E-23	1.8E-19	0.0E+00	3.7E-16
H-3	8.87	0.0E+00	4.1E-09	2.1E-11	0.0E+00	4.1E-09	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Th-230	0.266	3.0E-09	1.1E-10	1.7E-08	0.0E+00	2.1E-08	5.4E-07	6.0E-11	1.6E-08	4.7E-06	5.3E-06

Nuclide	Risk (unitless)									
	T = 0 Year					T=1000 Years				
	Ground	Inhalation	Soil	Water	All Pathways	Ground	Inhalation	Soil	Water	All Pathways
Cs-137	3.2E-06	1.5E-13	2.1E-09	0.0E+00	3.2E-06	1.5E-16	4.9E-24	7.2E-20	0.0E+00	1.5E-16
H-3	0.0E+00	3.7E-08	1.9E-10	0.0E+00	3.7E-08	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Th-230	8.0E-10	3.0E-11	4.6E-09	0.0E+00	5.5E-09	1.4E-07	1.6E-11	4.3E-09	1.3E-06	1.4E-06
				Cumulative Risk	**3E-06**				**Cumulative Risk**	**1E-06**

Summary : Residual Dose and Risk Assessment Under Future Park Worker Scenario
File : C:\USERS\MRAHMAN\DOCUMENTS\OLD RESRAD FILES\PIT AB-SITE PARK WORKER.RAD

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Dose Conversion Factor (and Related) Parameter Summary
Dose Library: FGR 12 & FGR 11

0

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation (mrem/yr)/(pCi/g)			
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1(1)
A-1	Ba-137m (Source: FGR 12)	3.606E+00	3.606E+00	DCF1(2)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1(3)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1(4)
A-1	Cs-137 (Source: FGR 12)	7.510E-04	7.510E-04	DCF1(5)
A-1	H-3 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1(6)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1(7)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1(8)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1(9)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1(10)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1(11)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1(12)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1(13)
A-1	Th-230 (Source: FGR 12)	1.209E-03	1.209E-03	DCF1(14)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1(15)
B-1	Dose conversion factors for inhalation mrem/pCi:			
B-1	Cs-137+D	3.190E-05	3.190E-05	DCF2(1)
B-1	H-3	6.400E-08	6.400E-08	DCF2(2)
B-1	Pb-210+D	2.320E-02	1.360E-02	DCF2(3)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2(4)
B-1	Th-230	3.260E-01	3.260E-01	DCF2(5)
D-1	Dose conversion factors for ingestion mrem/pCi:			
D-1	Cs-137+D	5.000E-05	5.000E-05	DCF3(1)
D-1	H-3	6.400E-08	6.400E-08	DCF3(2)
D-1	Pb-210+D	7.276E-03	5.370E-03	DCF3(3)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3(4)
D-1	Th-230	5.480E-04	5.480E-04	DCF3(5)
D-34	Food transfer factors:			
D-34	Cs-137+D plant/soil concentration ratio dimensionless	4.000E-02	4.000E-02	RTF(11)
D-34	Cs-137+D beef/livestock-intake ratio (pCi/kg)/(pCi/d)	3.000E-02	3.000E-02	RTF(12)
D-34	Cs-137+D milk/livestock-intake ratio (pCi/L)/(pCi/d)	8.000E-03	8.000E-03	RTF(13)
D-34				
D-34	H-3 plant/soil concentration ratio dimensionless	4.800E+00	4.800E+00	RTF(21)
D-34	H-3 beef/livestock-intake ratio (pCi/kg)/(pCi/d)	1.200E-02	1.200E-02	RTF(22)
D-34	H-3 milk/livestock-intake ratio (pCi/L)/(pCi/d)	1.000E-02	1.000E-02	RTF(23)
D-34				
D-34	Pb-210+D plant/soil concentration ratio dimensionless	1.000E-02	1.000E-02	RTF(31)

```
D-34  Pb-210+D   beef/livestock-intake ratio (pCi/kg)/(pCi/d)    8.000E-04  8.000E-04  RTF(  32)
D-34  Pb-210+D   milk/livestock-intake ratio (pCi/L)/(pCi/d)     3.000E-04  3.000E-04  RTF(  33)
D-34
D-34  Ra-226+D   plant/soil concentration ratio dimensionless    4.000E-02  4.000E-02  RTF(  41)
D-34  Ra-226+D   beef/livestock-intake ratio (pCi/kg)/(pCi/d)    1.000E-03  1.000E-03  RTF(  42)
D-34  Ra-226+D   milk/livestock-intake ratio (pCi/L)/(pCi/d)     1.000E-03  1.000E-03  RTF(  43)
D-34
```

Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: FGR 12 & FGR 11

Menu		Parameter	Current Value#	Base Case*	Parameter Name
D-34	Th-230	plant/soil concentration ratio dimensionless	1.000E-03	1.000E-03	RTF(51)
D-34	Th-230	beef/livestock-intake ratio (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(52)
D-34	Th-230	milk/livestock-intake ratio (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(53)
D-5	Bioaccumulation factors fresh water L/kg:				
D-5	Cs-137+D	fish	2.000E+03	2.000E+03	BIOFAC(11)
D-5	Cs-137+D	crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(12)
D-5					
D-5	H-3	fish	1.000E+00	1.000E+00	BIOFAC(21)
D-5	H-3	crustacea and mollusks	1.000E+00	1.000E+00	BIOFAC(22)
D-5					
D-5	Pb-210+D	fish	3.000E+02	3.000E+02	BIOFAC(31)
D-5	Pb-210+D	crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(32)
D-5					
D-5	Ra-226+D	fish	5.000E+01	5.000E+01	BIOFAC(41)
D-5	Ra-226+D	crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(42)
D-5					
D-5	Th-230	fish	1.000E+02	1.000E+02	BIOFAC(51)
D-5	Th-230	crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(52)

#For DCF1(xxx) only factors are for infinite depth & area. See ETFG table in Ground Pathway of Detailed Report.
*Base Case means Default.Lib w/o Associate Nuclide contributions.

Site-Specific Parameter Summary

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	2.160E+03	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E-01	2.000E+00	---	THICK0
R011	Fraction of contamination that is submerged	0.000E+00	0.000E+00	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	4.650E+01	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	2.500E+01	3.000E+01	---	BRDL
R011	Time since placement of material (yr)	0.000E+00	0.000E+00	---	TI
R011	Times for calculations (yr)	1.000E+00	1.000E+00	---	T(2)
R011	Times for calculations (yr)	2.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	3.000E+00	1.000E+01	---	T(4)
R011	Times for calculations (yr)	1.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	3.000E+01	1.000E+02	---	T(6)
R011	Times for calculations (yr)	1.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	3.000E+02	1.000E+03	---	T(8)
R011	Times for calculations (yr)	1.000E+03	0.000E+00	---	T(9)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): Cs-137	1.000E+00	0.000E+00	---	S1(1)
R012	Initial principal radionuclide (pCi/g): H-3	1.000E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Th-230	1.000E+00	0.000E+00	---	S1(5)
R012	Concentration in groundwater (pCi/L): Cs-137	not used	0.000E+00	---	W1(1)
R012	Concentration in groundwater (pCi/L): H-3	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Th-230	not used	0.000E+00	---	W1(5)
R013	Cover depth (m)	0.000E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)	not used	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	1.280E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	6.000E-05	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	3.700E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	6.000E-02	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	2.900E+01	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	7.750E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	3.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	6.600E+00	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	7.000E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	7.500E-01	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	0.000E+00	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	1.300E+07	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	1.000E-03	1.000E-03	---	EPS

R014	Density of saturated zone (g/cm**3)	1.500E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	3.700E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	1.750E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	2.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	2.900E+02	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	1.100E-02	2.000E-02	---	HGWT
R014	Saturated zone b parameter	not used	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	0.000E+00	1.000E-03	---	VWT

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R014	Well pump intake depth (m below water table)	3.000E+00	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	ND	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	not used	2.500E+02	---	UW
R015	Number of unsaturated zone strata	1	1	---	NS
R015	Unsat. zone 1 thickness (m)	1.000E+00	4.000E+00	---	H(1)
R015	Unsat. zone 1 soil density (g/cm**3)	1.500E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1 total porosity	3.700E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1 effective porosity	1.750E-01	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1 field capacity	2.000E-01	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1 soil-specific b parameter	7.750E+00	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1 hydraulic conductivity (m/yr)	2.900E+01	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Cs-137				
R016	Contaminated zone (cm**3/g)	1.900E+03	4.600E+03	---	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	1.900E+03	4.600E+03	---	DCNUCU(11)
R016	Saturated zone (cm**3/g)	1.900E+03	4.600E+03	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.934E-04	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for H-3				
R016	Contaminated zone (cm**3/g)	6.000E-02	0.000E+00	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	6.000E-02	0.000E+00	---	DCNUCU(21)
R016	Saturated zone (cm**3/g)	6.000E-02	0.000E+00	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.353E+00	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for Th-230				
R016	Contaminated zone (cm**3/g)	5.800E+03	6.000E+04	---	DCNUCC(5)
R016	Unsaturated zone 1 (cm**3/g)	5.800E+03	6.000E+04	---	DCNUCU(51)
R016	Saturated zone (cm**3/g)	5.800E+03	6.000E+04	---	DCNUCS(5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.616E-04	ALEACH(5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(5)
R016	Distribution coefficients for daughter Pb-210				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCU(31)
R016	Saturated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.354E-03	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)
R016	Distribution coefficients for daughter Ra-226				

R016	Contaminated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCC(4)
R016	Unsaturated zone 1 (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCU(41)
R016	Saturated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCS(4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.335E-02	ALEACH(4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(4)
R017	Inhalation rate (m**3/yr)	8.760E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	7.580E-07	1.000E-04	---	MLINH

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R017	Exposure duration	2.500E+01	3.000E+01	---	ED
R017	Shielding factor inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor external gamma	4.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	0.000E+00	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	1.600E-01	2.500E-01	---	FOTD
R017	Shape factor flag external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m) ring 1:	not used	5.000E+01	---	RAD_SHAPE(1)
R017	Outer annular radius (m) ring 2:	not used	7.071E+01	---	RAD_SHAPE(2)
R017	Outer annular radius (m) ring 3:	not used	0.000E+00	---	RAD_SHAPE(3)
R017	Outer annular radius (m) ring 4:	not used	0.000E+00	---	RAD_SHAPE(4)
R017	Outer annular radius (m) ring 5:	not used	0.000E+00	---	RAD_SHAPE(5)
R017	Outer annular radius (m) ring 6:	not used	0.000E+00	---	RAD_SHAPE(6)
R017	Outer annular radius (m) ring 7:	not used	0.000E+00	---	RAD_SHAPE(7)
R017	Outer annular radius (m) ring 8:	not used	0.000E+00	---	RAD_SHAPE(8)
R017	Outer annular radius (m) ring 9:	not used	0.000E+00	---	RAD_SHAPE(9)
R017	Outer annular radius (m) ring 10:	not used	0.000E+00	---	RAD_SHAPE(10)
R017	Outer annular radius (m) ring 11:	not used	0.000E+00	---	RAD_SHAPE(11)
R017	Outer annular radius (m) ring 12:	not used	0.000E+00	---	RAD_SHAPE(12)
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA(1)
R017	Ring 2	not used	2.732E-01	---	FRACA(2)
R017	Ring 3	not used	0.000E+00	---	FRACA(3)
R017	Ring 4	not used	0.000E+00	---	FRACA(4)
R017	Ring 5	not used	0.000E+00	---	FRACA(5)
R017	Ring 6	not used	0.000E+00	---	FRACA(6)
R017	Ring 7	not used	0.000E+00	---	FRACA(7)
R017	Ring 8	not used	0.000E+00	---	FRACA(8)
R017	Ring 9	not used	0.000E+00	---	FRACA(9)
R017	Ring 10	not used	0.000E+00	---	FRACA(10)
R017	Ring 11	not used	0.000E+00	---	FRACA(11)
R017	Ring 12	not used	0.000E+00	---	FRACA(12)
R018	Fruits vegetables and grain consumption (kg/yr)	not used	1.600E+02	---	DIET(1)
R018	Leafy vegetable consumption (kg/yr)	not used	1.400E+01	---	DIET(2)
R018	Milk consumption (L/yr)	not used	9.200E+01	---	DIET(3)
R018	Meat and poultry consumption (kg/yr)	not used	6.300E+01	---	DIET(4)
R018	Fish consumption (kg/yr)	not used	5.400E+00	---	DIET(5)
R018	Other seafood consumption (kg/yr)	not used	9.000E-01	---	DIET(6)
R018	Soil ingestion rate (g/yr)	3.650E+01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	3.650E+02	5.100E+02	---	DWI

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R018  Contamination fraction of drinking water          1.000E+00  1.000E+00              ---              FDW
R018  Contamination fraction of household water         not used   1.000E+00              ---              FHHW
R018  Contamination fraction of livestock water         not used   1.000E+00              ---              FLW
R018  Contamination fraction of irrigation water        not used   1.000E+00              ---              FIRW
R018  Contamination fraction of aquatic food            not used   5.000E-01              ---              FR9
R018  Contamination fraction of plant food              not used  -1                      ---              FPLANT
R018  Contamination fraction of meat                    not used  -1                      ---              FMEAT
R018  Contamination fraction of milk                    not used  -1                      ---              FMILK
```

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R019	Livestock fodder intake for meat (kg/day)	not used	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	not used	5.500E+01	---	LFI6
R019	Livestock water intake for meat (L/day)	not used	5.000E+01	---	LWI5
R019	Livestock water intake for milk (L/day)	not used	1.600E+02	---	LWI6
R019	Livestock soil intake (kg/day)	not used	5.000E-01	---	LSI
R019	Mass loading for foliar deposition (g/m**3)	not used	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	1.500E-01	1.500E-01	---	DM
R019	Depth of roots (m)	not used	9.000E-01	---	DROOT
R019	Drinking water fraction from ground water	1.000E+00	1.000E+00	---	FGWDW
R019	Household water fraction from ground water	not used	1.000E+00	---	FGWHH
R019	Livestock water fraction from ground water	not used	1.000E+00	---	FGWLW
R019	Irrigation fraction from ground water	not used	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	not used	7.000E-01	---	YV(1)
R19B	Wet weight crop yield for Leafy (kg/m**2)	not used	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	not used	1.100E+00	---	YV(3)
R19B	Growing Season for Non-Leafy (years)	not used	1.700E-01	---	TE(1)
R19B	Growing Season for Leafy (years)	not used	2.500E-01	---	TE(2)
R19B	Growing Season for Fodder (years)	not used	8.000E-02	---	TE(3)
R19B	Translocation Factor for Non-Leafy	not used	1.000E-01	---	TIV(1)
R19B	Translocation Factor for Leafy	not used	1.000E+00	---	TIV(2)
R19B	Translocation Factor for Fodder	not used	1.000E+00	---	TIV(3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RDRY(1)
R19B	Dry Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RDRY(2)
R19B	Dry Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RDRY(3)
R19B	Wet Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RWET(1)
R19B	Wet Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RWET(2)
R19B	Wet Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RWET(3)
R19B	Weathering Removal Constant for Vegetation	not used	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm**3)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (1/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits non-leafy vegetables and grain	1.400E+01	1.400E+01	---	STOR_T(1)

STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA(1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA(2)
TITL	Number of graphical time points	32	---	---	NPTS
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	1	---	---	KYMAX

Summary of Pathway Selections

Pathway	User Selection
1 -- external gamma	active
2 -- inhalation (w/o radon)	active
3 -- plant ingestion	suppressed
4 -- meat ingestion	suppressed
5 -- milk ingestion	suppressed
6 -- aquatic foods	suppressed
7 -- drinking water	active
8 -- soil ingestion	active
9 -- radon	suppressed
Find peak pathway doses	suppressed

Summary : Residual Dose and Risk Assessment Under Future Park Worker Scenario
File : C:\USERS\MRAHMAN\DOCUMENTS\OLD RESRAD FILES\PIT AB-SITE PARK WORKER.RAD

Contaminated Zone Dimensions		Initial Soil Concentrations pCi/g	
Area:	2160.00 square meters	Cs-137	1.000E+00
Thickness:	0.15 meters	H-3	1.000E+00
Cover Depth:	0.00 meters	Th-230	1.000E+00

0

Total Dose TDOSE(t) mrem/yr
Basic Radiation Dose Limit = 2.500E+01 mrem/yr
Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	2.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	4.403E-01	4.332E-01	4.240E-01	4.146E-01	3.535E-01	2.323E-01	7.571E-02	4.479E-02	5.683E-01
M(t):	1.761E-02	1.733E-02	1.696E-02	1.659E-02	1.414E-02	9.291E-03	3.028E-03	1.792E-03	2.273E-02

0Maximum TDOSE(t): 5.683E-01 mrem/yr at t = 1.000E+03 years

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	4.363E-01	0.9909	4.207E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.885E-04	0.0007
H-3	0.000E+00	0.0000	1.692E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.099E-08	0.0000
Th-230	4.704E-04	0.0011	4.350E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.201E-03	0.0073
Total	4.368E-01	0.9920	4.519E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.490E-03	0.0079

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years
Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.366E-01	0.9915
H-3	9.693E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.144E-05	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.715E-03	0.0084
Total	9.693E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.403E-01	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	4.261E-01	0.9835	4.107E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.817E-04	0.0007
H-3	0.000E+00	0.0000	1.112E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.351E-11	0.0000
Th-230	1.049E-03	0.0024	4.347E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.203E-03	0.0074
Total	4.271E-01	0.9859	4.348E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.485E-03	0.0080

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years
Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.264E-01	0.9842
H-3	2.564E-03	0.0059	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.564E-03	0.0059
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.295E-03	0.0099
Total	2.564E-03	0.0059	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.332E-01	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 2.000E+00 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	4.161E-01	0.9814	4.010E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.750E-04	0.0006
H-3	0.000E+00	0.0000	7.312E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.203E-14	0.0000
Th-230	1.619E-03	0.0038	4.345E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.206E-03	0.0076
Total	4.177E-01	0.9852	4.345E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.481E-03	0.0082

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 2.000E+00 years
Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.164E-01	0.9820
H-3	2.754E-03	0.0065	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.754E-03	0.0065
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.868E-03	0.0115
Total	2.754E-03	0.0065	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.240E-01	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	4.063E-01	0.9800	3.915E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.685E-04	0.0006
H-3	0.000E+00	0.0000	4.806E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.448E-17	0.0000
Th-230	2.181E-03	0.0053	4.342E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.209E-03	0.0077
Total	4.085E-01	0.9852	4.343E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.477E-03	0.0084

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years
Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.066E-01	0.9806
H-3	2.609E-03	0.0063	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.609E-03	0.0063
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.433E-03	0.0131
Total	2.609E-03	0.0063	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.146E-01	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+01 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	3.441E-01	0.9734	3.309E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.270E-04	0.0006
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	5.897E-03	0.0167	4.326E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.240E-03	0.0092
Total	3.500E-01	0.9901	4.326E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.467E-03	0.0098

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+01 years
Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.443E-01	0.9740
H-3	8.318E-23	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.318E-23	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.180E-03	0.0260
Total	8.318E-23	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.535E-01	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground mrem/yr	Ground fract.	Inhalation mrem/yr	Inhalation fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	Soil mrem/yr	Soil fract.
Cs-137	2.141E-01	0.9215	2.048E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.404E-04	0.0006
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	1.467E-02	0.0632	4.278E-05	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.383E-03	0.0146
Total	2.287E-01	0.9846	4.278E-05	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.523E-03	0.0152

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years
Water Dependent Pathways

Radio-Nuclide	Water mrem/yr	Water fract.	Fish mrem/yr	Fish fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	All Pathways* mrem/yr	All Pathways* fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.142E-01	0.9221
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.810E-02	0.0779
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.323E-01	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	4.061E-02	0.5364	3.814E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.616E-05	0.0003
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	3.122E-02	0.4124	4.112E-05	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.807E-03	0.0503
Total	7.184E-02	0.9488	4.112E-05	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.833E-03	0.0506

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years
Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.064E-02	0.5368
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.507E-02	0.4632
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.571E-02	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	3.506E-04	0.0078	3.118E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.138E-07	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	3.828E-02	0.8546	3.646E-05	0.0008	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.727E-03	0.0832
Total	3.863E-02	0.8624	3.646E-05	0.0008	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.727E-03	0.0832

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years
Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.508E-04	0.0078
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	2.398E-03	0.0535	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.444E-02	0.9922
Total	2.398E-03	0.0535	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.479E-02	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	1.976E-11	0.0000	1.424E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.765E-15	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	2.855E-02	0.0502	2.206E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.270E-03	0.0040
Total	2.855E-02	0.0502	2.206E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.270E-03	0.0040

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years
Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.977E-11	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	5.375E-01	0.9457	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.683E-01	1.0000
Total	5.375E-01	0.9457	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.683E-01	1.0000

*Sum of all water independent and dependent pathways.

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

0 Parent (i)	Product (j)	Thread Fraction	DSR(jt) At Time in Years (mrem/yr)/(pCi/g) 0.000E+00	1.000E+00	2.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Cs-137+D	Cs-137+D	1.000E+00	4.366E-01	4.264E-01	4.164E-01	4.066E-01	3.443E-01	2.142E-01	4.064E-02	3.508E-04	1.977E-11
0H-3	H-3	1.000E+00	1.144E-05	2.564E-03	2.754E-03	2.609E-03	8.318E-23	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0Th-230	Th-230	1.000E+00	3.421E-03	3.420E-03	3.418E-03	3.416E-03	3.403E-03	3.365E-03	3.235E-03	2.879E-03	1.780E-03
Th-230	Ra-226+D	1.000E+00	2.935E-04	8.750E-04	1.448E-03	2.013E-03	5.751E-03	1.457E-02	3.121E-02	3.911E-02	1.397E-01
Th-230	Pb-210+D	1.000E+00	9.603E-08	6.617E-07	1.765E-06	3.375E-06	2.663E-05	1.594E-04	6.283E-04	2.454E-03	4.268E-01
Th-230	-DSR(j)		3.715E-03	4.295E-03	4.868E-03	5.433E-03	9.180E-03	1.810E-02	3.507E-02	4.444E-02	5.683E-01

The DSR includes contributions from associated (half-life ó 180 days) daughters.

0

Single Radionuclide Soil Guidelines G(it) in pCi/g
Basic Radiation Dose Limit = 2.500E+01 mrem/yr

0Nuclide (i)	t= 0.000E+00	1.000E+00	2.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Cs-137	5.726E+01	5.864E+01	6.004E+01	6.149E+01	7.260E+01	1.167E+02	6.151E+02	7.127E+04	1.265E+12
H-3	2.186E+06	9.749E+03	9.078E+03	9.584E+03	*9.597E+15	*9.597E+15	*9.597E+15	*9.597E+15	*9.597E+15
Th-230	6.729E+03	5.820E+03	5.136E+03	4.602E+03	2.723E+03	1.381E+03	7.128E+02	5.625E+02	4.399E+01

*At specific activity limit

0

Summed Dose/Source Ratios DSR(it) in (mrem/yr)/(pCi/g)
and Single Radionuclide Soil Guidelines G(it) in pCi/g
at tmin = time of minimum single radionuclide soil guideline
and at tmax = time of maximum total dose = 1.000E+03 years

0Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(itmin) (pCi/g)	G(itmin) (pCi/g)	DSR(itmax) (pCi/g)	G(itmax) (pCi/g)
Cs-137	1.000E+00	0.000E+00	4.366E-01	5.726E+01	1.977E-11	1.265E+12
H-3	1.000E+00	1.378 ñ 0.003	2.830E-03	8.834E+03	0.000E+00	*9.597E+15
Th-230	1.000E+00	1.000E+03	5.683E-01	4.399E+01	5.683E-01	4.399E+01

*At specific activity limit

Individual Nuclide Dose Summed Over All Pathways
Parent Nuclide and Branch Fraction Indicated

0Nuclide (j)	Parent (i)	THF(i)	DOSE(jt) mrem/yr t= 0.000E+00	1.000E+00	2.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Cs-137	Cs-137	1.000E+00	4.366E-01	4.264E-01	4.164E-01	4.066E-01	3.443E-01	2.142E-01	4.064E-02	3.508E-04	1.977E-11
0H-3	H-3	1.000E+00	1.144E-05	2.564E-03	2.754E-03	2.609E-03	8.318E-23	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0Th-230	Th-230	1.000E+00	3.421E-03	3.420E-03	3.418E-03	3.416E-03	3.403E-03	3.365E-03	3.235E-03	2.879E-03	1.780E-03
0Ra-226	Th-230	1.000E+00	2.935E-04	8.750E-04	1.448E-03	2.013E-03	5.751E-03	1.457E-02	3.121E-02	3.911E-02	1.397E-01
0Pb-210	Th-230	1.000E+00	9.603E-08	6.617E-07	1.765E-06	3.375E-06	2.663E-05	1.594E-04	6.283E-04	2.454E-03	4.268E-01

THF(i) is the thread fraction of the parent nuclide.

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

0Nuclide (j)	Parent (i)	THF(i)	S(jt) pCi/g t= 0.000E+00	1.000E+00	2.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Cs-137	Cs-137	1.000E+00	1.000E+00	9.767E-01	9.539E-01	9.317E-01	7.898E-01	4.927E-01	9.444E-02	8.422E-04	5.642E-11
0H-3	H-3	1.000E+00	1.000E+00	6.576E-04	4.324E-07	2.843E-10	1.511E-32	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0Th-230	Th-230	1.000E+00	1.000E+00	9.998E-01	9.997E-01	9.995E-01	9.983E-01	9.949E-01	9.831E-01	9.501E-01	8.431E-01
0Ra-226	Th-230	1.000E+00	0.000E+00	4.302E-04	8.545E-04	1.273E-03	4.043E-03	1.062E-02	2.327E-02	2.973E-02	2.683E-02
0Pb-210	Th-230	1.000E+00	0.000E+00	6.612E-06	2.598E-05	5.741E-05	5.636E-04	3.627E-03	1.502E-02	2.275E-02	2.071E-02

THF(i) is the thread fraction of the parent nuclide.
0RESCALC.EXE execution time = 0.52 seconds

Intrisk : Residual Dose and Risk Assessment Under Future Park Worker Scenario
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Cancer Risk Slope Factors Summary Table
Risk Library: FGR 13 Morbidity

Menu	Parameter	Current Value	Base Case*	Parameter Name
Sf-1	Ground external radiation slope factors, 1/yr per (pCi/g):			
Sf-1	Cs-137+D	2.55E-06	5.32E-10	SLPF(1,1)
Sf-1	H-3	0.00E+00	0.00E+00	SLPF(2,1)
Sf-1	Pb-210+D	4.21E-09	1.41E-09	SLPF(3,1)
Sf-1	Ra-226+D	8.49E-06	2.29E-08	SLPF(4,1)
Sf-1	Th-230	8.19E-10	8.19E-10	SLPF(5,1)
Sf-2	Inhalation, slope factors, 1/(pCi):			
Sf-2	Cs-137+D	1.12E-10	1.12E-10	SLPF(1,2)
Sf-2	H-3	8.51E-13	8.51E-13	SLPF(2,2)
Sf-2	Pb-210+D	3.08E-08	1.58E-08	SLPF(3,2)
Sf-2	Ra-226+D	2.83E-08	2.82E-08	SLPF(4,2)
Sf-2	Th-230	3.40E-08	3.40E-08	SLPF(5,2)
Sf-3	Food ingestion, slope factors, 1/(pCi):			
Sf-3	Cs-137+D	3.74E-11	3.74E-11	SLPF(1,3)
Sf-3	H-3	1.44E-13	1.44E-13	SLPF(2,3)
Sf-3	Pb-210+D	3.44E-09	1.18E-09	SLPF(3,3)
Sf-3	Ra-226+D	5.15E-10	5.14E-10	SLPF(4,3)
Sf-3	Th-230	1.19E-10	1.19E-10	SLPF(5,3)
Sf-3	Water ingestion, slope factors, 1/(pCi):			
Sf-3	Cs-137+D	3.04E-11	3.04E-11	SLPF(1,4)
Sf-3	H-3	1.12E-13	1.12E-13	SLPF(2,4)
Sf-3	Pb-210+D	2.66E-09	8.81E-10	SLPF(3,4)
Sf-3	Ra-226+D	3.86E-10	3.85E-10	SLPF(4,4)
Sf-3	Th-230	9.10E-11	9.10E-11	SLPF(5,4)
Sf-3	Soil ingestion, slope factors, 1/(pCi):			
Sf-3	Cs-137+D	3.74E-11	3.74E-11	SLPF(1,5)
Sf-3	H-3	1.44E-13	1.44E-13	SLPF(2,5)
Sf-3	Pb-210+D	3.44E-09	1.18E-09	SLPF(3,5)
Sf-3	Ra-226+D	5.15E-10	5.14E-10	SLPF(4,5)
Sf-3	Th-230	1.19E-10	1.19E-10	SLPF(5,5)
Sf-Rn	Radon Inhalation slope factors, 1/(pCi):			
Sf-Rn	Rn-222	1.80E-12	1.80E-12	SLPFRN(1,1)
Sf-Rn	Po-218	3.70E-12	3.70E-12	SLPFRN(1,2)
Sf-Rn	Pb-214	6.20E-12	6.20E-12	SLPFRN(1,3)
Sf-Rn	Bi-214	1.50E-11	1.50E-11	SLPFRN(1,4)

```
Sf-Rn  Radon K factors, (mrem/WLM):
Sf-Rn  Rn-222 Indoor                                              7.60E+02   7.60E+02   KFACTR(1,1)
Sf-Rn  Rn-222 Outdoor                                             5.70E+02   5.70E+02   KFACTR(1,2)
-------------------------------------------------------------------------------------------------------
*Base Case means Default.Lib w/o Associate Nuclide contributions.
```

Risk Slope and Environmental Transport Factors for the Ground Pathway

0Nuclide (i)	Slope(i)* t=	ETFG(i,t) At Time in Years (dimensionless) 0.000E+00	1.000E+00	2.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
At-218	3.570E-09	1.492E-01	1.492E-01	1.492E-01	1.492E-01	1.492E-01	1.493E-01	1.495E-01	1.500E-01	1.507E-01
Ba-137m	2.690E-06	1.294E-01	1.294E-01	1.294E-01	1.293E-01	1.292E-01	1.289E-01	1.275E-01	1.235E-01	1.039E-01
Bi-210	2.760E-09	1.425E-01	1.425E-01	1.424E-01	1.424E-01	1.423E-01	1.421E-01	1.412E-01	1.384E-01	1.232E-01
Bi-214	7.480E-06	1.189E-01	1.189E-01	1.189E-01	1.189E-01	1.187E-01	1.183E-01	1.168E-01	1.123E-01	9.208E-02
Cs-137	5.320E-10	1.466E-01	1.466E-01	1.466E-01	1.466E-01	1.465E-01	1.464E-01	1.457E-01	1.436E-01	1.310E-01
H-3	0.000E+00	1.600E-01	1.600E-01	1.600E-01	1.600E-01	1.600E-01	1.600E-01	1.600E-01	1.600E-01	1.600E-01
Pb-210	1.410E-09	1.506E-01	1.507E-01	1.507E-01	1.507E-01	1.507E-01	1.507E-01	1.508E-01	1.511E-01	1.518E-01
Pb-214	9.820E-07	1.361E-01	1.361E-01	1.360E-01	1.360E-01	1.359E-01	1.356E-01	1.345E-01	1.309E-01	1.128E-01
Po-210	3.950E-11	1.270E-01	1.269E-01	1.269E-01	1.269E-01	1.268E-01	1.264E-01	1.250E-01	1.208E-01	1.009E-01
Po-214	3.860E-10	1.265E-01	1.264E-01	1.264E-01	1.264E-01	1.263E-01	1.259E-01	1.245E-01	1.203E-01	1.006E-01
Po-218	4.260E-11	1.262E-01	1.262E-01	1.262E-01	1.262E-01	1.260E-01	1.257E-01	1.243E-01	1.201E-01	1.003E-01
Ra-226	2.290E-08	1.423E-01	1.423E-01	1.423E-01	1.423E-01	1.422E-01	1.420E-01	1.411E-01	1.383E-01	1.224E-01
Rn-222	1.740E-09	1.311E-01	1.311E-01	1.311E-01	1.311E-01	1.309E-01	1.306E-01	1.293E-01	1.253E-01	1.060E-01
Th-230	8.190E-10	1.477E-01	1.477E-01	1.477E-01	1.477E-01	1.476E-01	1.476E-01	1.472E-01	1.461E-01	1.372E-01
Tl-210	0.000E+00	1.600E-01	1.600E-01	1.600E-01	1.600E-01	1.600E-01	1.600E-01	1.600E-01	1.600E-01	1.600E-01

* - Units are 1/yr per (pCi/g) at infinite depth and area. Multiplication by ETFG(i,t) converts to site conditions.

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 0.000E+00 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Cs-137	1.335E-04	0.000E+00	0.000E+00	0.000E+00	5.840E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.840E+00
H-3	1.938E+02	0.000E+00	0.000E+00	0.000E+00	5.840E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.840E+00
Pb-210	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ra-226	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	1.335E-04	0.000E+00	0.000E+00	0.000E+00	5.840E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.840E+00

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

0

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 0.000E+00 years

0

Radon Pathway	Radionuclides							
	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

0

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 0.000E+00 years

0 Water Independent Pathways (Inhalation excludes radon)

0

Radio-Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	8.234E-06	0.9964	3.737E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.460E-09	0.0007
H-3	0.000E+00	0.0000	4.124E-09	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.102E-11	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	3.024E-09	0.0004	1.134E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.737E-08	0.0021
Total	8.237E-06	0.9967	4.238E-09	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.286E-08	0.0028

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 0.000E+00 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All Pathways** risk	All Pathways** fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.239E-06	0.9970
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.145E-09	0.0005
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.051E-08	0.0025
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.264E-06	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

0

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 0.000E+00 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

0

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 0.000E+00 years

0 Water Independent Pathways (Inhalation excludes radon)

0

Radio-Nuclide	Ground risk	Ground fract.	Inhalation risk	Inhalation fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	Soil risk	Soil fract.
Cs-137	8.234E-06	0.9964	3.737E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.460E-09	0.0007
H-3	0.000E+00	0.0000	4.124E-09	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.102E-11	0.0000
Th-230	3.024E-09	0.0004	1.134E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.737E-08	0.0021
Total	8.237E-06	0.9967	4.238E-09	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.286E-08	0.0028

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 0.000E+00 years

Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.239E-06	0.9970
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.145E-09	0.0005
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.051E-08	0.0025
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.264E-06	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 1.000E+00 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Cs-137	1.303E-04	0.000E+00	0.000E+00	0.000E+00	5.702E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.702E+00
H-3	1.274E-01	0.000E+00	0.000E+00	0.000E+00	3.839E-03	7.270E+03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.270E+03
Pb-210	8.821E-10	0.000E+00	0.000E+00	0.000E+00	3.860E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.860E-05
Ra-226	5.739E-08	0.000E+00	0.000E+00	0.000E+00	2.511E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.511E-03
Th-230	1.334E-04	0.000E+00	0.000E+00	0.000E+00	5.837E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.837E+00

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

0

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 1.000E+00 years

0

Radon Pathway	Radionuclides							
	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

0

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+00 years

0 Water Independent Pathways (Inhalation excludes radon)

0

Radio-Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	8.041E-06	0.9929	3.648E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.331E-09	0.0007
H-3	0.000E+00	0.0000	2.711E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.382E-14	0.0000
Pb-210	1.009E-13	0.0000	6.782E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.322E-12	0.0000
Ra-226	1.104E-08	0.0014	4.057E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.232E-11	0.0000
Th-230	3.023E-09	0.0004	1.134E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.736E-08	0.0021
Total	8.055E-06	0.9947	1.165E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.273E-08	0.0028

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+00 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All Pathways** risk	All Pathways** fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.046E-06	0.9936
H-3	2.036E-08	0.0025	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.036E-08	0.0025
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.424E-12	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.107E-08	0.0014
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.050E-08	0.0025
Total	2.036E-08	0.0025	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.098E-06	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

0

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 1.000E+00 years

0

Radon Pathway	Radionuclides Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

0

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+00 years

0

Water Independent Pathways (Inhalation excludes radon)

0

Radio-Nuclide	Ground risk	Ground fract.	Inhalation risk	Inhalation fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	Soil risk	Soil fract.
Cs-137	8.041E-06	0.9929	3.648E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.331E-09	0.0007
H-3	0.000E+00	0.0000	2.711E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.382E-14	0.0000
Th-230	1.406E-08	0.0017	1.134E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.740E-08	0.0021
Total	8.055E-06	0.9947	1.165E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.273E-08	0.0028

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+00 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All pathways risk	All pathways fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.046E-06	0.9936
H-3	2.036E-08	0.0025	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.036E-08	0.0025
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.158E-08	0.0039
Total	2.036E-08	0.0025	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.098E-06	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 2.000E+00 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Cs-137	1.272E-04	0.000E+00	0.000E+00	0.000E+00	5.566E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.566E+00
H-3	8.375E-05	0.000E+00	0.000E+00	0.000E+00	2.523E-06	4.422E+04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.422E+04
Pb-210	3.464E-09	0.000E+00	0.000E+00	0.000E+00	1.516E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.516E-04
Ra-226	1.139E-07	0.000E+00	0.000E+00	0.000E+00	4.986E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.986E-03
Th-230	1.333E-04	0.000E+00	0.000E+00	0.000E+00	5.833E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.833E+00

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

0

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 2.000E+00 years

0

Radon Pathway	Radionuclides							
	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

0

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 2.000E+00 years

0 Water Independent Pathways (Inhalation excludes radon)

0

Radio-Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	7.852E-06	0.9786	3.562E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.205E-09	0.0006
H-3	0.000E+00	0.0000	1.782E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.083E-18	0.0000
Pb-210	3.965E-13	0.0000	2.663E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.305E-11	0.0000
Ra-226	2.193E-08	0.0027	8.054E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.416E-11	0.0000
Th-230	3.023E-09	0.0004	1.133E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.735E-08	0.0022
Total	7.877E-06	0.9817	1.138E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.264E-08	0.0028

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 2.000E+00 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All Pathways** risk	All Pathways** fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.857E-06	0.9793
H-3	1.238E-07	0.0154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.238E-07	0.0154
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.345E-11	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.199E-08	0.0027
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.049E-08	0.0026
Total	1.238E-07	0.0154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.024E-06	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

0

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 2.000E+00 years

0

Radon Pathway	Radionuclides Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

0

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 2.000E+00 years

0

Water Independent Pathways (Inhalation excludes radon)

0

Radio-Nuclide	Ground risk	Ground fract.	Inhalation risk	Inhalation fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	Soil risk	Soil fract.
Cs-137	7.852E-06	0.9786	3.562E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.205E-09	0.0006
H-3	0.000E+00	0.0000	1.782E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.083E-18	0.0000
Th-230	2.495E-08	0.0031	1.134E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.743E-08	0.0022
Total	7.877E-06	0.9817	1.138E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.264E-08	0.0028

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 2.000E+00 years

Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.857E-06	0.9793
H-3	1.238E-07	0.0154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.238E-07	0.0154
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.249E-08	0.0053
Total	1.238E-07	0.0154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.024E-06	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 3.000E+00 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Cs-137	1.242E-04	0.000E+00	0.000E+00	0.000E+00	5.434E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.434E+00
H-3	5.505E-08	0.000E+00	0.000E+00	0.000E+00	1.658E-09	4.185E+04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.185E+04
Pb-210	7.652E-09	0.000E+00	0.000E+00	0.000E+00	3.348E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.348E-04
Ra-226	1.697E-07	0.000E+00	0.000E+00	0.000E+00	7.424E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.424E-03
Th-230	1.332E-04	0.000E+00	0.000E+00	0.000E+00	5.830E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.830E+00

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

0

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 3.000E+00 years

0

Radon Pathway	Radionuclides							
	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

0

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+00 years

0 Water Independent Pathways (Inhalation excludes radon)

0

Radio-Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	7.668E-06	0.9776	3.477E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.081E-09	0.0006
H-3	0.000E+00	0.0000	1.171E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.970E-21	0.0000
Pb-210	8.762E-13	0.0000	5.884E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.882E-11	0.0000
Ra-226	3.266E-08	0.0042	1.199E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.554E-11	0.0000
Th-230	3.022E-09	0.0004	1.133E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.734E-08	0.0022
Total	7.704E-06	0.9822	1.137E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.255E-08	0.0029

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+00 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All Pathways** risk	All Pathways** fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.673E-06	0.9783
H-3	1.172E-07	0.0149	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.172E-07	0.0149
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.970E-11	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.275E-08	0.0042
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.048E-08	0.0026
Total	1.172E-07	0.0149	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.843E-06	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

0

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 3.000E+00 years

0

Radon Pathway	Radionuclides Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

0

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+00 years

0

Water Independent Pathways (Inhalation excludes radon)

0

Radio-Nuclide	Ground risk	Ground fract.	Inhalation risk	Inhalation fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	Soil risk	Soil fract.
Cs-137	7.668E-06	0.9776	3.477E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.081E-09	0.0006
H-3	0.000E+00	0.0000	1.171E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.970E-21	0.0000
Th-230	3.568E-08	0.0045	1.134E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.747E-08	0.0022
Total	7.704E-06	0.9822	1.137E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.255E-08	0.0029

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+00 years

Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.673E-06	0.9783
H-3	1.172E-07	0.0149	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.172E-07	0.0149
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.326E-08	0.0068
Total	1.172E-07	0.0149	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.843E-06	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 1.000E+01 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Cs-137	1.050E-04	0.000E+00	0.000E+00	0.000E+00	4.594E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.594E+00
H-3	2.918E-30	0.000E+00	0.000E+00	0.000E+00	0.000E+00	9.528E-15	0.000E+00	0.000E+00	0.000E+00	0.000E+00	9.528E-15
Pb-210	7.492E-08	0.000E+00	0.000E+00	0.000E+00	3.278E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.278E-03
Ra-226	5.375E-07	0.000E+00	0.000E+00	0.000E+00	2.352E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.352E-02
Th-230	1.327E-04	0.000E+00	0.000E+00	0.000E+00	5.807E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.807E+00

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

0

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 1.000E+01 years

0

Radon Pathway	Radionuclides							
	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

0

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+01 years

0 Water Independent Pathways (Inhalation excludes radon)

0

Radio-Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	6.494E-06	0.9805	2.940E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.295E-09	0.0006
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	8.599E-12	0.0000	5.760E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.822E-10	0.0000
Ra-226	1.036E-07	0.0156	3.799E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.027E-10	0.0000
Th-230	3.018E-09	0.0005	1.128E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.728E-08	0.0026
Total	6.601E-06	0.9966	1.135E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.216E-08	0.0033

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+01 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All Pathways** risk	All Pathways** fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.498E-06	0.9812
H-3	2.668E-26	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.668E-26	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.908E-10	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.039E-07	0.0157
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.041E-08	0.0031
Total	2.668E-26	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.623E-06	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

0

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 1.000E+01 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

0

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+01 years

0 Water Independent Pathways (Inhalation excludes radon)

0

Radio-Nuclide	Ground risk	Ground fract.	Inhalation risk	Inhalation fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	Soil risk	Soil fract.
Cs-137	6.494E-06	0.9805	2.940E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.295E-09	0.0006
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	1.066E-07	0.0161	1.132E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.786E-08	0.0027
Total	6.601E-06	0.9966	1.135E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.216E-08	0.0033

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+01 years

Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.498E-06	0.9812
H-3	2.668E-26	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.668E-26	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.246E-07	0.0188
Total	2.668E-26	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.623E-06	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 3.000E+01 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Cs-137	6.496E-05	0.000E+00	0.000E+00	0.000E+00	2.843E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.843E+00
H-3	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	4.782E-07	0.000E+00	0.000E+00	0.000E+00	2.093E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.093E-02
Ra-226	1.400E-06	0.000E+00	0.000E+00	0.000E+00	6.125E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.125E-02
Th-230	1.312E-04	0.000E+00	0.000E+00	0.000E+00	5.740E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.740E+00

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

0

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 3.000E+01 years

0

Radon Pathway	Radionuclides							
	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

0

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+01 years

0 Water Independent Pathways (Inhalation excludes radon)

0

Radio-Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	4.039E-06	0.9316	1.819E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.658E-09	0.0006
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	5.528E-11	0.0000	3.677E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.801E-09	0.0004
Ra-226	2.711E-07	0.0625	9.893E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.882E-10	0.0002
Th-230	3.006E-09	0.0007	1.115E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.708E-08	0.0039
Total	4.314E-06	0.9948	1.131E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.233E-08	0.0051

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+01 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All Pathways** risk	All Pathways** fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.042E-06	0.9322
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.857E-09	0.0004
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.719E-07	0.0627
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.020E-08	0.0047
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.336E-06	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

0

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 3.000E+01 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

0

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+01 years

0 Water Independent Pathways (Inhalation excludes radon)

0

Radio-Nuclide	Ground risk	Ground fract.	Inhalation risk	Inhalation fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	Soil risk	Soil fract.
Cs-137	4.039E-06	0.9316	1.819E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.658E-09	0.0006
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	2.742E-07	0.0632	1.129E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.967E-08	0.0045
Total	4.314E-06	0.9948	1.131E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.233E-08	0.0051

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+01 years

Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.042E-06	0.9322
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.940E-07	0.0678
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.336E-06	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 1.000E+02 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Cs-137	1.210E-05	0.000E+00	0.000E+00	0.000E+00	5.294E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.294E-01
H-3	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	1.924E-06	0.000E+00	0.000E+00	0.000E+00	8.420E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.420E-02
Ra-226	2.981E-06	0.000E+00	0.000E+00	0.000E+00	1.304E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.304E-01
Th-230	1.260E-04	0.000E+00	0.000E+00	0.000E+00	5.512E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.512E+00

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

0

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 1.000E+02 years

0

Radon Pathway	Radionuclides							
	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

0

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+02 years

0 Water Independent Pathways (Inhalation excludes radon)

0

Radio-Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	7.665E-07	0.5543	3.388E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.950E-10	0.0004
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	2.280E-10	0.0002	1.479E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.247E-09	0.0052
Ra-226	5.871E-07	0.4246	2.107E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.679E-09	0.0012
Th-230	2.964E-09	0.0021	1.071E-10	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.640E-08	0.0119
Total	1.357E-06	0.9812	1.107E-10	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.582E-08	0.0187

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+02 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All Pathways** risk	All Pathways** fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.670E-07	0.5547
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.477E-09	0.0054
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.888E-07	0.4258
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.947E-08	0.0141
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.383E-06	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

0

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 1.000E+02 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

0

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+02 years

0 Water Independent Pathways (Inhalation excludes radon)

0

Radio-Nuclide	Ground risk	Ground fract.	Inhalation risk	Inhalation fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	Soil risk	Soil fract.
Cs-137	7.665E-07	0.5543	3.388E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.950E-10	0.0004
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	5.903E-07	0.4269	1.107E-10	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.532E-08	0.0183
Total	1.357E-06	0.9812	1.107E-10	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.582E-08	0.0187

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+02 years

Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.670E-07	0.5547
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.158E-07	0.4453
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.383E-06	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 3.000E+02 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Cs-137	9.892E-08	0.000E+00	0.000E+00	0.000E+00	4.328E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.328E-03
H-3	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	2.671E-06	0.000E+00	0.000E+00	0.000E+00	1.169E-01	2.064E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.233E-01
Ra-226	3.491E-06	0.000E+00	0.000E+00	0.000E+00	1.528E-01	5.925E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.452E-01
Th-230	1.116E-04	0.000E+00	0.000E+00	0.000E+00	4.883E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.883E+00

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

0

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 3.000E+02 years

0

Radon Pathway	Radionuclides							
	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

0

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+02 years

0 Water Independent Pathways (Inhalation excludes radon)

0

Radio-Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	6.616E-09	0.0085	2.770E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.047E-12	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	3.411E-10	0.0004	2.054E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.006E-08	0.0129
Ra-226	7.222E-07	0.9282	2.467E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.966E-09	0.0025
Th-230	2.842E-09	0.0037	9.485E-11	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.453E-08	0.0187
Total	7.320E-07	0.9408	9.937E-11	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.656E-08	0.0341

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+02 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All Pathways** risk	All Pathways** fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.620E-09	0.0085
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	1.373E-08	0.0176	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.413E-08	0.0310
Ra-226	5.710E-09	0.0073	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.299E-07	0.9380
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.746E-08	0.0224
Total	1.944E-08	0.0250	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.781E-07	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

0

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 3.000E+02 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

0

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+02 years

0 Water Independent Pathways (Inhalation excludes radon)

0

Radio-Nuclide	Ground risk	Ground fract.	Inhalation risk	Inhalation fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	Soil risk	Soil fract.
Cs-137	6.616E-09	0.0085	2.770E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.047E-12	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	7.254E-07	0.9323	9.937E-11	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.655E-08	0.0341
Total	7.320E-07	0.9408	9.937E-11	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.656E-08	0.0341

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+02 years

Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.620E-09	0.0085
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	1.944E-08	0.0250	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.715E-07	0.9915
Total	1.944E-08	0.0250	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.781E-07	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 1.000E+03 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Cs-137	4.518E-15	0.000E+00	0.000E+00	0.000E+00	1.977E-10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.977E-10
H-3	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	1.659E-06	0.000E+00	0.000E+00	0.000E+00	7.257E-02	5.855E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.862E+01
Ra-226	2.149E-06	0.000E+00	0.000E+00	0.000E+00	9.401E-02	8.416E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.425E+01
Th-230	6.752E-05	0.000E+00	0.000E+00	0.000E+00	2.954E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.954E+00

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

0

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 1.000E+03 years

0

Radon Pathway	Radionuclides							
	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

0

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+03 years

0 Water Independent Pathways (Inhalation excludes radon)

0

Radio-Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	3.729E-16	0.0000	1.265E-23	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.848E-19	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	2.889E-10	0.0001	1.275E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.247E-09	0.0012
Ra-226	5.384E-07	0.1023	1.519E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.210E-09	0.0002
Th-230	2.369E-09	0.0005	5.739E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.789E-09	0.0017
Total	5.410E-07	0.1028	6.018E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.625E-08	0.0031

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+03 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All Pathways** risk	All Pathways** fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.731E-16	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	3.894E-06	0.7399	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.900E-06	0.7412
Ra-226	8.111E-07	0.1542	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.351E-06	0.2567
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.122E-08	0.0021
Total	4.705E-06	0.8941	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.262E-06	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

0

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 1.000E+03 years

0

Radon Pathway	Radionuclides Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

0

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+03 years

0

Water Independent Pathways (Inhalation excludes radon)

0

Radio-Nuclide	Ground risk	Ground fract.	Inhalation risk	Inhalation fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	Soil risk	Soil fract.
Cs-137	3.729E-16	0.0000	1.265E-23	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.848E-19	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	5.410E-07	0.1028	6.018E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.625E-08	0.0031
Total	5.410E-07	0.1028	6.018E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.625E-08	0.0031

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+03 years

Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.731E-16	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	4.705E-06	0.8941	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.262E-06	1.0000
Total	4.705E-06	0.8941	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.262E-06	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

ATTACHMENT G-6

DOSE AND RISK CALCULATION AND

OUTPUT DOSE AND RISK ASSESSMENTS SUMMARY REPORTS

FOR DISPOSAL PIT C UNDER FUTURE PARK WORKER

Table G-6-1: Results of Residual Dose Assessment for Disposal Pit C under Future Park Worker Scenario

Nuclide	EPC (pCi/g)	Dose to Source Ratio ((mrem/yr)/(pCi/g))									
		T = 2.4 Year					T=1000 Years				
		Ground	Inhalation	Soil	Water	All Pathways	Ground	Inhalation	Soil	Water	All Pathways
Cs-137	0.112	4.2E-01	4.6E-09	2.7E-04	0.0E+00	4.2E-01	2.0E-11	1.6E-19	9.8E-15	0.0E+00	2.1E-11
H-3	43.48	0.0E+00	7.4E-14	1.1E-15	2.7E-03	2.7E-03	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Pb-210	0	8.3E-04	3.2E-06	3.9E-02	0.0E+00	3.9E-02	4.8E-18	1.2E-20	1.4E-16	0.0E+00	1.5E-16
Ra-226	0	1.4E+00	1.6E-06	1.1E-02	0.0E+00	1.4E+00	6.4E-01	1.7E-06	1.7E-02	0.0E+00	6.6E-01
Ra-228	0.32	1.2E+00	2.9E-05	8.4E-03	0.0E+00	1.2E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Th-230	0.19	1.9E-03	5.0E-05	3.2E-03	0.0E+00	5.2E-03	3.4E-01	2.6E-05	1.0E-02	0.0E+00	3.5E-01
U-234	0.04	6.1E-05	2.0E-05	1.6E-03	0.0E+00	1.7E-03	1.5E-03	7.6E-06	6.5E-04	0.0E+00	2.1E-03

Nuclide	Dose (mrem/yr)									
	T = 2.4 Year					T=1000 Years				
	Ground	Inhalation	Soil	Water	All Pathways	Ground	Inhalation	Soil	Water	All Pathways
Cs-137	4.7E-02	5.1E-10	3.0E-05	0.0E+00	4.7E-02	2.3E-12	1.8E-20	1.1E-15	0.0E+00	2.3E-12
H-3	0.0E+00	3.2E-12	4.9E-14	1.2E-01	1.2E-01	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Pb-210	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Ra-226	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Ra-228	3.8E-01	9.2E-06	2.7E-03	0.0E+00	3.8E-01	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Th-230	3.7E-04	9.5E-06	6.1E-04	0.0E+00	9.9E-04	6.4E-02	5.0E-06	2.0E-03	0.0E+00	6.6E-02
U-234	2.5E-06	8.1E-07	6.6E-05	0.0E+00	6.9E-05	5.9E-05	3.0E-07	2.6E-05	0.0E+00	8.6E-05
	Cumulative Dose				**5.4E-01**	**Cumulative Dose**				**7E-02**

Table G-6-2: Results of Residual Risk Assessment for Disposal Pit C under Future Park Worker Scenario

Nuclide	EPC (pCi/g)	Risk to Source Ratio (1/(pCi/g))									
		T = 2.4 Year					T=1000 Years				
		Ground	Inhalation	Soil	Water	All Pathways	Ground	Inhalation	Soil	Water	All Pathways
Cs-137	0.112	8.0E-06	4.1E-13	5.2E-09	0.0E+00	8.0E-06	3.9E-16	1.5E-23	1.8E-19	0.0E+00	3.9E-16
H-3	43.48	0.0E+00	1.9E-16	4.8E-19	1.2E-07	1.2E-07	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Pb-210	0	1.4E-08	1.1E-10	4.6E-07	0.0E+00	4.8E-07	8.3E-23	4.1E-25	1.7E-21	0.0E+00	1.8E-21
Ra-226	0	2.6E-05	1.2E-10	1.1E-07	0.0E+00	2.6E-05	1.2E-05	7.8E-11	2.0E-07	0.0E+00	1.2E-05
Ra-228	0.32	2.2E-05	4.0E-10	1.9E-07	0.0E+00	2.2E-05	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Th-230	0.19	3.0E-08	1.3E-10	1.7E-08	0.0E+00	4.8E-08	6.4E-06	1.1E-10	1.1E-07	0.0E+00	6.5E-06
U-234	0.04	9.6E-10	1.1E-10	1.4E-08	0.0E+00	1.5E-08	2.8E-08	4.0E-11	5.6E-09	0.0E+00	3.4E-08

Nuclide	Risk (unitless)									
	T = 2.4 Year					T=1000 Years				
	Ground	Inhalation	Soil	Water	All Pathways	Ground	Inhalation	Soil	Water	All Pathways
Cs-137	8.9E-07	4.5E-14	5.8E-10	0.0E+00	8.9E-07	4.3E-17	1.6E-24	2.1E-20	0.0E+00	4.3E-17
H-3	0.0E+00	8.2E-15	2.1E-17	5.3E-06	5.3E-06	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Pb-210	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Ra-226	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Ra-228	7.1E-06	1.3E-10	6.0E-08	0.0E+00	7.1E-06	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Th-230	5.8E-09	2.5E-11	3.3E-09	0.0E+00	9.1E-09	1.2E-06	2.0E-11	2.1E-08	0.0E+00	1.2E-06
U-234	3.9E-11	4.3E-12	5.6E-10	0.0E+00	6.0E-10	1.1E-09	1.6E-12	2.2E-10	0.0E+00	1.3E-09
	Cumulative Risk				**1E-05**	**Cumulative Risk**				**1E-06**

Summary : Residual Dose and Risk Assessment for Pit C Under Site Park Worker Scenario
File : C:\USERS\MRAHMAN\DOCUMENTS\OLD RESRAD FILES\SEAD 12 PIT C-SITE PARK WORKER.RAD

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Dose Conversion Factor (and Related) Parameter Summary
Dose Library: FGR 12 & FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation (mrem/yr)/(pCi/g)			
A-1	Ac-228 (Source: FGR 12)	5.978E+00	5.978E+00	DCF1(1)
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1(2)
A-1	Ba-137m (Source: FGR 12)	3.606E+00	3.606E+00	DCF1(3)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1(4)
A-1	Bi-212 (Source: FGR 12)	1.171E+00	1.171E+00	DCF1(5)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1(6)
A-1	Cs-137 (Source: FGR 12)	7.510E-04	7.510E-04	DCF1(7)
A-1	H-3 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1(8)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1(9)
A-1	Pb-212 (Source: FGR 12)	7.043E-01	7.043E-01	DCF1(10)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1(11)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1(12)
A-1	Po-212 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1(13)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1(14)
A-1	Po-216 (Source: FGR 12)	1.042E-04	1.042E-04	DCF1(15)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1(16)
A-1	Ra-224 (Source: FGR 12)	5.119E-02	5.119E-02	DCF1(17)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1(18)
A-1	Ra-228 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1(19)
A-1	Rn-220 (Source: FGR 12)	2.298E-03	2.298E-03	DCF1(20)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1(21)
A-1	Th-228 (Source: FGR 12)	7.940E-03	7.940E-03	DCF1(22)
A-1	Th-230 (Source: FGR 12)	1.209E-03	1.209E-03	DCF1(23)
A-1	Tl-208 (Source: FGR 12)	2.298E+01	2.298E+01	DCF1(24)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1(25)
A-1	U-234 (Source: FGR 12)	4.017E-04	4.017E-04	DCF1(26)
B-1	Dose conversion factors for inhalation mrem/pCi:			
B-1	Cs-137+D	3.190E-05	3.190E-05	DCF2(1)
B-1	H-3	6.400E-08	6.400E-08	DCF2(2)
B-1	Pb-210+D	2.320E-02	1.360E-02	DCF2(3)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2(4)
B-1	Ra-228+D	5.078E-03	4.770E-03	DCF2(5)
B-1	Th-228+D	3.454E-01	3.420E-01	DCF2(6)
B-1	Th-230	3.260E-01	3.260E-01	DCF2(7)
B-1	U-234	1.320E-01	1.320E-01	DCF2(8)
D-1	Dose conversion factors for ingestion mrem/pCi:			
D-1	Cs-137+D	5.000E-05	5.000E-05	DCF3(1)
D-1	H-3	6.400E-08	6.400E-08	DCF3(2)

D-1	Pb-210+D	7.276E-03	5.370E-03	DCF3(3)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3(4)
D-1	Ra-228+D	1.442E-03	1.440E-03	DCF3(5)
D-1	Th-228+D	8.086E-04	3.960E-04	DCF3(6)
D-1	Th-230	5.480E-04	5.480E-04	DCF3(7)
D-1	U-234	2.830E-04	2.830E-04	DCF3(8)

Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: FGR 12 & FGR 11

Menu	Parameter		Current Value#	Base Case*	Parameter Name
D-34	Food transfer factors:				
D-34	Cs-137+D	plant/soil concentration ratio dimensionless	4.000E-02	4.000E-02	RTF(11)
D-34	Cs-137+D	beef/livestock-intake ratio (pCi/kg)/(pCi/d)	3.000E-02	3.000E-02	RTF(12)
D-34	Cs-137+D	milk/livestock-intake ratio (pCi/L)/(pCi/d)	8.000E-03	8.000E-03	RTF(13)
D-34					
D-34	H-3	plant/soil concentration ratio dimensionless	4.800E+00	4.800E+00	RTF(21)
D-34	H-3	beef/livestock-intake ratio (pCi/kg)/(pCi/d)	1.200E-02	1.200E-02	RTF(22)
D-34	H-3	milk/livestock-intake ratio (pCi/L)/(pCi/d)	1.000E-02	1.000E-02	RTF(23)
D-34					
D-34	Pb-210+D	plant/soil concentration ratio dimensionless	1.000E-02	1.000E-02	RTF(31)
D-34	Pb-210+D	beef/livestock-intake ratio (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(32)
D-34	Pb-210+D	milk/livestock-intake ratio (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(33)
D-34					
D-34	Ra-226+D	plant/soil concentration ratio dimensionless	4.000E-02	4.000E-02	RTF(41)
D-34	Ra-226+D	beef/livestock-intake ratio (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(42)
D-34	Ra-226+D	milk/livestock-intake ratio (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(43)
D-34					
D-34	Ra-228+D	plant/soil concentration ratio dimensionless	4.000E-02	4.000E-02	RTF(51)
D-34	Ra-228+D	beef/livestock-intake ratio (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(52)
D-34	Ra-228+D	milk/livestock-intake ratio (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(53)
D-34					
D-34	Th-228+D	plant/soil concentration ratio dimensionless	1.000E-03	1.000E-03	RTF(61)
D-34	Th-228+D	beef/livestock-intake ratio (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(62)
D-34	Th-228+D	milk/livestock-intake ratio (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(63)
D-34					
D-34	Th-230	plant/soil concentration ratio dimensionless	1.000E-03	1.000E-03	RTF(71)
D-34	Th-230	beef/livestock-intake ratio (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(72)
D-34	Th-230	milk/livestock-intake ratio (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(73)
D-34					
D-34	U-234	plant/soil concentration ratio dimensionless	2.500E-03	2.500E-03	RTF(81)
D-34	U-234	beef/livestock-intake ratio (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(82)
D-34	U-234	milk/livestock-intake ratio (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(83)
D-5	Bioaccumulation factors fresh water L/kg:				
D-5	Cs-137+D	fish	2.000E+03	2.000E+03	BIOFAC(11)
D-5	Cs-137+D	crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(12)
D-5					
D-5	H-3	fish	1.000E+00	1.000E+00	BIOFAC(21)
D-5	H-3	crustacea and mollusks	1.000E+00	1.000E+00	BIOFAC(22)
D-5					
D-5	Pb-210+D	fish	3.000E+02	3.000E+02	BIOFAC(31)

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D-5   Pb-210+D   crustacea and mollusks                    1.000E+02  1.000E+02  BIOFAC(  32)
D-5
D-5   Ra-226+D   fish                                      5.000E+01  5.000E+01  BIOFAC(  41)
D-5   Ra-226+D   crustacea and mollusks                    2.500E+02  2.500E+02  BIOFAC(  42)
D-5
D-5   Ra-228+D   fish                                      5.000E+01  5.000E+01  BIOFAC(  51)
D-5   Ra-228+D   crustacea and mollusks                    2.500E+02  2.500E+02  BIOFAC(  52)
D-5
```

Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: FGR 12 & FGR 11

Menu	Parameter		Current Value#	Base Case*	Parameter Name
D-5	Th-228+D	fish	1.000E+02	1.000E+02	BIOFAC(61)
D-5	Th-228+D	crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(62)
D-5					
D-5	Th-230	fish	1.000E+02	1.000E+02	BIOFAC(71)
D-5	Th-230	crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(72)
D-5					
D-5	U-234	fish	1.000E+01	1.000E+01	BIOFAC(81)
D-5	U-234	crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(82)

#For DCF1(xxx) only factors are for infinite depth & area. See ETFG table in Ground Pathway of Detailed Report.
*Base Case means Default.Lib w/o Associate Nuclide contributions.

Site-Specific Parameter Summary

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	8.404E+03	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E-01	2.000E+00	---	THICK0
R011	Fraction of contamination that is submerged	0.000E+00	0.000E+00	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	9.200E+01	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	2.500E+01	3.000E+01	---	BRDL
R011	Time since placement of material (yr)	0.000E+00	0.000E+00	---	TI
R011	Times for calculations (yr)	1.000E+00	1.000E+00	---	T(2)
R011	Times for calculations (yr)	2.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	2.400E+00	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+00	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+01	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+01	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+02	1.000E+03	---	T(8)
R011	Times for calculations (yr)	3.000E+02	0.000E+00	---	T(9)
R011	Times for calculations (yr)	1.000E+03	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): Cs-137	1.000E+00	0.000E+00	---	S1(1)
R012	Initial principal radionuclide (pCi/g): H-3	1.000E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Pb-210	1.000E+00	0.000E+00	---	S1(3)
R012	Initial principal radionuclide (pCi/g): Ra-226	1.000E+00	0.000E+00	---	S1(4)
R012	Initial principal radionuclide (pCi/g): Ra-228	1.000E+00	0.000E+00	---	S1(5)
R012	Initial principal radionuclide (pCi/g): Th-230	1.000E+00	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): U-234	1.000E+00	0.000E+00	---	S1(8)
R012	Concentration in groundwater (pCi/L): Cs-137	not used	0.000E+00	---	W1(1)
R012	Concentration in groundwater (pCi/L): H-3	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Pb-210	not used	0.000E+00	---	W1(3)
R012	Concentration in groundwater (pCi/L): Ra-226	not used	0.000E+00	---	W1(4)
R012	Concentration in groundwater (pCi/L): Ra-228	not used	0.000E+00	---	W1(5)
R012	Concentration in groundwater (pCi/L): Th-230	not used	0.000E+00	---	W1(7)
R012	Concentration in groundwater (pCi/L): U-234	not used	0.000E+00	---	W1(8)
R013	Cover depth (m)	0.000E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)	not used	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	1.280E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	6.000E-05	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	3.700E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	6.000E-02	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	2.900E+01	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	7.750E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	3.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	6.600E+00	8.000E+00	---	HUMID

R013	Evapotranspiration coefficient	7.000E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	7.500E-01	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	0.000E+00	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	1.300E+07	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	1.000E-03	1.000E-03	---	EPS

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R014	Density of saturated zone (g/cm**3)	1.500E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	3.700E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	1.750E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	2.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	2.900E+02	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	1.100E-02	2.000E-02	---	HGWT
R014	Saturated zone b parameter	not used	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	0.000E+00	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	3.000E+00	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	ND	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	not used	2.500E+02	---	UW
R015	Number of unsaturated zone strata	1	1	---	NS
R015	Unsat. zone 1 thickness (m)	1.000E+00	4.000E+00	---	H(1)
R015	Unsat. zone 1 soil density (g/cm**3)	1.500E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1 total porosity	3.700E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1 effective porosity	1.750E-01	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1 field capacity	2.000E-01	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1 soil-specific b parameter	7.750E+00	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1 hydraulic conductivity (m/yr)	2.900E+01	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Cs-137				
R016	Contaminated zone (cm**3/g)	1.900E+03	4.600E+03	---	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	1.900E+03	4.600E+03	---	DCNUCU(11)
R016	Saturated zone (cm**3/g)	1.900E+03	4.600E+03	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.934E-04	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for H-3				
R016	Contaminated zone (cm**3/g)	6.000E-02	0.000E+00	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	6.000E-02	0.000E+00	---	DCNUCU(21)
R016	Saturated zone (cm**3/g)	6.000E-02	0.000E+00	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.353E+00	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for Pb-210				
R016	Contaminated zone (cm**3/g)	5.500E+02	1.000E+02	---	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	5.500E+02	1.000E+02	---	DCNUCU(31)
R016	Saturated zone (cm**3/g)	5.500E+02	1.000E+02	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.704E-03	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)

R016	Distribution coefficients for Ra-226				
R016	Contaminated zone (cm**3/g)	9.100E+03	7.000E+01	---	DCNUCC(4)
R016	Unsaturated zone 1 (cm**3/g)	9.100E+03	7.000E+01	---	DCNUCU(41)
R016	Saturated zone (cm**3/g)	9.100E+03	7.000E+01	---	DCNUCS(4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.030E-04	ALEACH(4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(4)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Ra-228				
R016	Contaminated zone (cm**3/g)	9.100E+03	7.000E+01	---	DCNUCC(5)
R016	Unsaturated zone 1 (cm**3/g)	9.100E+03	7.000E+01	---	DCNUCU(51)
R016	Saturated zone (cm**3/g)	9.100E+03	7.000E+01	---	DCNUCS(5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.030E-04	ALEACH(5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(5)
R016	Distribution coefficients for Th-230				
R016	Contaminated zone (cm**3/g)	5.800E+03	6.000E+04	---	DCNUCC(7)
R016	Unsaturated zone 1 (cm**3/g)	5.800E+03	6.000E+04	---	DCNUCU(71)
R016	Saturated zone (cm**3/g)	5.800E+03	6.000E+04	---	DCNUCS(7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.616E-04	ALEACH(7)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(7)
R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	1.900E+03	5.000E+01	---	DCNUCC(8)
R016	Unsaturated zone 1 (cm**3/g)	1.900E+03	5.000E+01	---	DCNUCU(81)
R016	Saturated zone (cm**3/g)	1.900E+03	5.000E+01	---	DCNUCS(8)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.934E-04	ALEACH(8)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(8)
R016	Distribution coefficients for daughter Th-228				
R016	Contaminated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCC(6)
R016	Unsaturated zone 1 (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCU(61)
R016	Saturated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCS(6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.562E-05	ALEACH(6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(6)
R017	Inhalation rate (m**3/yr)	8.760E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	7.580E-07	1.000E-04	---	MLINH
R017	Exposure duration	2.500E+01	3.000E+01	---	ED
R017	Shielding factor inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor external gamma	4.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	0.000E+00	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	1.600E-01	2.500E-01	---	FOTD
R017	Shape factor flag external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m) ring 1:	not used	5.000E+01	---	RAD_SHAPE(1)
R017	Outer annular radius (m) ring 2:	not used	7.071E+01	---	RAD_SHAPE(2)
R017	Outer annular radius (m) ring 3:	not used	0.000E+00	---	RAD_SHAPE(3)
R017	Outer annular radius (m) ring 4:	not used	0.000E+00	---	RAD_SHAPE(4)
R017	Outer annular radius (m) ring 5:	not used	0.000E+00	---	RAD_SHAPE(5)

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R017    Outer annular radius (m) ring  6:            not used   0.000E+00            ---              RAD_SHAPE( 6)
R017    Outer annular radius (m) ring  7:            not used   0.000E+00            ---              RAD_SHAPE( 7)
R017    Outer annular radius (m) ring  8:            not used   0.000E+00            ---              RAD_SHAPE( 8)
R017    Outer annular radius (m) ring  9:            not used   0.000E+00            ---              RAD_SHAPE( 9)
R017    Outer annular radius (m) ring 10:            not used   0.000E+00            ---              RAD_SHAPE(10)
R017    Outer annular radius (m) ring 11:            not used   0.000E+00            ---              RAD_SHAPE(11)
R017    Outer annular radius (m) ring 12:            not used   0.000E+00            ---              RAD_SHAPE(12)
```

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA(1)
R017	Ring 2	not used	2.732E-01	---	FRACA(2)
R017	Ring 3	not used	0.000E+00	---	FRACA(3)
R017	Ring 4	not used	0.000E+00	---	FRACA(4)
R017	Ring 5	not used	0.000E+00	---	FRACA(5)
R017	Ring 6	not used	0.000E+00	---	FRACA(6)
R017	Ring 7	not used	0.000E+00	---	FRACA(7)
R017	Ring 8	not used	0.000E+00	---	FRACA(8)
R017	Ring 9	not used	0.000E+00	---	FRACA(9)
R017	Ring 10	not used	0.000E+00	---	FRACA(10)
R017	Ring 11	not used	0.000E+00	---	FRACA(11)
R017	Ring 12	not used	0.000E+00	---	FRACA(12)
R018	Fruits vegetables and grain consumption (kg/yr)	not used	1.600E+02	---	DIET(1)
R018	Leafy vegetable consumption (kg/yr)	not used	1.400E+01	---	DIET(2)
R018	Milk consumption (L/yr)	not used	9.200E+01	---	DIET(3)
R018	Meat and poultry consumption (kg/yr)	not used	6.300E+01	---	DIET(4)
R018	Fish consumption (kg/yr)	not used	5.400E+00	---	DIET(5)
R018	Other seafood consumption (kg/yr)	not used	9.000E-01	---	DIET(6)
R018	Soil ingestion rate (g/yr)	3.650E+01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	3.650E+02	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	1.000E+00	1.000E+00	---	FDW
R018	Contamination fraction of household water	not used	1.000E+00	---	FHHW
R018	Contamination fraction of livestock water	not used	1.000E+00	---	FLW
R018	Contamination fraction of irrigation water	not used	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	not used	5.000E-01	---	FR9
R018	Contamination fraction of plant food	not used	-1	---	FPLANT
R018	Contamination fraction of meat	not used	-1	---	FMEAT
R018	Contamination fraction of milk	not used	-1	---	FMILK
R019	Livestock fodder intake for meat (kg/day)	not used	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	not used	5.500E+01	---	LFI6
R019	Livestock water intake for meat (L/day)	not used	5.000E+01	---	LWI5
R019	Livestock water intake for milk (L/day)	not used	1.600E+02	---	LWI6
R019	Livestock soil intake (kg/day)	not used	5.000E-01	---	LSI
R019	Mass loading for foliar deposition (g/m**3)	not used	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	1.500E-01	1.500E-01	---	DM
R019	Depth of roots (m)	not used	9.000E-01	---	DROOT
R019	Drinking water fraction from ground water	1.000E+00	1.000E+00	---	FGWDW
R019	Household water fraction from ground water	not used	1.000E+00	---	FGWHH
R019	Livestock water fraction from ground water	not used	1.000E+00	---	FGWLW

R019	Irrigation fraction from ground water	not used	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	not used	7.000E-01	---	YV(1)
R19B	Wet weight crop yield for Leafy (kg/m**2)	not used	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	not used	1.100E+00	---	YV(3)
R19B	Growing Season for Non-Leafy (years)	not used	1.700E-01	---	TE(1)
R19B	Growing Season for Leafy (years)	not used	2.500E-01	---	TE(2)
R19B	Growing Season for Fodder (years)	not used	8.000E-02	---	TE(3)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R19B	Translocation Factor for Non-Leafy	not used	1.000E-01	---	TIV(1)
R19B	Translocation Factor for Leafy	not used	1.000E+00	---	TIV(2)
R19B	Translocation Factor for Fodder	not used	1.000E+00	---	TIV(3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RDRY(1)
R19B	Dry Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RDRY(2)
R19B	Dry Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RDRY(3)
R19B	Wet Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RWET(1)
R19B	Wet Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RWET(2)
R19B	Wet Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RWET(3)
R19B	Weathering Removal Constant for Vegetation	not used	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm**3)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (1/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits non-leafy vegetables and grain	1.400E+01	1.400E+01	---	STOR_T(1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ

R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA(1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA(2)
TITL	Number of graphical time points	32	---	---	NPTS

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	1	---	---	KYMAX

Summary of Pathway Selections

Pathway	User Selection
1 -- external gamma	active
2 -- inhalation (w/o radon)	active
3 -- plant ingestion	suppressed
4 -- meat ingestion	suppressed
5 -- milk ingestion	suppressed
6 -- aquatic foods	suppressed
7 -- drinking water	active
8 -- soil ingestion	active
9 -- radon	suppressed
Find peak pathway doses	suppressed

Summary : Residual Dose and Risk Assessment for Pit C Under Site Park Worker Scenario
File : C:\USERS\MRAHMAN\DOCUMENTS\OLD RESRAD FILES\SEAD 12 PIT C-SITE PARK WORKER.RAD

Contaminated Zone Dimensions
Area: 8404.00 square meters
Thickness: 0.15 meters
Cover Depth: 0.00 meters

Initial Soil Concentrations pCi/g

Cs-137	1.000E+00
H-3	1.000E+00
Pb-210	1.000E+00
Ra-226	1.000E+00
Ra-228	1.000E+00
Th-230	1.000E+00
U-234	1.000E+00

0

Total Dose TDOSE(t) mrem/yr
Basic Radiation Dose Limit = 2.500E+01 mrem/yr
Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	2.000E+00	2.400E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	2.804E+00	2.981E+00	3.047E+00	3.052E+00	3.042E+00	2.480E+00	1.718E+00	1.447E+00	1.326E+00	1.011E+00
M(t):	1.122E-01	1.192E-01	1.219E-01	1.221E-01	1.217E-01	9.919E-02	6.871E-02	5.790E-02	5.303E-02	4.044E-02

0Maximum TDOSE(t): 3.052E+00 mrem/yr at t = 2.405 ñ 0.005 years
0

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 2.405E+00 years
0 Water Independent Pathways (Inhalation excludes radon)

0 Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	4.223E-01	0.1384	4.572E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.723E-04	0.0001
H-3	0.000E+00	0.0000	7.436E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.136E-15	0.0000
Pb-210	8.310E-04	0.0003	3.237E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.859E-02	0.0126
Ra-226	1.388E+00	0.4547	1.623E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.134E-02	0.0037
Ra-228	1.173E+00	0.3842	2.866E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.431E-03	0.0028
Th-230	1.930E-03	0.0006	5.001E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.207E-03	0.0011
U-234	6.142E-05	0.0000	2.023E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.649E-03	0.0005
Total	2.985E+00	0.9783	1.038E-04	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.349E-02	0.0208

Summary : Residual Dose and Risk Assessment for Pit C Under Site Park Worker Scenario
File : C:\USERS\MRAHMAN\DOCUMENTS\OLD RESRAD FILES\SEAD 12 PIT C-SITE PARK WORKER.RAD

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 2.405E+00 years

0 Water Dependent Pathways

0 Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.225E-01	0.1385
H-3	2.693E-03	0.0009	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.693E-03	0.0009
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.943E-02	0.0129
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.399E+00	0.4585
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.181E+00	0.3870
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.187E-03	0.0017
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.730E-03	0.0006
Total	2.693E-03	0.0009	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.052E+00	1.0000

0*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	4.471E-01	0.1594	4.843E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.885E-04	0.0001
H-3	0.000E+00	0.0000	3.338E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.099E-08	0.0000
Pb-210	8.992E-04	0.0003	3.506E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.180E-02	0.0149
Ra-226	1.390E+00	0.4956	1.375E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.363E-03	0.0030
Ra-228	9.018E-01	0.3216	8.940E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.663E-03	0.0031
Th-230	4.839E-04	0.0002	5.008E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.201E-03	0.0011
U-234	6.147E-05	0.0000	2.027E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.652E-03	0.0006
Total	2.740E+00	0.9772	8.752E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.396E-02	0.0228

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years
Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.473E-01	0.1595
H-3	9.693E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.308E-05	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.270E-02	0.0152
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.398E+00	0.4986
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.105E-01	0.3247
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.735E-03	0.0013
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.734E-03	0.0006
Total	9.693E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.804E+00	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	4.366E-01	0.1465	4.729E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.817E-04	0.0001
H-3	0.000E+00	0.0000	2.194E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.351E-11	0.0000
Pb-210	8.702E-04	0.0003	3.391E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.043E-02	0.0136
Ra-226	1.389E+00	0.4660	1.481E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.633E-03	0.0032
Ra-228	1.087E+00	0.3646	2.061E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.804E-03	0.0030
Th-230	1.086E-03	0.0004	5.005E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.203E-03	0.0011
U-234	6.144E-05	0.0000	2.026E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.651E-03	0.0006
Total	2.914E+00	0.9776	9.580E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.401E-02	0.0215

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years
Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.369E-01	0.1466
H-3	2.564E-03	0.0009	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.564E-03	0.0009
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.131E-02	0.0139
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.399E+00	0.4692
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.096E+00	0.3675
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.339E-03	0.0015
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.732E-03	0.0006
Total	2.564E-03	0.0009	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.981E+00	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 2.000E+00 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	4.263E-01	0.1399	4.616E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.750E-04	0.0001
H-3	0.000E+00	0.0000	1.442E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.203E-14	0.0000
Pb-210	8.421E-04	0.0003	3.281E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.911E-02	0.0128
Ra-226	1.388E+00	0.4556	1.583E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.086E-02	0.0036
Ra-228	1.163E+00	0.3818	2.709E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.586E-03	0.0028
Th-230	1.687E-03	0.0006	5.002E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.206E-03	0.0011
U-234	6.143E-05	0.0000	2.024E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.649E-03	0.0005
Total	2.980E+00	0.9782	1.022E-04	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.369E-02	0.0209

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 2.000E+00 years
Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.266E-01	0.1400
H-3	2.754E-03	0.0009	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.754E-03	0.0009
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.996E-02	0.0131
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.399E+00	0.4592
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.172E+00	0.3846
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.943E-03	0.0016
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.731E-03	0.0006
Total	2.754E-03	0.0009	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.047E+00	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 2.400E+00 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	4.223E-01	0.1384	4.572E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.724E-04	0.0001
H-3	0.000E+00	0.0000	7.694E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.175E-15	0.0000
Pb-210	8.311E-04	0.0003	3.237E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.860E-02	0.0126
Ra-226	1.388E+00	0.4547	1.623E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.134E-02	0.0037
Ra-228	1.172E+00	0.3842	2.865E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.433E-03	0.0028
Th-230	1.927E-03	0.0006	5.001E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.207E-03	0.0011
U-234	6.142E-05	0.0000	2.023E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.649E-03	0.0005
Total	2.985E+00	0.9783	1.038E-04	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.350E-02	0.0208

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 2.400E+00 years
Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.226E-01	0.1385
H-3	2.694E-03	0.0009	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.694E-03	0.0009
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.943E-02	0.0129
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.399E+00	0.4585
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.181E+00	0.3870
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.184E-03	0.0017
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.730E-03	0.0006
Total	2.694E-03	0.0009	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.052E+00	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	4.163E-01	0.1368	4.507E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.685E-04	0.0001
H-3	0.000E+00	0.0000	9.480E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.448E-17	0.0000
Pb-210	8.149E-04	0.0003	3.174E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.784E-02	0.0124
Ra-226	1.387E+00	0.4559	1.682E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.204E-02	0.0040
Ra-228	1.170E+00	0.3846	3.015E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.154E-03	0.0027
Th-230	2.287E-03	0.0008	5.000E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.209E-03	0.0011
U-234	6.141E-05	0.0000	2.022E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.648E-03	0.0005
Total	2.977E+00	0.9783	1.052E-04	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.316E-02	0.0208

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years
Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.166E-01	0.1369
H-3	2.609E-03	0.0009	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.609E-03	0.0009
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.865E-02	0.0127
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.399E+00	0.4599
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.178E+00	0.3872
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.546E-03	0.0018
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.729E-03	0.0006
Total	2.609E-03	0.0009	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.042E+00	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+01 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	3.526E-01	0.1422	3.810E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.270E-04	0.0001
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	6.476E-04	0.0003	2.516E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.999E-02	0.0121
Ra-226	1.381E+00	0.5568	2.285E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.929E-02	0.0078
Ra-228	6.806E-01	0.2745	2.078E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.194E-03	0.0017
Th-230	6.474E-03	0.0026	4.980E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.244E-03	0.0013
U-234	6.147E-05	0.0000	2.010E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.638E-03	0.0007
Total	2.421E+00	0.9763	9.548E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.858E-02	0.0236

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+01 years
Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.529E-01	0.1423
H-3	2.282E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.282E-21	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.064E-02	0.0124
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.400E+00	0.5645
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.848E-01	0.2762
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.768E-03	0.0039
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.719E-03	0.0007
Total	2.282E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.480E+00	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	2.194E-01	0.1277	2.358E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.404E-04	0.0001
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	3.359E-04	0.0002	1.295E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.544E-02	0.0090
Ra-226	1.362E+00	0.7928	3.373E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.241E-02	0.0189
Ra-228	6.431E-02	0.0374	2.002E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.864E-04	0.0002
Th-230	1.827E-02	0.0106	4.926E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.436E-03	0.0020
U-234	6.305E-05	0.0000	1.975E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.609E-03	0.0009
Total	1.664E+00	0.9689	7.568E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.343E-02	0.0311

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years
Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.195E-01	0.1278
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.578E-02	0.0092
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.394E+00	0.8117
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.470E-02	0.0377
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.176E-02	0.0127
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.692E-03	0.0010
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.718E+00	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	4.166E-02	0.0288	4.391E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.616E-05	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	3.374E-05	0.0000	1.268E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.512E-03	0.0010
Ra-226	1.298E+00	0.8964	4.203E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.281E-02	0.0296
Ra-228	1.366E-05	0.0000	4.182E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.069E-08	0.0000
Th-230	5.771E-02	0.0399	4.741E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.489E-03	0.0031
U-234	8.443E-05	0.0001	1.856E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.512E-03	0.0010
Total	1.397E+00	0.9652	7.031E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.034E-02	0.0348

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years
Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.169E-02	0.0288
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.546E-03	0.0011
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.340E+00	0.9260
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.374E-05	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.225E-02	0.0430
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.615E-03	0.0011
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.447E+00	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	3.605E-04	0.0003	3.590E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.138E-07	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	4.742E-08	0.0000	1.650E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.967E-06	0.0000
Ra-226	1.125E+00	0.8487	3.561E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.645E-02	0.0275
Ra-228	4.365E-16	0.0000	1.271E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.452E-18	0.0000
Th-230	1.550E-01	0.1169	4.232E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.235E-03	0.0055
U-234	2.594E-04	0.0002	1.548E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.265E-03	0.0010
Total	1.281E+00	0.9660	6.136E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.495E-02	0.0339

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years
Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.607E-04	0.0003
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.015E-06	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.162E+00	0.8762
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.389E-16	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.623E-01	0.1224
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.540E-03	0.0012
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.326E+00	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	2.049E-11	0.0000	1.639E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.765E-15	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	4.806E-18	0.0000	1.213E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.446E-16	0.0000
Ra-226	6.442E-01	0.6372	1.668E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.707E-02	0.0169
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	3.373E-01	0.3336	2.618E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.028E-02	0.0102
U-234	1.481E-03	0.0015	7.604E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.521E-04	0.0006
Total	9.830E-01	0.9723	3.545E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.800E-02	0.0277

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years
Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.050E-11	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.494E-16	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.613E-01	0.6541
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.476E-01	0.3438
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.141E-03	0.0021
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.011E+00	1.0000

*Sum of all water independent and dependent pathways.

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

0 Parent (i)	Product (j)	Thread Fraction	DSR(jt) At Time in Years (mrem/yr)/(pCi/g) 0.000E+00	1.000E+00	2.000E+00	2.400E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Cs-137+D	Cs-137+D	1.000E+00	4.473E-01	4.369E-01	4.266E-01	4.226E-01	4.166E-01	3.529E-01	2.195E-01	4.169E-02	3.607E-04	2.050E-11
0H-3	H-3	1.000E+00	1.308E-05	2.564E-03	2.754E-03	2.694E-03	2.609E-03	2.282E-21	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0Pb-210+D	Pb-210+D	1.000E+00	4.270E-02	4.131E-02	3.996E-02	3.943E-02	3.865E-02	3.064E-02	1.578E-02	1.546E-03	2.015E-06	1.494E-16
0Ra-226+D	Ra-226+D	1.000E+00	1.398E+00	1.397E+00	1.396E+00	1.395E+00	1.395E+00	1.388E+00	1.369E+00	1.304E+00	1.130E+00	6.464E-01
Ra-226+D	Pb-210+D	1.000E+00	6.671E-04	1.971E-03	3.232E-03	3.724E-03	4.450E-03	1.190E-02	2.546E-02	3.659E-02	3.141E-02	1.484E-02
Ra-226+D	-DSR(j)		1.398E+00	1.399E+00	1.399E+00	1.399E+00	1.399E+00	1.400E+00	1.394E+00	1.340E+00	1.162E+00	6.613E-01
0Ra-228+D	Ra-228+D	1.000E+00	7.240E-01	6.416E-01	5.686E-01	5.418E-01	5.039E-01	2.163E-01	1.931E-02	4.105E-06	1.315E-16	0.000E+00
Ra-228+D	Th-228+D	1.000E+00	1.865E-01	4.539E-01	6.031E-01	6.392E-01	6.743E-01	4.685E-01	4.539E-02	9.640E-06	3.075E-16	0.000E+00
Ra-228+D	-DSR(j)		9.105E-01	1.096E+00	1.172E+00	1.181E+00	1.178E+00	6.848E-01	6.470E-02	1.374E-05	4.389E-16	0.000E+00
0Th-230	Th-230	1.000E+00	3.432E-03	3.430E-03	3.429E-03	3.428E-03	3.427E-03	3.413E-03	3.376E-03	3.246E-03	2.889E-03	1.787E-03
Th-230	Ra-226+D	1.000E+00	3.027E-04	9.078E-04	1.512E-03	1.754E-03	2.116E-03	6.326E-03	1.819E-02	5.782E-02	1.555E-01	3.383E-01
Th-230	Pb-210+D	1.000E+00	9.659E-08	6.695E-07	1.797E-06	2.400E-06	3.461E-06	2.865E-05	1.961E-04	1.184E-03	3.857E-03	7.484E-03
Th-230	-DSR(j)		3.735E-03	4.339E-03	4.943E-03	5.184E-03	5.546E-03	9.768E-03	2.176E-02	6.225E-02	1.623E-01	3.476E-01
0U-234	U-234	1.000E+00	1.734E-03	1.732E-03	1.731E-03	1.730E-03	1.729E-03	1.718E-03	1.688E-03	1.586E-03	1.321E-03	6.462E-04
U-234	Th-230	1.000E+00	1.545E-08	4.631E-08	7.713E-08	8.944E-08	1.079E-07	3.221E-07	9.223E-07	2.889E-06	7.444E-06	1.374E-05
U-234	Ra-226+D	1.000E+00	9.083E-10	6.355E-09	1.724E-08	2.312E-08	3.356E-08	2.990E-07	2.494E-06	2.603E-05	2.073E-04	1.449E-03
U-234	Pb-210+D	1.000E+00	2.177E-13	3.241E-12	1.393E-11	2.145E-11	3.718E-11	9.287E-10	1.931E-08	4.293E-07	4.680E-06	3.116E-05
U-234	-DSR(j)		1.734E-03	1.732E-03	1.731E-03	1.730E-03	1.729E-03	1.719E-03	1.692E-03	1.615E-03	1.540E-03	2.141E-03

The DSR includes contributions from associated (half-life ó 180 days) daughters.
0

Single Radionuclide Soil Guidelines G(it) in pCi/g
Basic Radiation Dose Limit = 2.500E+01 mrem/yr

0Nuclide (i)	t= 0.000E+00	1.000E+00	2.000E+00	2.400E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Cs-137	5.589E+01	5.723E+01	5.860E+01	5.916E+01	6.001E+01	7.085E+01	1.139E+02	5.997E+02	6.931E+04	1.220E+12
H-3	1.911E+06	9.749E+03	9.078E+03	9.280E+03	9.584E+03	*9.597E+15	*9.597E+15	*9.597E+15	*9.597E+15	*9.597E+15
Pb-210	5.855E+02	6.052E+02	6.257E+02	6.340E+02	6.468E+02	8.159E+02	1.584E+03	1.617E+04	1.241E+07	*7.634E+13
Ra-226	1.788E+01	1.788E+01	1.787E+01	1.787E+01	1.787E+01	1.786E+01	1.793E+01	1.865E+01	2.152E+01	3.780E+01
Ra-228	2.746E+01	2.282E+01	2.134E+01	2.117E+01	2.122E+01	3.651E+01	3.864E+02	1.819E+06	*2.726E+14	*2.726E+14
Th-230	6.693E+03	5.762E+03	5.058E+03	4.823E+03	4.508E+03	2.559E+03	1.149E+03	4.016E+02	1.541E+02	7.193E+01
U-234	1.442E+04	1.443E+04	1.444E+04	1.445E+04	1.446E+04	1.454E+04	1.478E+04	1.548E+04	1.623E+04	1.168E+04

*At specific activity limit

Summary : Residual Dose and Risk Assessment for Pit C Under Site Park Worker Scenario
File : C:\USERS\MRAHMAN\DOCUMENTS\OLD RESRAD FILES\SEAD 12 PIT C-SITE PARK WORKER.RAD

Summed Dose/Source Ratios DSR(it) in (mrem/yr)/(pCi/g)
and Single Radionuclide Soil Guidelines G(it) in pCi/g
at tmin = time of minimum single radionuclide soil guideline
and at tmax = time of maximum total dose = 2.405 ñ 0.005 years

0Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(itmin)	G(itmin) (pCi/g)	DSR(itmax)	G(itmax) (pCi/g)
Cs-137	1.000E+00	0.000E+00	4.473E-01	5.589E+01	4.225E-01	5.917E+01
H-3	1.000E+00	1.379 ñ 0.003	2.830E-03	8.834E+03	2.693E-03	9.282E+03
Pb-210	1.000E+00	0.000E+00	4.270E-02	5.855E+02	3.943E-02	6.341E+02
Ra-226	1.000E+00	9.46 ñ 0.02	1.400E+00	1.786E+01	1.399E+00	1.787E+01
Ra-228	1.000E+00	2.601 ñ 0.005	1.182E+00	2.115E+01	1.181E+00	2.117E+01
Th-230	1.000E+00	1.000E+03	3.476E-01	7.193E+01	5.187E-03	4.820E+03
U-234	1.000E+00	1.000E+03	2.141E-03	1.168E+04	1.730E-03	1.445E+04

Summary : Residual Dose and Risk Assessment for Pit C Under Site Park Worker Scenario
File : C:\USERS\MRAHMAN\DOCUMENTS\OLD RESRAD FILES\SEAD 12 PIT C-SITE PARK WORKER.RAD

Individual Nuclide Dose Summed Over All Pathways
Parent Nuclide and Branch Fraction Indicated

0Nuclide (j)	Parent (i)	THF(i)	DOSE(jt) mrem/yr t= 0.000E+00	1.000E+00	2.000E+00	2.400E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Cs-137	Cs-137	1.000E+00	4.473E-01	4.369E-01	4.266E-01	4.226E-01	4.166E-01	3.529E-01	2.195E-01	4.169E-02	3.607E-04	2.050E-11
0H-3	H-3	1.000E+00	1.308E-05	2.564E-03	2.754E-03	2.694E-03	2.609E-03	2.282E-21	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0Pb-210	Pb-210	1.000E+00	4.270E-02	4.131E-02	3.996E-02	3.943E-02	3.865E-02	3.064E-02	1.578E-02	1.546E-03	2.015E-06	1.494E-16
Pb-210	Ra-226	1.000E+00	6.671E-04	1.971E-03	3.232E-03	3.724E-03	4.450E-03	1.190E-02	2.546E-02	3.659E-02	3.141E-02	1.484E-02
Pb-210	Th-230	1.000E+00	9.659E-08	6.695E-07	1.797E-06	2.400E-06	3.461E-06	2.865E-05	1.961E-04	1.184E-03	3.857E-03	7.484E-03
Pb-210	U-234	1.000E+00	2.177E-13	3.241E-12	1.393E-11	2.145E-11	3.718E-11	9.287E-10	1.931E-08	4.293E-07	4.680E-06	3.116E-05
Pb-210	-DOSE(j)		4.337E-02	4.328E-02	4.319E-02	4.316E-02	4.311E-02	4.257E-02	4.144E-02	3.932E-02	3.527E-02	2.236E-02
0Ra-226	Ra-226	1.000E+00	1.398E+00	1.397E+00	1.396E+00	1.395E+00	1.395E+00	1.388E+00	1.369E+00	1.304E+00	1.130E+00	6.464E-01
Ra-226	Th-230	1.000E+00	3.027E-04	9.078E-04	1.512E-03	1.754E-03	2.116E-03	6.326E-03	1.819E-02	5.782E-02	1.555E-01	3.383E-01
Ra-226	U-234	1.000E+00	9.083E-10	6.355E-09	1.724E-08	2.312E-08	3.356E-08	2.990E-07	2.494E-06	2.603E-05	2.073E-04	1.449E-03
Ra-226	-DOSE(j)		1.398E+00	1.398E+00	1.397E+00	1.397E+00	1.397E+00	1.394E+00	1.387E+00	1.362E+00	1.286E+00	9.862E-01
0Ra-228	Ra-228	1.000E+00	7.240E-01	6.416E-01	5.686E-01	5.418E-01	5.039E-01	2.163E-01	1.931E-02	4.105E-06	1.315E-16	0.000E+00
0Th-228	Ra-228	1.000E+00	1.865E-01	4.539E-01	6.031E-01	6.392E-01	6.743E-01	4.685E-01	4.539E-02	9.640E-06	3.075E-16	0.000E+00
0Th-230	Th-230	1.000E+00	3.432E-03	3.430E-03	3.429E-03	3.428E-03	3.427E-03	3.413E-03	3.376E-03	3.246E-03	2.889E-03	1.787E-03
Th-230	U-234	1.000E+00	1.545E-08	4.631E-08	7.713E-08	8.944E-08	1.079E-07	3.221E-07	9.223E-07	2.889E-06	7.444E-06	1.374E-05
Th-230	-DOSE(j)		3.432E-03	3.430E-03	3.429E-03	3.428E-03	3.427E-03	3.414E-03	3.377E-03	3.249E-03	2.896E-03	1.801E-03
0U-234	U-234	1.000E+00	1.734E-03	1.732E-03	1.731E-03	1.730E-03	1.729E-03	1.718E-03	1.688E-03	1.586E-03	1.321E-03	6.462E-04

THF(i) is the thread fraction of the parent nuclide.

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

0Nuclide (j)	Parent (i)	THF(i)	S(jt) pCi/g t= 0.000E+00	1.000E+00	2.000E+00	2.400E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Cs-137	Cs-137	1.000E+00	1.000E+00	9.767E-01	9.539E-01	9.449E-01	9.317E-01	7.898E-01	4.927E-01	9.444E-02	8.422E-04	5.642E-11
0H-3	H-3	1.000E+00	1.000E+00	6.576E-04	4.324E-07	2.307E-08	2.843E-10	1.511E-32	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0Pb-210	Pb-210	1.000E+00	1.000E+00	9.677E-01	9.365E-01	9.243E-01	9.063E-01	7.205E-01	3.740E-01	3.768E-02	5.349E-05	5.767E-15
Pb-210	Ra-226	1.000E+00	0.000E+00	3.057E-02	6.014E-02	7.169E-02	8.874E-02	2.643E-01	5.880E-01	8.772E-01	8.205E-01	5.638E-01
Pb-210	Th-230	1.000E+00	0.000E+00	6.658E-06	2.634E-05	3.776E-05	5.861E-05	6.039E-04	4.445E-03	2.820E-02	1.006E-01	2.841E-01
Pb-210	U-234	1.000E+00	0.000E+00	2.003E-11	1.589E-10	2.737E-10	5.318E-10	1.859E-08	4.299E-07	1.017E-05	1.218E-04	1.182E-03
Pb-210	-S(j):		1.000E+00	9.983E-01	9.967E-01	9.961E-01	9.951E-01	9.853E-01	9.664E-01	9.431E-01	9.213E-01	8.490E-01
0Ra-226	Ra-226	1.000E+00	1.000E+00	9.995E-01	9.989E-01	9.987E-01	9.984E-01	9.947E-01	9.840E-01	9.478E-01	8.514E-01	5.849E-01
Ra-226	Th-230	1.000E+00	0.000E+00	4.331E-04	8.658E-04	1.039E-03	1.298E-03	4.317E-03	1.286E-02	4.182E-02	1.169E-01	3.059E-01
Ra-226	U-234	1.000E+00	0.000E+00	1.949E-09	7.793E-09	1.122E-08	1.753E-08	1.942E-07	1.734E-06	1.873E-05	1.556E-04	1.310E-03
Ra-226	-S(j):		1.000E+00	9.999E-01	9.998E-01	9.998E-01	9.997E-01	9.990E-01	9.969E-01	9.896E-01	9.685E-01	8.922E-01
0Ra-228	Ra-228	1.000E+00	1.000E+00	8.863E-01	7.856E-01	7.486E-01	6.963E-01	2.992E-01	2.680E-02	5.757E-06	1.908E-16	0.000E+00
0Th-228	Ra-228	1.000E+00	0.000E+00	2.853E-01	4.514E-01	4.939E-01	5.383E-01	4.086E-01	4.014E-02	8.631E-06	2.861E-16	0.000E+00
0Th-230	Th-230	1.000E+00	1.000E+00	9.998E-01	9.997E-01	9.996E-01	9.995E-01	9.983E-01	9.949E-01	9.831E-01	9.501E-01	8.431E-01
Th-230	U-234	1.000E+00	0.000E+00	8.999E-06	1.799E-05	2.159E-05	2.698E-05	8.972E-05	2.674E-04	8.707E-04	2.444E-03	6.478E-03
Th-230	-S(j):		1.000E+00	9.998E-01	9.997E-01	9.996E-01	9.995E-01	9.984E-01	9.952E-01	9.840E-01	9.525E-01	8.496E-01
0U-234	U-234	1.000E+00	1.000E+00	9.995E-01	9.990E-01	9.988E-01	9.985E-01	9.951E-01	9.852E-01	9.516E-01	8.617E-01	6.088E-01

THF(i) is the thread fraction of the parent nuclide.
0RESCALC.EXE execution time = 0.43 seconds

Intrisk : Residual Dose and Risk Assessment for Pit C Under Site Park Worker Scenario
File : C:\USERS\MRAHMAN\DOCUMENTS\OLD RESRAD FILES\SEAD 12 PIT C-SITE PARK WORKER.RAD

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Cancer Risk Slope Factors Summary Table
Risk Library: FGR 13 Morbidity

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Menu	Parameter	Current Value	Base Case*	Parameter Name
Sf-1	Ground external radiation slope factors, 1/yr per (pCi/g):			
Sf-1	Cs-137+D	2.55E-06	5.32E-10	SLPF(1,1)
Sf-1	H-3	0.00E+00	0.00E+00	SLPF(2,1)
Sf-1	Pb-210+D	4.21E-09	1.41E-09	SLPF(3,1)
Sf-1	Ra-226+D	8.49E-06	2.29E-08	SLPF(4,1)
Sf-1	Ra-228+D	4.53E-06	0.00E+00	SLPF(5,1)
Sf-1	Th-228+D	7.76E-06	5.59E-09	SLPF(6,1)
Sf-1	Th-230	8.19E-10	8.19E-10	SLPF(7,1)
Sf-1	U-234	2.52E-10	2.52E-10	SLPF(8,1)
Sf-2	Inhalation, slope factors, 1/(pCi):			
Sf-2	Cs-137+D	1.12E-10	1.12E-10	SLPF(1,2)
Sf-2	H-3	8.51E-13	8.51E-13	SLPF(2,2)
Sf-2	Pb-210+D	3.08E-08	1.58E-08	SLPF(3,2)
Sf-2	Ra-226+D	2.83E-08	2.82E-08	SLPF(4,2)
Sf-2	Ra-228+D	4.37E-08	4.37E-08	SLPF(5,2)
Sf-2	Th-228+D	1.44E-07	1.32E-07	SLPF(6,2)
Sf-2	Th-230	3.40E-08	3.40E-08	SLPF(7,2)
Sf-2	U-234	2.78E-08	2.78E-08	SLPF(8,2)
Sf-3	Food ingestion, slope factors, 1/(pCi):			
Sf-3	Cs-137+D	3.74E-11	3.74E-11	SLPF(1,3)
Sf-3	H-3	1.44E-13	1.44E-13	SLPF(2,3)
Sf-3	Pb-210+D	3.44E-09	1.18E-09	SLPF(3,3)
Sf-3	Ra-226+D	5.15E-10	5.14E-10	SLPF(4,3)
Sf-3	Ra-228+D	1.43E-09	1.43E-09	SLPF(5,3)
Sf-3	Th-228+D	4.22E-10	1.48E-10	SLPF(6,3)
Sf-3	Th-230	1.19E-10	1.19E-10	SLPF(7,3)
Sf-3	U-234	9.55E-11	9.55E-11	SLPF(8,3)
Sf-3	Water ingestion, slope factors, 1/(pCi):			
Sf-3	Cs-137+D	3.04E-11	3.04E-11	SLPF(1,4)
Sf-3	H-3	1.12E-13	1.12E-13	SLPF(2,4)
Sf-3	Pb-210+D	2.66E-09	8.81E-10	SLPF(3,4)
Sf-3	Ra-226+D	3.86E-10	3.85E-10	SLPF(4,4)
Sf-3	Ra-228+D	1.04E-09	1.04E-09	SLPF(5,4)
Sf-3	Th-228+D	2.99E-10	1.07E-10	SLPF(6,4)
Sf-3	Th-230	9.10E-11	9.10E-11	SLPF(7,4)
Sf-3	U-234	7.07E-11	7.07E-11	SLPF(8,4)
Sf-3	Soil ingestion, slope factors, 1/(pCi):			

Sf-3	Cs-137+D	3.74E-11	3.74E-11	SLPF(1,5)
Sf-3	H-3	1.44E-13	1.44E-13	SLPF(2,5)
Sf-3	Pb-210+D	3.44E-09	1.18E-09	SLPF(3,5)
Sf-3	Ra-226+D	5.15E-10	5.14E-10	SLPF(4,5)
Sf-3	Ra-228+D	1.43E-09	1.43E-09	SLPF(5,5)
Sf-3	Th-228+D	4.22E-10	1.48E-10	SLPF(6,5)
Sf-3	Th-230	1.19E-10	1.19E-10	SLPF(7,5)
Sf-3	U-234	9.55E-11	9.55E-11	SLPF(8,5)

Cancer Risk Slope Factors Summary Table (continued)
Risk Library: FGR 13 Morbidity

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Menu	Parameter	Current Value	Base Case*	Parameter Name
Sf-Rn	Radon Inhalation slope factors, 1/(pCi):			
Sf-Rn	Rn-222	1.80E-12	1.80E-12	SLPFRN(1,1)
Sf-Rn	Po-218	3.70E-12	3.70E-12	SLPFRN(1,2)
Sf-Rn	Pb-214	6.20E-12	6.20E-12	SLPFRN(1,3)
Sf-Rn	Bi-214	1.50E-11	1.50E-11	SLPFRN(1,4)
Sf-Rn	Rn-220	1.90E-13	1.90E-13	SLPFRN(2,1)
Sf-Rn	Po-216	3.00E-15	3.00E-15	SLPFRN(2,2)
Sf-Rn	Pb-212	3.90E-11	3.90E-11	SLPFRN(2,3)
Sf-Rn	Bi-212	3.70E-11	3.70E-11	SLPFRN(2,4)
Sf-Rn	Radon K factors, (mrem/WLM):			
Sf-Rn	Rn-222 Indoor	7.60E+02	7.60E+02	KFACTR(1,1)
Sf-Rn	Rn-222 Outdoor	5.70E+02	5.70E+02	KFACTR(1,2)
Sf-Rn	Rn-220 Indoor	1.50E+02	1.50E+02	KFACTR(2,1)
Sf-Rn	Rn-220 Outdoor	2.50E+02	2.50E+02	KFACTR(2,2)

*Base Case means Default.Lib w/o Associate Nuclide contributions.

Risk Slope and Environmental Transport Factors for the Ground Pathway

0Nuclide (i)	Slope(i)*	ETFG(i,t) At Time in Years (dimensionless)									
	t=	0.000E+00	1.000E+00	2.000E+00	2.400E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ac-228	4.530E-06	1.272E-01	1.271E-01	1.271E-01	1.271E-01	1.271E-01	1.270E-01	1.266E-01	1.253E-01	1.211E-01	1.015E-01
At-218	3.570E-09	1.545E-01	1.545E-01	1.545E-01	1.545E-01	1.545E-01	1.545E-01	1.545E-01	1.546E-01	1.548E-01	1.545E-01
Ba-137m	2.690E-06	1.326E-01	1.326E-01	1.325E-01	1.325E-01	1.325E-01	1.324E-01	1.321E-01	1.308E-01	1.269E-01	1.077E-01
Bi-210	2.760E-09	1.455E-01	1.455E-01	1.455E-01	1.455E-01	1.455E-01	1.454E-01	1.452E-01	1.444E-01	1.419E-01	1.272E-01
Bi-212	8.870E-07	1.282E-01	1.282E-01	1.282E-01	1.282E-01	1.282E-01	1.280E-01	1.277E-01	1.263E-01	1.222E-01	1.024E-01
Bi-214	7.480E-06	1.222E-01	1.222E-01	1.222E-01	1.222E-01	1.222E-01	1.220E-01	1.216E-01	1.202E-01	1.158E-01	9.588E-02
Cs-137	5.320E-10	1.493E-01	1.493E-01	1.493E-01	1.493E-01	1.493E-01	1.492E-01	1.491E-01	1.485E-01	1.467E-01	1.349E-01
H-3	0.000E+00	1.600E-01	1.600E-01	1.600E-01	1.600E-01	1.600E-01	1.600E-01	1.600E-01	1.600E-01	1.600E-01	1.600E-01
Pb-210	1.410E-09	1.563E-01	1.563E-01	1.563E-01	1.563E-01	1.563E-01	1.563E-01	1.564E-01	1.564E-01	1.565E-01	1.565E-01
Pb-212	5.090E-07	1.441E-01	1.440E-01	1.440E-01	1.440E-01	1.440E-01	1.439E-01	1.437E-01	1.429E-01	1.402E-01	1.246E-01
Pb-214	9.820E-07	1.391E-01	1.391E-01	1.390E-01	1.390E-01	1.390E-01	1.389E-01	1.386E-01	1.376E-01	1.342E-01	1.166E-01
Po-210	3.950E-11	1.304E-01	1.303E-01	1.303E-01	1.303E-01	1.303E-01	1.302E-01	1.298E-01	1.285E-01	1.245E-01	1.048E-01
Po-212	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Po-214	3.860E-10	1.296E-01	1.295E-01	1.295E-01	1.295E-01	1.295E-01	1.294E-01	1.290E-01	1.277E-01	1.237E-01	1.043E-01
Po-216	7.870E-11	1.297E-01	1.296E-01	1.296E-01	1.296E-01	1.296E-01	1.295E-01	1.291E-01	1.278E-01	1.238E-01	1.042E-01
Po-218	4.260E-11	1.296E-01	1.296E-01	1.296E-01	1.296E-01	1.295E-01	1.294E-01	1.291E-01	1.278E-01	1.237E-01	1.041E-01
Ra-224	3.720E-08	1.431E-01	1.431E-01	1.431E-01	1.431E-01	1.430E-01	1.430E-01	1.427E-01	1.418E-01	1.389E-01	1.225E-01
Ra-226	2.290E-08	1.448E-01	1.448E-01	1.448E-01	1.448E-01	1.448E-01	1.447E-01	1.445E-01	1.437E-01	1.411E-01	1.259E-01
Ra-228	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Rn-220	1.700E-09	1.336E-01	1.336E-01	1.336E-01	1.336E-01	1.336E-01	1.335E-01	1.331E-01	1.319E-01	1.281E-01	1.090E-01
Rn-222	1.740E-09	1.342E-01	1.341E-01	1.341E-01	1.341E-01	1.341E-01	1.340E-01	1.337E-01	1.325E-01	1.287E-01	1.098E-01
Th-228	5.590E-09	1.485E-01	1.484E-01	1.484E-01	1.484E-01	1.484E-01	1.484E-01	1.482E-01	1.477E-01	1.457E-01	1.330E-01
Th-230	8.190E-10	1.512E-01	1.512E-01	1.512E-01	1.512E-01	1.512E-01	1.512E-01	1.511E-01	1.508E-01	1.497E-01	1.408E-01
Tl-208	1.760E-05	1.140E-01	1.140E-01	1.139E-01	1.139E-01	1.139E-01	1.138E-01	1.134E-01	1.119E-01	1.074E-01	8.765E-02
Tl-210	0.000E+00	1.600E-01	1.600E-01	1.600E-01	1.600E-01	1.600E-01	1.600E-01	1.600E-01	1.600E-01	1.600E-01	1.600E-01
U-234	2.520E-10	1.531E-01	1.531E-01	1.531E-01	1.531E-01	1.530E-01	1.530E-01	1.530E-01	1.527E-01	1.519E-01	1.449E-01

* - Units are 1/yr per (pCi/g) at infinite depth and area. Multiplication by ETFG(i,t) converts to site conditions.

Intrisk : Residual Dose and Risk Assessment for Pit C Under Site Park Worker Scenario
File : C:\USERS\MRAHMAN\DOCUMENTS\OLD RESRAD FILES\SEAD 12 PIT C-SITE PARK WORKER.RAD

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 0.000E+00 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon) Inhalation	Plant	Meat	Milk	Soil	Water Dependent Pathways Water	Fish	Plant	Meat	Milk	Total Ingestion*
Cs-137	1.537E-04	0.000E+00	0.000E+00	0.000E+00	5.840E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.840E+00
H-3	3.824E+02	0.000E+00	0.000E+00	0.000E+00	5.840E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.840E+00
Pb-210	1.537E-04	0.000E+00	0.000E+00	0.000E+00	5.840E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.840E+00
Ra-226	1.537E-04	0.000E+00	0.000E+00	0.000E+00	5.840E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.840E+00
Ra-228	1.537E-04	0.000E+00	0.000E+00	0.000E+00	5.840E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.840E+00
Th-228	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	1.537E-04	0.000E+00	0.000E+00	0.000E+00	5.840E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.840E+00
U-234	1.537E-04	0.000E+00	0.000E+00	0.000E+00	5.840E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.840E+00

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil and water-dependent water, fish, plant, meat, milk pathways

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of Radon and its Decay Products as pCi/yr at t= 0.000E+00 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p) and Fraction of Total Risk at t= 0.000E+00 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground risk	Ground fract.	Inhalation risk	Inhalation fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	Soil risk	Soil fract.
Cs-137	8.437E-06	0.1686	4.303E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.460E-09	0.0001
H-3	0.000E+00	0.0000	8.135E-09	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.102E-11	0.0000
Pb-210	1.568E-08	0.0003	1.181E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.027E-07	0.0100
Ra-226	2.636E-05	0.5267	1.086E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.515E-08	0.0015
Ra-228	1.440E-05	0.2877	1.681E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.092E-07	0.0042
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	3.097E-09	0.0001	1.306E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.737E-08	0.0003
U-234	9.643E-10	0.0000	1.068E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.394E-08	0.0003
Total	4.922E-05	0.9834	8.767E-09	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.238E-07	0.0165

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 0.000E+00 years

Water Dependent Pathways

Radio-	Water		Fish		Plant		Meat		Milk		All Pathways**	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.442E-06	0.1687
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.156E-09	0.0002
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.185E-07	0.0104
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.644E-05	0.5282
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.461E-05	0.2919
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.060E-08	0.0004
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.501E-08	0.0003
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.005E-05	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

0

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 0.000E+00 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 0.000E+00 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	8.437E-06	0.1686	4.303E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.460E-09	0.0001
H-3	0.000E+00	0.0000	8.135E-09	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.102E-11	0.0000
Pb-210	1.568E-08	0.0003	1.181E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.027E-07	0.0100
Ra-226	2.636E-05	0.5267	1.086E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.515E-08	0.0015
Ra-228	1.440E-05	0.2877	1.681E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.092E-07	0.0042
Th-230	3.097E-09	0.0001	1.306E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.737E-08	0.0003
U-234	9.643E-10	0.0000	1.068E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.394E-08	0.0003
Total	4.922E-05	0.9834	8.767E-09	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.238E-07	0.0165

0

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 0.000E+00 years

Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.442E-06	0.1687
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.156E-09	0.0002
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.185E-07	0.0104
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.644E-05	0.5282
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.461E-05	0.2919
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.060E-08	0.0004
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.501E-08	0.0003
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.005E-05	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 1.000E+00 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Cs-137	1.500E-04	0.000E+00	0.000E+00	0.000E+00	5.702E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.702E+00
H-3	2.513E-01	0.000E+00	0.000E+00	0.000E+00	3.839E-03	7.270E+03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.270E+03
Pb-210	1.533E-04	0.000E+00	0.000E+00	0.000E+00	5.828E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.828E+00
Ra-226	1.536E-04	0.000E+00	0.000E+00	0.000E+00	5.837E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.837E+00
Ra-228	1.361E-04	0.000E+00	0.000E+00	0.000E+00	5.174E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.174E+00
Th-228	4.382E-05	0.000E+00	0.000E+00	0.000E+00	1.665E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.665E+00
Th-230	1.536E-04	0.000E+00	0.000E+00	0.000E+00	5.837E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.837E+00
U-234	1.535E-04	0.000E+00	0.000E+00	0.000E+00	5.835E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.835E+00

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 1.000E+00 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+00 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	8.239E-06	0.1505	4.201E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.331E-09	0.0001
H-3	0.000E+00	0.0000	5.347E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.382E-14	0.0000
Pb-210	1.565E-08	0.0003	1.179E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.016E-07	0.0092
Ra-226	2.636E-05	0.4815	1.085E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.512E-08	0.0014
Ra-228	1.276E-05	0.2332	1.489E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.854E-07	0.0034
Th-228	6.519E-06	0.1191	1.578E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.759E-08	0.0003
Th-230	3.096E-09	0.0001	1.305E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.736E-08	0.0003
U-234	9.638E-10	0.0000	1.067E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.393E-08	0.0003
Total	5.389E-05	0.9847	7.761E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.163E-07	0.0149

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+00 years

Water Dependent Pathways

Radio-	Water		Fish		Plant		Meat		Milk		All Pathways**	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.244E-06	0.1506
H-3	2.036E-08	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.036E-08	0.0004
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.174E-07	0.0095
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.643E-05	0.4829
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.295E-05	0.2366
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.537E-06	0.1194
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.059E-08	0.0004
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.500E-08	0.0003
Total	2.036E-08	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.473E-05	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

0

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 1.000E+00 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+00 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground risk	Ground fract.	Inhalation risk	Inhalation fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	Soil risk	Soil fract.
Cs-137	8.239E-06	0.1505	4.201E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.331E-09	0.0001
H-3	0.000E+00	0.0000	5.347E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.382E-14	0.0000
Pb-210	1.517E-08	0.0003	1.143E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.863E-07	0.0089
Ra-226	2.634E-05	0.4813	1.121E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.044E-08	0.0017
Ra-228	1.928E-05	0.3523	3.067E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.029E-07	0.0037
Th-230	1.451E-08	0.0003	1.306E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.740E-08	0.0003
U-234	9.638E-10	0.0000	1.067E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.393E-08	0.0003
Total	5.389E-05	0.9847	7.761E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.163E-07	0.0149

0

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+00 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All pathways risk	All pathways fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.244E-06	0.1506
H-3	2.036E-08	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.036E-08	0.0004
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.016E-07	0.0092
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.643E-05	0.4830
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.948E-05	0.3560
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.204E-08	0.0006
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.500E-08	0.0003
Total	2.036E-08	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.473E-05	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Intrisk : Residual Dose and Risk Assessment for Pit C Under Site Park Worker Scenario
File : C:\USERS\MRAHMAN\DOCUMENTS\OLD RESRAD FILES\SEAD 12 PIT C-SITE PARK WORKER.RAD

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 2.000E+00 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Cs-137	1.465E-04	0.000E+00	0.000E+00	0.000E+00	5.566E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.566E+00
H-3	1.652E-04	0.000E+00	0.000E+00	0.000E+00	2.523E-06	4.422E+04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.422E+04
Pb-210	1.530E-04	0.000E+00	0.000E+00	0.000E+00	5.816E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.816E+00
Ra-226	1.535E-04	0.000E+00	0.000E+00	0.000E+00	5.834E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.834E+00
Ra-228	1.206E-04	0.000E+00	0.000E+00	0.000E+00	4.584E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.584E+00
Th-228	6.931E-05	0.000E+00	0.000E+00	0.000E+00	2.634E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.634E+00
Th-230	1.535E-04	0.000E+00	0.000E+00	0.000E+00	5.833E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.833E+00
U-234	1.534E-04	0.000E+00	0.000E+00	0.000E+00	5.830E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.830E+00

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil and water-dependent water, fish, plant, meat, milk pathways

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of Radon and its Decay Products as pCi/yr at t= 2.000E+00 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p) and Fraction of Total Risk at t= 2.000E+00 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	8.046E-06	0.1412	4.101E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.205E-09	0.0001
H-3	0.000E+00	0.0000	3.515E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.083E-18	0.0000
Pb-210	1.563E-08	0.0003	1.177E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.006E-07	0.0088
Ra-226	2.635E-05	0.4625	1.085E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.508E-08	0.0013
Ra-228	1.131E-05	0.1985	1.319E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.642E-07	0.0029
Th-228	1.031E-05	0.1811	2.496E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.782E-08	0.0005
Th-230	3.096E-09	0.0001	1.305E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.735E-08	0.0003
U-234	9.633E-10	0.0000	1.066E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.392E-08	0.0002
Total	5.604E-05	0.9837	8.451E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.042E-07	0.0141

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 2.000E+00 years

Water Dependent Pathways

Radio-	Water		Fish		Plant		Meat		Milk		All Pathways**	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.051E-06	0.1413
H-3	1.238E-07	0.0022	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.238E-07	0.0022
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.164E-07	0.0091
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.642E-05	0.4638
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.147E-05	0.2014
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.034E-05	0.1816
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.058E-08	0.0004
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.499E-08	0.0003
Total	1.238E-07	0.0022	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.697E-05	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

0

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 2.000E+00 years

0

Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 2.000E+00 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	8.046E-06	0.1412	4.101E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.205E-09	0.0001
H-3	0.000E+00	0.0000	3.515E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.083E-18	0.0000
Pb-210	1.468E-08	0.0003	1.106E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.704E-07	0.0083
Ra-226	2.633E-05	0.4621	1.155E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.052E-07	0.0018
Ra-228	2.162E-05	0.3796	3.815E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.920E-07	0.0034
Th-230	2.591E-08	0.0005	1.306E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.743E-08	0.0003
U-234	9.635E-10	0.0000	1.066E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.392E-08	0.0002
Total	5.604E-05	0.9837	8.451E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.042E-07	0.0141

0

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 2.000E+00 years

Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.051E-06	0.1413
H-3	1.238E-07	0.0022	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.238E-07	0.0022
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.852E-07	0.0085
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.643E-05	0.4640
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.182E-05	0.3830
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.348E-08	0.0008
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.499E-08	0.0003
Total	1.238E-07	0.0022	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.697E-05	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 2.400E+00 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Cs-137	1.451E-04	0.000E+00	0.000E+00	0.000E+00	5.513E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.513E+00
H-3	8.813E-06	0.000E+00	0.000E+00	0.000E+00	1.346E-07	4.327E+04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.327E+04
Pb-210	1.529E-04	0.000E+00	0.000E+00	0.000E+00	5.811E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.811E+00
Ra-226	1.535E-04	0.000E+00	0.000E+00	0.000E+00	5.833E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.833E+00
Ra-228	1.149E-04	0.000E+00	0.000E+00	0.000E+00	4.368E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.368E+00
Th-228	7.582E-05	0.000E+00	0.000E+00	0.000E+00	2.882E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.882E+00
Th-230	1.535E-04	0.000E+00	0.000E+00	0.000E+00	5.832E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.832E+00
U-234	1.533E-04	0.000E+00	0.000E+00	0.000E+00	5.827E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.827E+00

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 2.400E+00 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 2.400E+00 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	7.970E-06	0.1390	4.062E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.155E-09	0.0001
H-3	0.000E+00	0.0000	1.875E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.846E-19	0.0000
Pb-210	1.562E-08	0.0003	1.176E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.002E-07	0.0087
Ra-226	2.635E-05	0.4597	1.085E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.506E-08	0.0013
Ra-228	1.078E-05	0.1880	1.257E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.565E-07	0.0027
Th-228	1.128E-05	0.1969	2.730E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.043E-08	0.0005
Th-230	3.095E-09	0.0001	1.304E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.735E-08	0.0003
U-234	9.631E-10	0.0000	1.066E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.391E-08	0.0002
Total	5.640E-05	0.9839	8.622E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.986E-07	0.0139

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 2.400E+00 years

Water Dependent Pathways

Radio-	Water		Fish		Plant		Meat		Milk		All Pathways**	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.975E-06	0.1391
H-3	1.211E-07	0.0021	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.211E-07	0.0021
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.159E-07	0.0090
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.642E-05	0.4610
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.093E-05	0.1907
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.132E-05	0.1974
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.058E-08	0.0004
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.498E-08	0.0003
Total	1.211E-07	0.0021	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.732E-05	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

0

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 2.400E+00 years

0

Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 2.400E+00 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground risk	Ground fract.	Inhalation risk	Inhalation fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	Soil risk	Soil fract.
Cs-137	7.970E-06	0.1390	4.062E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.155E-09	0.0001
H-3	0.000E+00	0.0000	1.875E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.846E-19	0.0000
Pb-210	1.449E-08	0.0003	1.091E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.642E-07	0.0081
Ra-226	2.632E-05	0.4592	1.168E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.110E-07	0.0019
Ra-228	2.206E-05	0.3849	3.987E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.869E-07	0.0033
Th-230	3.047E-08	0.0005	1.306E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.745E-08	0.0003
U-234	9.634E-10	0.0000	1.066E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.391E-08	0.0002
Total	5.640E-05	0.9839	8.622E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.986E-07	0.0139

0

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 2.400E+00 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All pathways risk	All pathways fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.975E-06	0.1391
H-3	1.211E-07	0.0021	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.211E-07	0.0021
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.788E-07	0.0084
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.643E-05	0.4611
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.225E-05	0.3882
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.805E-08	0.0008
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.498E-08	0.0003
Total	1.211E-07	0.0021	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.732E-05	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 3.000E+00 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Cs-137	1.430E-04	0.000E+00	0.000E+00	0.000E+00	5.434E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.434E+00
H-3	1.086E-07	0.000E+00	0.000E+00	0.000E+00	1.658E-09	4.185E+04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.185E+04
Pb-210	1.527E-04	0.000E+00	0.000E+00	0.000E+00	5.805E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.805E+00
Ra-226	1.534E-04	0.000E+00	0.000E+00	0.000E+00	5.831E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.831E+00
Ra-228	1.069E-04	0.000E+00	0.000E+00	0.000E+00	4.062E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.062E+00
Th-228	8.262E-05	0.000E+00	0.000E+00	0.000E+00	3.140E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.140E+00
Th-230	1.534E-04	0.000E+00	0.000E+00	0.000E+00	5.830E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.830E+00
U-234	1.532E-04	0.000E+00	0.000E+00	0.000E+00	5.824E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.824E+00

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 3.000E+00 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+00 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	7.857E-06	0.1368	4.004E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.081E-09	0.0001
H-3	0.000E+00	0.0000	2.310E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.970E-21	0.0000
Pb-210	1.560E-08	0.0003	1.174E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.996E-07	0.0087
Ra-226	2.634E-05	0.4585	1.084E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.504E-08	0.0013
Ra-228	1.002E-05	0.1745	1.169E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.455E-07	0.0025
Th-228	1.230E-05	0.2141	2.975E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.316E-08	0.0006
Th-230	3.095E-09	0.0001	1.304E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.734E-08	0.0003
U-234	9.628E-10	0.0000	1.065E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.391E-08	0.0002
Total	5.654E-05	0.9842	8.775E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.896E-07	0.0137

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+00 years

Water Dependent Pathways

Radio-	Water		Fish		Plant		Meat		Milk		All Pathways**	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.862E-06	0.1369
H-3	1.172E-07	0.0020	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.172E-07	0.0020
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.153E-07	0.0090
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.642E-05	0.4598
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.017E-05	0.1770
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.233E-05	0.2147
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.057E-08	0.0004
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.497E-08	0.0003
Total	1.172E-07	0.0020	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.745E-05	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

0

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 3.000E+00 years

0

Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+00 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground risk	Ground fract.	Inhalation risk	Inhalation fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	Soil risk	Soil fract.
Cs-137	7.857E-06	0.1368	4.004E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.081E-09	0.0001
H-3	0.000E+00	0.0000	2.310E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.970E-21	0.0000
Pb-210	1.421E-08	0.0002	1.070E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.550E-07	0.0079
Ra-226	2.631E-05	0.4580	1.188E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.195E-07	0.0021
Ra-228	2.232E-05	0.3885	4.144E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.787E-07	0.0031
Th-230	3.731E-08	0.0006	1.305E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.747E-08	0.0003
U-234	9.633E-10	0.0000	1.065E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.391E-08	0.0002
Total	5.654E-05	0.9842	8.775E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.896E-07	0.0137

0

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+00 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All pathways risk	All pathways fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.862E-06	0.1369
H-3	1.172E-07	0.0020	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.172E-07	0.0020
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.694E-07	0.0082
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.643E-05	0.4601
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.250E-05	0.3917
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.491E-08	0.0010
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.498E-08	0.0003
Total	1.172E-07	0.0020	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.745E-05	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Intrisk : Residual Dose and Risk Assessment for Pit C Under Site Park Worker Scenario
File : C:\USERS\MRAHMAN\DOCUMENTS\OLD RESRAD FILES\SEAD 12 PIT C-SITE PARK WORKER.RAD

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 1.000E+01 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Cs-137	1.209E-04	0.000E+00	0.000E+00	0.000E+00	4.594E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.594E+00
H-3	5.756E-30	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.614E-13	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.614E-13
Pb-210	1.508E-04	0.000E+00	0.000E+00	0.000E+00	5.731E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.731E+00
Ra-226	1.529E-04	0.000E+00	0.000E+00	0.000E+00	5.811E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.811E+00
Ra-228	4.580E-05	0.000E+00	0.000E+00	0.000E+00	1.741E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.741E+00
Th-228	6.253E-05	0.000E+00	0.000E+00	0.000E+00	2.377E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.377E+00
Th-230	1.528E-04	0.000E+00	0.000E+00	0.000E+00	5.807E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.807E+00
U-234	1.523E-04	0.000E+00	0.000E+00	0.000E+00	5.788E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.788E+00

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 1.000E+01 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+01 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	6.655E-06	0.1407	3.385E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.295E-09	0.0001
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	1.544E-08	0.0003	1.159E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.933E-07	0.0104
Ra-226	2.629E-05	0.5561	1.081E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.478E-08	0.0016
Ra-228	4.303E-06	0.0910	5.009E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.235E-08	0.0013
Th-228	9.323E-06	0.1972	2.252E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.510E-08	0.0005
Th-230	3.091E-09	0.0001	1.299E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.728E-08	0.0004
U-234	9.593E-10	0.0000	1.058E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.382E-08	0.0003
Total	4.659E-05	0.9854	7.353E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.909E-07	0.0146

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+01 years

Water Dependent Pathways

Radio-	Water		Fish		Plant		Meat		Milk		All Pathways**	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.659E-06	0.1408
H-3	7.318E-25	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.318E-25	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.089E-07	0.0108
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.637E-05	0.5577
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.365E-06	0.0923
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.348E-06	0.1977
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.050E-08	0.0004
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.488E-08	0.0003
Total	7.318E-25	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.729E-05	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

0

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 1.000E+01 years

0

Radon	Radionuclides							
Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+01 years

0 Water Independent Pathways (Inhalation excludes radon)

0 Radio-Nuclide	Ground risk	Ground fract.	Inhalation risk	Inhalation fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	Soil risk	Soil fract.
Cs-137	6.655E-06	0.1407	3.385E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.295E-09	0.0001
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	1.129E-08	0.0002	8.478E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.607E-07	0.0076
Ra-226	2.619E-05	0.5538	1.387E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.068E-07	0.0044
Ra-228	1.363E-05	0.2882	2.752E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.745E-08	0.0018
Th-230	1.167E-07	0.0025	1.304E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.790E-08	0.0004
U-234	9.647E-10	0.0000	1.059E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.382E-08	0.0003
Total	4.659E-05	0.9854	7.353E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.909E-07	0.0146

0

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+01 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All pathways risk	All pathways fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.659E-06	0.1408
H-3	7.318E-25	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.318E-25	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.721E-07	0.0079
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.639E-05	0.5581
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.371E-05	0.2900
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.348E-07	0.0028
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.489E-08	0.0003
Total	7.318E-25	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.729E-05	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 3.000E+01 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Cs-137	7.479E-05	0.000E+00	0.000E+00	0.000E+00	2.843E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.843E+00
H-3	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	1.467E-04	0.000E+00	0.000E+00	0.000E+00	5.576E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.576E+00
Ra-226	1.513E-04	0.000E+00	0.000E+00	0.000E+00	5.752E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.752E+00
Ra-228	4.068E-06	0.000E+00	0.000E+00	0.000E+00	1.546E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.546E-01
Th-228	6.094E-06	0.000E+00	0.000E+00	0.000E+00	2.316E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.316E-01
Th-230	1.511E-04	0.000E+00	0.000E+00	0.000E+00	5.742E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.742E+00
U-234	1.496E-04	0.000E+00	0.000E+00	0.000E+00	5.685E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.685E+00

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 3.000E+01 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+01 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	4.140E-06	0.1285	2.094E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.658E-09	0.0001
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	1.513E-08	0.0005	1.128E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.800E-07	0.0149
Ra-226	2.616E-05	0.8121	1.070E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.402E-08	0.0023
Ra-228	3.842E-07	0.0119	4.449E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.538E-09	0.0002
Th-228	9.129E-07	0.0283	2.194E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.446E-09	0.0001
Th-230	3.079E-09	0.0001	1.284E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.708E-08	0.0005
U-234	9.495E-10	0.0000	1.040E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.357E-08	0.0004
Total	3.162E-05	0.9815	4.788E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.953E-07	0.0185

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+01 years

Water Dependent Pathways

Radio-	Water		Fish		Plant		Meat		Milk		All Pathways**	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.143E-06	0.1286
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.952E-07	0.0154
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.623E-05	0.8144
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.897E-07	0.0121
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.153E-07	0.0284
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.029E-08	0.0006
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.463E-08	0.0005
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.221E-05	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

0

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 3.000E+01 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+01 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground risk	Ground fract.	Inhalation risk	Inhalation fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	Soil risk	Soil fract.
Cs-137	4.140E-06	0.1285	2.094E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.658E-09	0.0001
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	5.856E-09	0.0002	4.365E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.857E-07	0.0058
Ra-226	2.583E-05	0.8019	1.742E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.651E-07	0.0113
Ra-228	1.297E-06	0.0403	2.639E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.984E-09	0.0002
Th-230	3.406E-07	0.0106	1.303E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.024E-08	0.0006
U-234	9.958E-10	0.0000	1.040E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.358E-08	0.0004
Total	3.162E-05	0.9815	4.788E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.953E-07	0.0185

0

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+01 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All pathways risk	All pathways fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.143E-06	0.1286
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.916E-07	0.0059
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.620E-05	0.8133
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.305E-06	0.0405
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.610E-07	0.0112
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.468E-08	0.0005
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.221E-05	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 1.000E+02 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Cs-137	1.393E-05	0.000E+00	0.000E+00	0.000E+00	5.294E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.294E-01
H-3	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	1.391E-04	0.000E+00	0.000E+00	0.000E+00	5.287E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.287E+00
Ra-226	1.460E-04	0.000E+00	0.000E+00	0.000E+00	5.548E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.548E+00
Ra-228	8.493E-10	0.000E+00	0.000E+00	0.000E+00	3.228E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.228E-05
Th-228	1.273E-09	0.000E+00	0.000E+00	0.000E+00	4.839E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.839E-05
Th-230	1.451E-04	0.000E+00	0.000E+00	0.000E+00	5.516E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.516E+00
U-234	1.404E-04	0.000E+00	0.000E+00	0.000E+00	5.335E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.335E+00

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 1.000E+02 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+02 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	7.862E-07	0.0291	3.901E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.950E-10	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	1.472E-08	0.0005	1.070E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.551E-07	0.0168
Ra-226	2.568E-05	0.9496	1.032E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.140E-08	0.0026
Ra-228	8.168E-11	0.0000	9.289E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.156E-12	0.0000
Th-228	1.939E-10	0.0000	4.584E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.110E-13	0.0000
Th-230	3.039E-09	0.0001	1.234E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.641E-08	0.0006
U-234	9.157E-10	0.0000	9.756E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.274E-08	0.0005
Total	2.649E-05	0.9794	4.311E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.561E-07	0.0206

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+02 years

Water Dependent Pathways

Radio-	Water		Fish		Plant		Meat		Milk		All Pathways**	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.867E-07	0.0291
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.699E-07	0.0174
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.575E-05	0.9523
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.283E-11	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.944E-10	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.957E-08	0.0007
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.375E-08	0.0005
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.704E-05	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

0

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 1.000E+02 years

0

Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+02 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground risk	Ground fract.	Inhalation risk	Inhalation fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	Soil risk	Soil fract.
Cs-137	7.862E-07	0.0291	3.901E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.950E-10	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	5.880E-10	0.0000	4.274E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.818E-08	0.0007
Ra-226	2.461E-05	0.9100	1.983E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.917E-07	0.0182
Ra-228	2.756E-10	0.0000	5.513E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.667E-12	0.0000
Th-230	1.089E-06	0.0403	1.308E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.302E-08	0.0012
U-234	1.405E-09	0.0001	9.767E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.276E-08	0.0005
Total	2.649E-05	0.9794	4.311E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.561E-07	0.0206

0

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+02 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All pathways risk	All pathways fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.867E-07	0.0291
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.877E-08	0.0007
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.510E-05	0.9282
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.773E-10	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.122E-06	0.0415
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.426E-08	0.0005
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.704E-05	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 3.000E+02 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Cs-137	1.139E-07	0.000E+00	0.000E+00	0.000E+00	4.328E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.328E-03
H-3	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	1.246E-04	0.000E+00	0.000E+00	0.000E+00	4.735E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.735E+00
Ra-226	1.310E-04	0.000E+00	0.000E+00	0.000E+00	4.977E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.977E+00
Ra-228	2.581E-20	0.000E+00	0.000E+00	0.000E+00	9.808E-16	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	9.808E-16
Th-228	3.869E-20	0.000E+00	0.000E+00	0.000E+00	1.470E-15	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.470E-15
Th-230	1.288E-04	0.000E+00	0.000E+00	0.000E+00	4.895E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.895E+00
U-234	1.165E-04	0.000E+00	0.000E+00	0.000E+00	4.428E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.428E+00

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 3.000E+02 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+02 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	6.803E-09	0.0003	3.189E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.047E-12	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	1.421E-08	0.0006	9.578E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.075E-07	0.0164
Ra-226	2.426E-05	0.9789	9.256E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.405E-08	0.0026
Ra-228	2.617E-21	0.0000	2.822E-26	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.513E-23	0.0000
Th-228	6.186E-21	0.0000	1.393E-25	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.553E-23	0.0000
Th-230	2.920E-09	0.0001	1.095E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.456E-08	0.0006
U-234	8.246E-10	0.0000	8.098E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.057E-08	0.0004
Total	2.428E-05	0.9799	3.788E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.967E-07	0.0200

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+02 years

Water Dependent Pathways

Radio-	Water		Fish		Plant		Meat		Milk		All Pathways**	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.807E-09	0.0003
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.218E-07	0.0170
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.432E-05	0.9815
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.652E-21	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.201E-21	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.759E-08	0.0007
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.148E-08	0.0005
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.478E-05	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

0

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 3.000E+02 years

0

Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+02 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground risk	Ground fract.	Inhalation risk	Inhalation fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	Soil risk	Soil fract.
Cs-137	6.803E-09	0.0003	3.189E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.047E-12	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	8.253E-13	0.0000	5.561E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.366E-11	0.0000
Ra-226	2.134E-05	0.8611	1.667E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.193E-07	0.0169
Ra-228	8.803E-21	0.0000	1.675E-25	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.066E-23	0.0000
Th-230	2.934E-06	0.1184	1.308E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.674E-08	0.0027
U-234	4.732E-09	0.0002	8.129E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.067E-08	0.0004
Total	2.428E-05	0.9799	3.788E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.967E-07	0.0200

0

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+02 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All pathways risk	All pathways fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.807E-09	0.0003
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.449E-11	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.176E-05	0.8780
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.854E-21	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.000E-06	0.1211
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.549E-08	0.0006
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.478E-05	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 1.000E+03 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Cs-137	5.201E-15	0.000E+00	0.000E+00	0.000E+00	1.977E-10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.977E-10
H-3	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	7.828E-05	0.000E+00	0.000E+00	0.000E+00	2.975E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.975E+00
Ra-226	8.226E-05	0.000E+00	0.000E+00	0.000E+00	3.126E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.126E+00
Ra-228	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-228	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	7.833E-05	0.000E+00	0.000E+00	0.000E+00	2.977E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.977E+00
U-234	5.613E-05	0.000E+00	0.000E+00	0.000E+00	2.133E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.133E+00

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil and water-dependent water, fish, plant, meat, milk pathways

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of Radon and its Decay Products as pCi/yr at t= 1.000E+03 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p) and Fraction of Total Risk at t= 1.000E+03 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	3.866E-16	0.0000	1.456E-23	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.848E-19	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	1.222E-08	0.0006	6.018E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.561E-07	0.0135
Ra-226	1.862E-05	0.9828	5.814E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.023E-08	0.0021
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	2.450E-09	0.0001	6.658E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.857E-09	0.0005
U-234	5.558E-10	0.0000	3.901E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.093E-09	0.0003
Total	1.863E-05	0.9836	2.239E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.102E-07	0.0164

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+03 years

Water Dependent Pathways

Radio-	Water		Fish		Plant		Meat		Milk		All Pathways**	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.868E-16	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.684E-07	0.0142
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.866E-05	0.9849
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.137E-08	0.0006
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.688E-09	0.0003
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.894E-05	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

0

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 1.000E+03 years

0

Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+03 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground risk	Ground fract.	Inhalation risk	Inhalation fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	Soil risk	Soil fract.
Cs-137	3.866E-16	0.0000	1.456E-23	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.848E-19	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	8.303E-23	0.0000	4.088E-25	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.739E-21	0.0000
Ra-226	1.222E-05	0.6448	7.808E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.964E-07	0.0104
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	6.391E-06	0.3374	1.061E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.083E-07	0.0057
U-234	2.793E-08	0.0015	3.969E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.577E-09	0.0003
Total	1.863E-05	0.9836	2.239E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.102E-07	0.0164

0

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+03 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All pathways risk	All pathways fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.868E-16	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.823E-21	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.241E-05	0.6552
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.499E-06	0.3431
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.355E-08	0.0018
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.894E-05	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

ATTACHMENT G-7

DOSE AND RISK CALCULATION

AND

OUTPUT DOSE AND RISK ASSESSMENTS SUMMARY REPORTS

FOR DISPOSAL PIT A/B UNDER FUTURE RECREATIONAL RECEPTOR

Table G-7-1: Results of Residual Dose Assessment for Disposal Pit A/B under Future Recreational Receptor Scenario

Nuclide	EPC (pCi/g)	Dose to Source Ratio ((mrem/yr)/(pCi/g))									
		T = 0 Year					T=1000 Years				
		Ground	Inhalation	Soil	Water	All Pathways	Ground	Inhalation	Soil	Water	All Pathways
Ac-227	0.295	6.5E-02	7.7E-05	4.1E-02	0.0E+00	1.1E-01	5.5E-16	4.7E-19	2.5E-16	0.0E+00	8.0E-16
Cs-137	0.117	1.0E-01	3.7E-10	1.4E-04	0.0E+00	1.0E-01	4.7E-12	1.2E-20	4.7E-15	0.0E+00	4.7E-12
H-3	20.09	0.0E+00	1.5E-07	2.4E-08	9.7E-06	9.9E-06	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Th-230	0.205	1.1E-04	3.8E-06	1.5E-03	0.0E+00	1.7E-03	6.9E-03	1.9E-06	1.1E-03	5.4E-01	5.5E-01

Nuclide	Dose (mrem/yr)									
	T = 0 Year					T=1000 Years				
	Ground	Inhalation	Soil	Water	All Pathways	Ground	Inhalation	Soil	Water	All Pathways
Ac-227	1.9E-02	2.3E-05	1.2E-02	0.0E+00	3.1E-02	1.6E-16	1.4E-19	7.3E-17	0.0E+00	2.4E-16
Cs-137	1.2E-02	4.3E-11	1.6E-05	0.0E+00	1.2E-02	5.5E-13	1.4E-21	5.5E-16	0.0E+00	5.6E-13
H-3	0.0E+00	3.0E-06	4.9E-07	1.9E-04	2.0E-04	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Th-230	2.3E-05	7.8E-07	3.2E-04	0.0E+00	3.4E-04	1.4E-03	3.9E-07	2.2E-04	1.1E-01	1.1E-01
	Cumulative Dose				**4.4E-02**	**Cumulative Dose**				**1.12E-01**

Table G-7-2: Results of Residual Risk Assessment for Disposal Pit A/B under Future Recreational Receptor Scenario

Nuclide	EPC (pCi/g)	Risk to Source Ratio (1/(pCi/g))									
		T = 0 Year					T=1000 Years				
		Ground	Inhalation	Soil	Water	All Pathways	Ground	Inhalation	Soil	Water	All Pathways
Ac-227	0.295	2.3E-07	1.2E-11	8.9E-09	0.0E+00	2.4E-07	2.1E-21	7.5E-26	5.5E-23	0.0E+00	2.1E-21
Cs-137	0.117	3.9E-07	6.3E-15	5.1E-10	0.0E+00	3.9E-07	1.8E-17	2.2E-25	1.8E-20	0.0E+00	1.8E-17
H-3	20.09	0.0E+00	4.7E-14	1.3E-15	4.1E-09	4.1E-09	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Th-230	0.205	6.8E-10	2.0E-12	1.7E-09	0.0E+00	2.3E-09	2.6E-08	1.0E-12	1.6E-09	9.4E-07	9.7E-07

Nuclide	Risk (unitless)									
	T = 0 Year					T=1000 Years				
	Ground	Inhalation	Soil	Water	All Pathways	Ground	Inhalation	Soil	Water	All Pathways
Ac-227	6.9E-08	3.5E-12	2.6E-09	0.0E+00	7.2E-08	6.0E-22	2.2E-26	1.6E-23	0.0E+00	6.2E-22
Cs-137	4.5E-08	7.4E-16	6.0E-11	0.0E+00	4.5E-08	2.1E-18	2.6E-26	2.1E-21	0.0E+00	2.1E-18
H-3	0.0E+00	9.5E-13	2.7E-14	8.2E-08	8.2E-08	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Th-230	1.4E-10	4.0E-13	3.4E-10	0.0E+00	4.8E-10	5.3E-09	2.1E-13	3.2E-10	1.9E-07	2.0E-07
	Cumulative Risk				**2E-07**	**Cumulative Risk**				**2E-07**

Summary : Residual Dose and Risk Assessment for Pit A/B Under Future Recreational Recepto
File : C:\USERS\MRAHMAN\DOCUMENTS\OLD RESRAD FILES\PIT AB-RECREATIONAL RECEPTOR.RAD

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Dose Conversion Factor (and Related) Parameter Summary
Dose Library: FGR 12 & FGR 11

0

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation (mrem/yr)/(pCi/g)			
A-1	Ac-227 (Source: FGR 12)	4.951E-04	4.951E-04	DCF1(1)
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1(2)
A-1	Ba-137m (Source: FGR 12)	3.606E+00	3.606E+00	DCF1(3)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1(4)
A-1	Bi-211 (Source: FGR 12)	2.559E-01	2.559E-01	DCF1(5)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1(6)
A-1	Cs-137 (Source: FGR 12)	7.510E-04	7.510E-04	DCF1(7)
A-1	Fr-223 (Source: FGR 12)	1.980E-01	1.980E-01	DCF1(8)
A-1	H-3 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1(9)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1(10)
A-1	Pb-211 (Source: FGR 12)	3.064E-01	3.064E-01	DCF1(11)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1(12)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1(13)
A-1	Po-211 (Source: FGR 12)	4.764E-02	4.764E-02	DCF1(14)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1(15)
A-1	Po-215 (Source: FGR 12)	1.016E-03	1.016E-03	DCF1(16)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1(17)
A-1	Ra-223 (Source: FGR 12)	6.034E-01	6.034E-01	DCF1(18)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1(19)
A-1	Rn-219 (Source: FGR 12)	3.083E-01	3.083E-01	DCF1(20)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1(21)
A-1	Th-227 (Source: FGR 12)	5.212E-01	5.212E-01	DCF1(22)
A-1	Th-230 (Source: FGR 12)	1.209E-03	1.209E-03	DCF1(23)
A-1	Tl-207 (Source: FGR 12)	1.980E-02	1.980E-02	DCF1(24)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1(25)
B-1	Dose conversion factors for inhalation mrem/pCi:			
B-1	Ac-227+D	6.724E+00	6.700E+00	DCF2(1)
B-1	Cs-137+D	3.190E-05	3.190E-05	DCF2(2)
B-1	H-3	6.400E-08	6.400E-08	DCF2(3)
B-1	Pb-210+D	2.320E-02	1.360E-02	DCF2(4)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2(5)
B-1	Th-230	3.260E-01	3.260E-01	DCF2(6)
D-1	Dose conversion factors for ingestion mrem/pCi:			
D-1	Ac-227+D	1.480E-02	1.410E-02	DCF3(1)
D-1	Cs-137+D	5.000E-05	5.000E-05	DCF3(2)
D-1	H-3	6.400E-08	6.400E-08	DCF3(3)
D-1	Pb-210+D	7.276E-03	5.370E-03	DCF3(4)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3(5)

```
D-1   Th-230                                                  5.480E-04  5.480E-04  DCF3(  6)

D-34  Food transfer factors:
D-34  Ac-227+D   plant/soil concentration ratio dimensionless    2.500E-03  2.500E-03  RTF(  11)
D-34  Ac-227+D   beef/livestock-intake ratio (pCi/kg)/(pCi/d)    2.000E-05  2.000E-05  RTF(  12)
D-34  Ac-227+D   milk/livestock-intake ratio (pCi/L)/(pCi/d)     2.000E-05  2.000E-05  RTF(  13)
D-34
```

Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: FGR 12 & FGR 11

Menu		Parameter	Current Value#	Base Case*	Parameter Name
D-34	Cs-137+D	plant/soil concentration ratio dimensionless	4.000E-02	4.000E-02	RTF(21)
D-34	Cs-137+D	beef/livestock-intake ratio (pCi/kg)/(pCi/d)	3.000E-02	3.000E-02	RTF(22)
D-34	Cs-137+D	milk/livestock-intake ratio (pCi/L)/(pCi/d)	8.000E-03	8.000E-03	RTF(23)
D-34					
D-34	H-3	plant/soil concentration ratio dimensionless	4.800E+00	4.800E+00	RTF(31)
D-34	H-3	beef/livestock-intake ratio (pCi/kg)/(pCi/d)	1.200E-02	1.200E-02	RTF(32)
D-34	H-3	milk/livestock-intake ratio (pCi/L)/(pCi/d)	1.000E-02	1.000E-02	RTF(33)
D-34					
D-34	Pb-210+D	plant/soil concentration ratio dimensionless	1.000E-02	1.000E-02	RTF(41)
D-34	Pb-210+D	beef/livestock-intake ratio (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(42)
D-34	Pb-210+D	milk/livestock-intake ratio (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(43)
D-34					
D-34	Ra-226+D	plant/soil concentration ratio dimensionless	4.000E-02	4.000E-02	RTF(51)
D-34	Ra-226+D	beef/livestock-intake ratio (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(52)
D-34	Ra-226+D	milk/livestock-intake ratio (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(53)
D-34					
D-34	Th-230	plant/soil concentration ratio dimensionless	1.000E-03	1.000E-03	RTF(61)
D-34	Th-230	beef/livestock-intake ratio (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(62)
D-34	Th-230	milk/livestock-intake ratio (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(63)
D-5	Bioaccumulation factors fresh water L/kg:				
D-5	Ac-227+D	fish	1.500E+01	1.500E+01	BIOFAC(11)
D-5	Ac-227+D	crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(12)
D-5					
D-5	Cs-137+D	fish	2.000E+03	2.000E+03	BIOFAC(21)
D-5	Cs-137+D	crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(22)
D-5					
D-5	H-3	fish	1.000E+00	1.000E+00	BIOFAC(31)
D-5	H-3	crustacea and mollusks	1.000E+00	1.000E+00	BIOFAC(32)
D-5					
D-5	Pb-210+D	fish	3.000E+02	3.000E+02	BIOFAC(41)
D-5	Pb-210+D	crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(42)
D-5					
D-5	Ra-226+D	fish	5.000E+01	5.000E+01	BIOFAC(51)
D-5	Ra-226+D	crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(52)
D-5					
D-5	Th-230	fish	1.000E+02	1.000E+02	BIOFAC(61)
D-5	Th-230	crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(62)

#For DCF1(xxx) only factors are for infinite depth & area. See ETFG table in Ground Pathway of Detailed Report.
*Base Case means Default.Lib w/o Associate Nuclide contributions.

Site-Specific Parameter Summary

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	2.160E+03	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E-01	2.000E+00	---	THICK0
R011	Fraction of contamination that is submerged	0.000E+00	0.000E+00	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	4.650E+01	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	2.500E+01	3.000E+01	---	BRDL
R011	Time since placement of material (yr)	0.000E+00	0.000E+00	---	TI
R011	Times for calculations (yr)	1.000E+00	1.000E+00	---	T(2)
R011	Times for calculations (yr)	2.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	3.000E+00	1.000E+01	---	T(4)
R011	Times for calculations (yr)	1.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	3.000E+01	1.000E+02	---	T(6)
R011	Times for calculations (yr)	1.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	3.000E+02	1.000E+03	---	T(8)
R011	Times for calculations (yr)	1.000E+03	0.000E+00	---	T(9)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): Ac-227	1.000E+00	0.000E+00	---	S1(1)
R012	Initial principal radionuclide (pCi/g): Cs-137	1.000E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): H-3	1.000E+00	0.000E+00	---	S1(3)
R012	Initial principal radionuclide (pCi/g): Th-230	1.000E+00	0.000E+00	---	S1(6)
R012	Concentration in groundwater (pCi/L): Ac-227	not used	0.000E+00	---	W1(1)
R012	Concentration in groundwater (pCi/L): Cs-137	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): H-3	not used	0.000E+00	---	W1(3)
R012	Concentration in groundwater (pCi/L): Th-230	not used	0.000E+00	---	W1(6)
R013	Cover depth (m)	0.000E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)	not used	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	1.280E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	6.000E-05	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	3.700E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	6.000E-02	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	2.900E+01	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	7.750E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	3.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	6.600E+00	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	7.000E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	7.500E-01	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	0.000E+00	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	1.300E+07	1.000E+06	---	WAREA

R013	Accuracy for water/soil computations	1.000E-03	1.000E-03	---	EPS
R014	Density of saturated zone (g/cm**3)	1.500E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	3.700E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	1.750E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	2.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	2.900E+02	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	1.100E-02	2.000E-02	---	HGWT

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R014	Saturated zone b parameter	not used	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	0.000E+00	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	3.000E+00	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	ND	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	not used	2.500E+02	---	UW
R015	Number of unsaturated zone strata	1	1	---	NS
R015	Unsat. zone 1 thickness (m)	1.000E+00	4.000E+00	---	H(1)
R015	Unsat. zone 1 soil density (g/cm**3)	1.500E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1 total porosity	3.700E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1 effective porosity	1.750E-01	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1 field capacity	2.000E-01	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1 soil-specific b parameter	7.750E+00	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1 hydraulic conductivity (m/yr)	2.900E+01	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Ac-227				
R016	Contaminated zone (cm**3/g)	2.400E+03	2.000E+01	---	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	2.400E+03	2.000E+01	---	DCNUCU(11)
R016	Saturated zone (cm**3/g)	2.400E+03	2.000E+01	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.906E-04	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for Cs-137				
R016	Contaminated zone (cm**3/g)	1.900E+03	4.600E+03	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	1.900E+03	4.600E+03	---	DCNUCU(21)
R016	Saturated zone (cm**3/g)	1.900E+03	4.600E+03	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.934E-04	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for H-3				
R016	Contaminated zone (cm**3/g)	6.000E-02	0.000E+00	---	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	6.000E-02	0.000E+00	---	DCNUCU(31)
R016	Saturated zone (cm**3/g)	6.000E-02	0.000E+00	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.353E+00	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)
R016	Distribution coefficients for Th-230				
R016	Contaminated zone (cm**3/g)	5.800E+03	6.000E+04	---	DCNUCC(6)
R016	Unsaturated zone 1 (cm**3/g)	5.800E+03	6.000E+04	---	DCNUCU(61)
R016	Saturated zone (cm**3/g)	5.800E+03	6.000E+04	---	DCNUCS(6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.616E-04	ALEACH(6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(6)

R016	Distribution coefficients for daughter Pb-210				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC(4)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCU(41)
R016	Saturated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCS(4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.354E-03	ALEACH(4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(4)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for daughter Ra-226				
R016	Contaminated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCC(5)
R016	Unsaturated zone 1 (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCU(51)
R016	Saturated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCS(5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.335E-02	ALEACH(5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(5)
R017	Inhalation rate (m**3/yr)	3.176E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	7.580E-07	1.000E-04	---	MLINH
R017	Exposure duration	5.000E+00	3.000E+01	---	ED
R017	Shielding factor inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor external gamma	4.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	0.000E+00	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	3.840E-02	2.500E-01	---	FOTD
R017	Shape factor flag external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m) ring 1:	not used	5.000E+01	---	RAD_SHAPE(1)
R017	Outer annular radius (m) ring 2:	not used	7.071E+01	---	RAD_SHAPE(2)
R017	Outer annular radius (m) ring 3:	not used	0.000E+00	---	RAD_SHAPE(3)
R017	Outer annular radius (m) ring 4:	not used	0.000E+00	---	RAD_SHAPE(4)
R017	Outer annular radius (m) ring 5:	not used	0.000E+00	---	RAD_SHAPE(5)
R017	Outer annular radius (m) ring 6:	not used	0.000E+00	---	RAD_SHAPE(6)
R017	Outer annular radius (m) ring 7:	not used	0.000E+00	---	RAD_SHAPE(7)
R017	Outer annular radius (m) ring 8:	not used	0.000E+00	---	RAD_SHAPE(8)
R017	Outer annular radius (m) ring 9:	not used	0.000E+00	---	RAD_SHAPE(9)
R017	Outer annular radius (m) ring 10:	not used	0.000E+00	---	RAD_SHAPE(10)
R017	Outer annular radius (m) ring 11:	not used	0.000E+00	---	RAD_SHAPE(11)
R017	Outer annular radius (m) ring 12:	not used	0.000E+00	---	RAD_SHAPE(12)
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA(1)
R017	Ring 2	not used	2.732E-01	---	FRACA(2)
R017	Ring 3	not used	0.000E+00	---	FRACA(3)
R017	Ring 4	not used	0.000E+00	---	FRACA(4)
R017	Ring 5	not used	0.000E+00	---	FRACA(5)
R017	Ring 6	not used	0.000E+00	---	FRACA(6)
R017	Ring 7	not used	0.000E+00	---	FRACA(7)
R017	Ring 8	not used	0.000E+00	---	FRACA(8)
R017	Ring 9	not used	0.000E+00	---	FRACA(9)
R017	Ring 10	not used	0.000E+00	---	FRACA(10)
R017	Ring 11	not used	0.000E+00	---	FRACA(11)
R017	Ring 12	not used	0.000E+00	---	FRACA(12)

R018	Fruits vegetables and grain consumption (kg/yr)	not used	1.600E+02	---	DIET(1)
R018	Leafy vegetable consumption (kg/yr)	not used	1.400E+01	---	DIET(2)
R018	Milk consumption (L/yr)	not used	9.200E+01	---	DIET(3)
R018	Meat and poultry consumption (kg/yr)	not used	6.300E+01	---	DIET(4)
R018	Fish consumption (kg/yr)	not used	5.400E+00	---	DIET(5)
R018	Other seafood consumption (kg/yr)	not used	9.000E-01	---	DIET(6)
R018	Soil ingestion rate (g/yr)	7.300E+01	3.650E+01	---	SOIL

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R018	Drinking water intake (L/yr)	3.650E+02	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	1.000E+00	1.000E+00	---	FDW
R018	Contamination fraction of household water	not used	1.000E+00	---	FHHW
R018	Contamination fraction of livestock water	not used	1.000E+00	---	FLW
R018	Contamination fraction of irrigation water	not used	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	not used	5.000E-01	---	FR9
R018	Contamination fraction of plant food	not used	-1	---	FPLANT
R018	Contamination fraction of meat	not used	-1	---	FMEAT
R018	Contamination fraction of milk	not used	-1	---	FMILK
R019	Livestock fodder intake for meat (kg/day)	not used	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	not used	5.500E+01	---	LFI6
R019	Livestock water intake for meat (L/day)	not used	5.000E+01	---	LWI5
R019	Livestock water intake for milk (L/day)	not used	1.600E+02	---	LWI6
R019	Livestock soil intake (kg/day)	not used	5.000E-01	---	LSI
R019	Mass loading for foliar deposition (g/m**3)	not used	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	1.500E-01	1.500E-01	---	DM
R019	Depth of roots (m)	not used	9.000E-01	---	DROOT
R019	Drinking water fraction from ground water	1.000E+00	1.000E+00	---	FGWDW
R019	Household water fraction from ground water	not used	1.000E+00	---	FGWHH
R019	Livestock water fraction from ground water	not used	1.000E+00	---	FGWLW
R019	Irrigation fraction from ground water	not used	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	not used	7.000E-01	---	YV(1)
R19B	Wet weight crop yield for Leafy (kg/m**2)	not used	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	not used	1.100E+00	---	YV(3)
R19B	Growing Season for Non-Leafy (years)	not used	1.700E-01	---	TE(1)
R19B	Growing Season for Leafy (years)	not used	2.500E-01	---	TE(2)
R19B	Growing Season for Fodder (years)	not used	8.000E-02	---	TE(3)
R19B	Translocation Factor for Non-Leafy	not used	1.000E-01	---	TIV(1)
R19B	Translocation Factor for Leafy	not used	1.000E+00	---	TIV(2)
R19B	Translocation Factor for Fodder	not used	1.000E+00	---	TIV(3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RDRY(1)
R19B	Dry Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RDRY(2)
R19B	Dry Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RDRY(3)
R19B	Wet Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RWET(1)
R19B	Wet Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RWET(2)
R19B	Wet Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RWET(3)
R19B	Weathering Removal Constant for Vegetation	not used	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm**3)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ

C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (1/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits non-leafy vegetables and grain	1.400E+01	1.400E+01	---	STOR_T(1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA(1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA(2)
TITL	Number of graphical time points	32	---	---	NPTS
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	1	---	---	KYMAX

Summary of Pathway Selections

Pathway	User Selection
1 -- external gamma	active
2 -- inhalation (w/o radon)	active
3 -- plant ingestion	suppressed
4 -- meat ingestion	suppressed
5 -- milk ingestion	suppressed
6 -- aquatic foods	suppressed
7 -- drinking water	active
8 -- soil ingestion	active
9 -- radon	suppressed
Find peak pathway doses	suppressed

Summary : Residual Dose and Risk Assessment for Pit A/B Under Future Recreational Recepto
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Contaminated Zone Dimensions		Initial Soil Concentrations pCi/g	
Area:	2160.00 square meters	Ac-227	1.000E+00
Thickness:	0.15 meters	Cs-137	1.000E+00
Cover Depth:	0.00 meters	H-3	1.000E+00
		Th-230	1.000E+00

0

Total Dose TDOSE(t) mrem/yr
Basic Radiation Dose Limit = 2.500E+01 mrem/yr
Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	2.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	2.127E-01	2.096E-01	2.042E-01	1.987E-01	1.625E-01	9.672E-02	2.322E-02	1.347E-02	5.454E-01
M(t):	8.509E-03	8.383E-03	8.169E-03	7.947E-03	6.498E-03	3.869E-03	9.290E-04	5.387E-04	2.182E-02

0Maximum TDOSE(t): 5.454E-01 mrem/yr at t = 1.000E+03 years

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	6.532E-02	0.3071	7.681E-05	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.081E-02	0.1918
Cs-137	1.047E-01	0.4922	3.660E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.385E-04	0.0007
H-3	0.000E+00	0.0000	1.472E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.447E-08	0.0000
Th-230	1.129E-04	0.0005	3.784E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.537E-03	0.0072
Total	1.702E-01	0.7999	8.075E-05	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.249E-02	0.1997

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years
Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.062E-01	0.4993
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.049E-01	0.4929
H-3	9.693E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.865E-06	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.653E-03	0.0078
Total	9.693E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.127E-01	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	6.325E-02	0.3018	7.435E-05	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.950E-02	0.1885
Cs-137	1.023E-01	0.4879	3.573E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.352E-04	0.0006
H-3	0.000E+00	0.0000	9.678E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.609E-11	0.0000
Th-230	2.517E-04	0.0012	3.782E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.538E-03	0.0073
Total	1.658E-01	0.7909	7.813E-05	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.117E-02	0.1965

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years
Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.028E-01	0.4906
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.024E-01	0.4886
H-3	2.564E-03	0.0122	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.564E-03	0.0122
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.793E-03	0.0086
Total	2.564E-03	0.0122	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.096E-01	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 2.000E+00 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	6.123E-02	0.2999	7.196E-05	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.823E-02	0.1872
Cs-137	9.986E-02	0.4890	3.488E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.320E-04	0.0006
H-3	0.000E+00	0.0000	6.361E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.057E-14	0.0000
Th-230	3.885E-04	0.0019	3.780E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.539E-03	0.0075
Total	1.615E-01	0.7907	7.574E-05	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.990E-02	0.1954

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 2.000E+00 years
Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.954E-02	0.4874
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.999E-02	0.4896
H-3	2.754E-03	0.0135	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.754E-03	0.0135
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.931E-03	0.0095
Total	2.754E-03	0.0135	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.042E-01	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	5.929E-02	0.2984	6.965E-05	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.701E-02	0.1863
Cs-137	9.752E-02	0.4908	3.406E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.289E-04	0.0006
H-3	0.000E+00	0.0000	4.181E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.950E-18	0.0000
Th-230	5.233E-04	0.0026	3.778E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.540E-03	0.0078
Total	1.573E-01	0.7918	7.343E-05	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.867E-02	0.1947

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years
Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.636E-02	0.4850
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.765E-02	0.4915
H-3	2.609E-03	0.0131	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.609E-03	0.0131
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.067E-03	0.0104
Total	2.609E-03	0.0131	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.987E-01	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+01 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	4.728E-02	0.2910	5.543E-05	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.945E-02	0.1813
Cs-137	8.259E-02	0.5084	2.879E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.089E-04	0.0007
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	1.415E-03	0.0087	3.763E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.555E-03	0.0096
Total	1.313E-01	0.8081	5.919E-05	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.111E-02	0.1915

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+01 years
Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.678E-02	0.4726
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.270E-02	0.5090
H-3	8.318E-23	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.318E-23	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.974E-03	0.0183
Total	8.318E-23	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.625E-01	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	2.477E-02	0.2561	2.886E-05	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.533E-02	0.1585
Cs-137	5.137E-02	0.5312	1.781E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.741E-05	0.0007
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	3.521E-03	0.0364	3.722E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.624E-03	0.0168
Total	7.966E-02	0.8236	3.258E-05	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.703E-02	0.1760

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years
Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.013E-02	0.4149
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.144E-02	0.5319
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.149E-03	0.0532
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.672E-02	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	2.575E-03	0.1109	2.939E-06	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.561E-03	0.0672
Cs-137	9.747E-03	0.4197	3.318E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.256E-05	0.0005
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	7.493E-03	0.3227	3.578E-06	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.827E-03	0.0787
Total	1.982E-02	0.8533	6.516E-06	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.401E-03	0.1465

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years
Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.140E-03	0.1782
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.760E-03	0.4203
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.324E-03	0.4015
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.322E-02	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	3.990E-06	0.0003	4.278E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.273E-06	0.0002
Cs-137	8.414E-05	0.0062	2.712E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.026E-07	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	9.187E-03	0.6822	3.172E-06	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.789E-03	0.1328
Total	9.275E-03	0.6887	3.176E-06	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.791E-03	0.1330

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years
Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.267E-06	0.0005
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.424E-05	0.0063
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	2.398E-03	0.1780	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.338E-02	0.9933
Total	2.398E-03	0.1780	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.347E-02	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	5.536E-16	0.0000	4.657E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.474E-16	0.0000
Cs-137	4.742E-12	0.0000	1.239E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.687E-15	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	6.853E-03	0.0126	1.919E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.090E-03	0.0020
Total	6.853E-03	0.0126	1.919E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.090E-03	0.0020

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years
Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.015E-16	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.747E-12	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	5.375E-01	0.9854	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.454E-01	1.0000
Total	5.375E-01	0.9854	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.454E-01	1.0000

*Sum of all water independent and dependent pathways.

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

0 Parent (i)	Product (j)	Thread Fraction	DSR(jt) At Time in Years (mrem/yr)/(pCi/g) 0.000E+00	1.000E+00	2.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ac-227+D	Ac-227+D	1.000E+00	1.062E-01	1.028E-01	9.954E-02	9.636E-02	7.678E-02	4.013E-02	4.140E-03	6.267E-06	8.015E-16
0Cs-137+D	Cs-137+D	1.000E+00	1.049E-01	1.024E-01	9.999E-02	9.765E-02	8.270E-02	5.144E-02	9.760E-03	8.424E-05	4.747E-12
0H-3	H-3	1.000E+00	9.865E-06	2.564E-03	2.754E-03	2.609E-03	8.318E-23	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0Th-230	Th-230	1.000E+00	1.582E-03	1.581E-03	1.581E-03	1.580E-03	1.573E-03	1.556E-03	1.495E-03	1.327E-03	8.123E-04
Th-230	Ra-226+D	1.000E+00	7.085E-05	2.112E-04	3.496E-04	4.860E-04	1.388E-03	3.517E-03	7.531E-03	1.005E-02	1.181E-01
Th-230	Pb-210+D	1.000E+00	4.562E-08	3.143E-07	8.383E-07	1.603E-06	1.265E-05	7.572E-05	2.983E-04	1.996E-03	4.265E-01
Th-230	-DSR(j)		1.653E-03	1.793E-03	1.931E-03	2.067E-03	2.974E-03	5.149E-03	9.324E-03	1.338E-02	5.454E-01

The DSR includes contributions from associated (half-life ó 180 days) daughters.

0

Single Radionuclide Soil Guidelines G(it) in pCi/g
Basic Radiation Dose Limit = 2.500E+01 mrem/yr

0Nuclide (i)	t= 0.000E+00	1.000E+00	2.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ac-227	2.354E+02	2.431E+02	2.512E+02	2.594E+02	3.256E+02	6.230E+02	6.039E+03	3.989E+06	*7.232E+13
Cs-137	2.384E+02	2.442E+02	2.500E+02	2.560E+02	3.023E+02	4.860E+02	2.561E+03	2.968E+05	5.267E+12
H-3	2.534E+06	9.749E+03	9.078E+03	9.584E+03	*9.597E+15	*9.597E+15	*9.597E+15	*9.597E+15	*9.597E+15
Th-230	1.512E+04	1.394E+04	1.295E+04	1.209E+04	8.406E+03	4.856E+03	2.681E+03	1.869E+03	4.583E+01

*At specific activity limit

0

Summed Dose/Source Ratios DSR(it) in (mrem/yr)/(pCi/g)
and Single Radionuclide Soil Guidelines G(it) in pCi/g
at tmin = time of minimum single radionuclide soil guideline
and at tmax = time of maximum total dose = 1.000E+03 years

0Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(itmin) (pCi/g)	G(itmin) (pCi/g)	DSR(itmax) (pCi/g)	G(itmax) (pCi/g)
Ac-227	1.000E+00	0.000E+00	1.062E-01	2.354E+02	8.015E-16	*7.232E+13
Cs-137	1.000E+00	0.000E+00	1.049E-01	2.384E+02	4.747E-12	5.267E+12
H-3	1.000E+00	1.378 ñ 0.003	2.830E-03	8.834E+03	0.000E+00	*9.597E+15
Th-230	1.000E+00	1.000E+03	5.454E-01	4.583E+01	5.454E-01	4.583E+01

*At specific activity limit

Individual Nuclide Dose Summed Over All Pathways
Parent Nuclide and Branch Fraction Indicated

0Nuclide (j)	Parent (i)	THF(i)	DOSE(jt) mrem/yr t= 0.000E+00	1.000E+00	2.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ac-227	Ac-227	1.000E+00	1.062E-01	1.028E-01	9.954E-02	9.636E-02	7.678E-02	4.013E-02	4.140E-03	6.267E-06	8.015E-16
0Cs-137	Cs-137	1.000E+00	1.049E-01	1.024E-01	9.999E-02	9.765E-02	8.270E-02	5.144E-02	9.760E-03	8.424E-05	4.747E-12
0H-3	H-3	1.000E+00	9.865E-06	2.564E-03	2.754E-03	2.609E-03	8.318E-23	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0Th-230	Th-230	1.000E+00	1.582E-03	1.581E-03	1.581E-03	1.580E-03	1.573E-03	1.556E-03	1.495E-03	1.327E-03	8.123E-04
0Ra-226	Th-230	1.000E+00	7.085E-05	2.112E-04	3.496E-04	4.860E-04	1.388E-03	3.517E-03	7.531E-03	1.005E-02	1.181E-01
0Pb-210	Th-230	1.000E+00	4.562E-08	3.143E-07	8.383E-07	1.603E-06	1.265E-05	7.572E-05	2.983E-04	1.996E-03	4.265E-01

THF(i) is the thread fraction of the parent nuclide.

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

0Nuclide (j)	Parent (i)	THF(i)	S(jt) pCi/g t= 0.000E+00	1.000E+00	2.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ac-227	Ac-227	1.000E+00	1.000E+00	9.683E-01	9.376E-01	9.078E-01	7.245E-01	3.803E-01	3.985E-02	6.329E-05	1.010E-14
0Cs-137	Cs-137	1.000E+00	1.000E+00	9.767E-01	9.539E-01	9.317E-01	7.898E-01	4.927E-01	9.444E-02	8.422E-04	5.642E-11
0H-3	H-3	1.000E+00	1.000E+00	6.576E-04	4.324E-07	2.843E-10	1.511E-32	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0Th-230	Th-230	1.000E+00	1.000E+00	9.998E-01	9.997E-01	9.995E-01	9.983E-01	9.949E-01	9.831E-01	9.501E-01	8.431E-01
0Ra-226	Th-230	1.000E+00	0.000E+00	4.302E-04	8.545E-04	1.273E-03	4.043E-03	1.062E-02	2.327E-02	2.973E-02	2.683E-02
0Pb-210	Th-230	1.000E+00	0.000E+00	6.612E-06	2.598E-05	5.741E-05	5.636E-04	3.627E-03	1.502E-02	2.275E-02	2.071E-02

THF(i) is the thread fraction of the parent nuclide.
0RESCALC.EXE execution time = 0.37 seconds

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Cancer Risk Slope Factors Summary Table
Risk Library: FGR 13 Morbidity

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Menu	Parameter	Current Value	Base Case*	Parameter Name
Sf-1	Ground external radiation slope factors, 1/yr per (pCi/g):			
Sf-1	Ac-227+D	1.47E-06	3.48E-10	SLPF(1,1)
Sf-1	Cs-137+D	2.55E-06	5.32E-10	SLPF(2,1)
Sf-1	H-3	0.00E+00	0.00E+00	SLPF(3,1)
Sf-1	Pb-210+D	4.21E-09	1.41E-09	SLPF(4,1)
Sf-1	Ra-226+D	8.49E-06	2.29E-08	SLPF(5,1)
Sf-1	Th-230	8.19E-10	8.19E-10	SLPF(6,1)
Sf-2	Inhalation, slope factors, 1/(pCi):			
Sf-2	Ac-227+D	2.13E-07	1.49E-07	SLPF(1,2)
Sf-2	Cs-137+D	1.12E-10	1.12E-10	SLPF(2,2)
Sf-2	H-3	8.51E-13	8.51E-13	SLPF(3,2)
Sf-2	Pb-210+D	3.08E-08	1.58E-08	SLPF(4,2)
Sf-2	Ra-226+D	2.83E-08	2.82E-08	SLPF(5,2)
Sf-2	Th-230	3.40E-08	3.40E-08	SLPF(6,2)
Sf-3	Food ingestion, slope factors, 1/(pCi):			
Sf-3	Ac-227+D	6.53E-10	2.45E-10	SLPF(1,3)
Sf-3	Cs-137+D	3.74E-11	3.74E-11	SLPF(2,3)
Sf-3	H-3	1.44E-13	1.44E-13	SLPF(3,3)
Sf-3	Pb-210+D	3.44E-09	1.18E-09	SLPF(4,3)
Sf-3	Ra-226+D	5.15E-10	5.14E-10	SLPF(5,3)
Sf-3	Th-230	1.19E-10	1.19E-10	SLPF(6,3)
Sf-3	Water ingestion, slope factors, 1/(pCi):			
Sf-3	Ac-227+D	4.86E-10	2.01E-10	SLPF(1,4)
Sf-3	Cs-137+D	3.04E-11	3.04E-11	SLPF(2,4)
Sf-3	H-3	1.12E-13	1.12E-13	SLPF(3,4)
Sf-3	Pb-210+D	2.66E-09	8.81E-10	SLPF(4,4)
Sf-3	Ra-226+D	3.86E-10	3.85E-10	SLPF(5,4)
Sf-3	Th-230	9.10E-11	9.10E-11	SLPF(6,4)
Sf-3	Soil ingestion, slope factors, 1/(pCi):			
Sf-3	Ac-227+D	6.53E-10	2.45E-10	SLPF(1,5)
Sf-3	Cs-137+D	3.74E-11	3.74E-11	SLPF(2,5)
Sf-3	H-3	1.44E-13	1.44E-13	SLPF(3,5)
Sf-3	Pb-210+D	3.44E-09	1.18E-09	SLPF(4,5)
Sf-3	Ra-226+D	5.15E-10	5.14E-10	SLPF(5,5)
Sf-3	Th-230	1.19E-10	1.19E-10	SLPF(6,5)
Sf-Rn	Radon Inhalation slope factors, 1/(pCi):			

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Sf-Rn  Rn-222                                                    1.80E-12   1.80E-12   SLPFRN(1,1)
Sf-Rn  Po-218                                                    3.70E-12   3.70E-12   SLPFRN(1,2)
Sf-Rn  Pb-214                                                    6.20E-12   6.20E-12   SLPFRN(1,3)
Sf-Rn  Bi-214                                                    1.50E-11   1.50E-11   SLPFRN(1,4)

Sf-Rn  Radon K factors, (mrem/WLM):
Sf-Rn  Rn-222 Indoor                                             7.60E+02   7.60E+02   KFACTR(1,1)
Sf-Rn  Rn-222 Outdoor                                            5.70E+02   5.70E+02   KFACTR(1,2)
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*Base Case means Default.Lib w/o Associate Nuclide contributions.
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Risk Slope and Environmental Transport Factors for the Ground Pathway

0Nuclide (i)	Slope(i)*	ETFG(i,t) At Time in Years (dimensionless)								
	t=	0.000E+00	1.000E+00	2.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ac-227	3.480E-10	3.514E-02	3.514E-02	3.514E-02	3.514E-02	3.512E-02	3.508E-02	3.494E-02	3.445E-02	3.138E-02
At-218	3.570E-09	3.581E-02	3.581E-02	3.581E-02	3.581E-02	3.582E-02	3.583E-02	3.588E-02	3.600E-02	3.617E-02
Ba-137m	2.690E-06	3.105E-02	3.105E-02	3.105E-02	3.104E-02	3.101E-02	3.092E-02	3.061E-02	2.963E-02	2.493E-02
Bi-210	2.760E-09	3.419E-02	3.419E-02	3.419E-02	3.418E-02	3.416E-02	3.411E-02	3.390E-02	3.323E-02	2.956E-02
Bi-211	1.880E-07	3.274E-02	3.274E-02	3.274E-02	3.273E-02	3.271E-02	3.263E-02	3.236E-02	3.151E-02	2.714E-02
Bi-214	7.480E-06	2.854E-02	2.854E-02	2.853E-02	2.853E-02	2.850E-02	2.840E-02	2.804E-02	2.695E-02	2.210E-02
Cs-137	5.320E-10	3.519E-02	3.519E-02	3.518E-02	3.518E-02	3.517E-02	3.513E-02	3.497E-02	3.447E-02	3.145E-02
Fr-223	1.400E-07	3.400E-02	3.400E-02	3.400E-02	3.399E-02	3.398E-02	3.393E-02	3.374E-02	3.313E-02	2.967E-02
H-3	0.000E+00	3.840E-02	3.840E-02	3.840E-02	3.840E-02	3.840E-02	3.840E-02	3.840E-02	3.840E-02	3.840E-02
Pb-210	1.410E-09	3.616E-02	3.616E-02	3.616E-02	3.616E-02	3.616E-02	3.617E-02	3.619E-02	3.627E-02	3.644E-02
Pb-211	2.290E-07	3.118E-02	3.117E-02	3.117E-02	3.116E-02	3.113E-02	3.105E-02	3.074E-02	2.976E-02	2.510E-02
Pb-214	9.820E-07	3.266E-02	3.265E-02	3.265E-02	3.265E-02	3.262E-02	3.255E-02	3.228E-02	3.143E-02	2.708E-02
Po-210	3.950E-11	3.047E-02	3.047E-02	3.046E-02	3.046E-02	3.043E-02	3.033E-02	3.001E-02	2.899E-02	2.422E-02
Po-211	3.580E-08	3.054E-02	3.054E-02	3.053E-02	3.053E-02	3.050E-02	3.041E-02	3.008E-02	2.908E-02	2.434E-02
Po-214	3.860E-10	3.035E-02	3.034E-02	3.034E-02	3.034E-02	3.030E-02	3.021E-02	2.989E-02	2.888E-02	2.414E-02
Po-215	7.480E-10	3.171E-02	3.170E-02	3.170E-02	3.169E-02	3.167E-02	3.158E-02	3.129E-02	3.036E-02	2.581E-02
Po-218	4.260E-11	3.030E-02	3.029E-02	3.029E-02	3.028E-02	3.025E-02	3.016E-02	2.983E-02	2.881E-02	2.407E-02
Ra-223	4.340E-07	3.389E-02	3.389E-02	3.388E-02	3.388E-02	3.386E-02	3.380E-02	3.359E-02	3.290E-02	2.912E-02
Ra-226	2.290E-08	3.416E-02	3.416E-02	3.416E-02	3.415E-02	3.413E-02	3.408E-02	3.387E-02	3.318E-02	2.937E-02
Rn-219	2.250E-07	3.269E-02	3.269E-02	3.269E-02	3.268E-02	3.266E-02	3.258E-02	3.231E-02	3.145E-02	2.710E-02
Rn-222	1.740E-09	3.147E-02	3.146E-02	3.146E-02	3.146E-02	3.143E-02	3.134E-02	3.104E-02	3.008E-02	2.545E-02
Th-227	3.780E-07	3.338E-02	3.338E-02	3.338E-02	3.338E-02	3.335E-02	3.329E-02	3.305E-02	3.228E-02	2.820E-02
Th-230	8.190E-10	3.544E-02	3.544E-02	3.544E-02	3.544E-02	3.544E-02	3.541E-02	3.534E-02	3.506E-02	3.293E-02
Tl-207	1.520E-08	3.141E-02	3.141E-02	3.141E-02	3.140E-02	3.137E-02	3.129E-02	3.099E-02	3.004E-02	2.547E-02
Tl-210	0.000E+00	3.840E-02	3.840E-02	3.840E-02	3.840E-02	3.840E-02	3.840E-02	3.840E-02	3.840E-02	3.840E-02

* - Units are 1/yr per (pCi/g) at infinite depth and area. Multiplication by ETFG(i,t) converts to site conditions.

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 0.000E+00 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Ac-227	1.161E-05	0.000E+00	0.000E+00	0.000E+00	2.803E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.803E+00
Cs-137	1.161E-05	0.000E+00	0.000E+00	0.000E+00	2.803E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.803E+00
H-3	1.686E+01	0.000E+00	0.000E+00	0.000E+00	2.803E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.803E+00
Pb-210	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ra-226	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	1.161E-05	0.000E+00	0.000E+00	0.000E+00	2.803E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.803E+00

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

0

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 0.000E+00 years

0

Radon Pathway	Radionuclides							
	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

0

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 0.000E+00 years

0

0

Radio-Nuclide	Ground		Water Independent Pathways (Inhalation excludes radon) Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	2.419E-07	0.3729	1.236E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.152E-09	0.0141
Cs-137	3.952E-07	0.6092	6.502E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.242E-10	0.0008
H-3	0.000E+00	0.0000	7.176E-11	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.018E-12	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	1.451E-10	0.0002	1.974E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.668E-09	0.0026
Total	6.373E-07	0.9824	8.610E-11	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.135E-08	0.0175

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 0.000E+00 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All Pathways** risk	All Pathways** fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.511E-07	0.3870
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.957E-07	0.6100
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.378E-11	0.0001
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.815E-09	0.0028
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.487E-07	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

0

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 0.000E+00 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

0

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 0.000E+00 years

0 Water Independent Pathways (Inhalation excludes radon)

0

Radio-Nuclide	Ground risk	Ground fract.	Inhalation risk	Inhalation fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	Soil risk	Soil fract.
Ac-227	2.419E-07	0.3729	1.236E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.152E-09	0.0141
Cs-137	3.952E-07	0.6092	6.502E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.242E-10	0.0008
H-3	0.000E+00	0.0000	7.176E-11	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.018E-12	0.0000
Th-230	1.451E-10	0.0002	1.974E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.668E-09	0.0026
Total	6.373E-07	0.9824	8.610E-11	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.135E-08	0.0175

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 0.000E+00 years

Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.511E-07	0.3870
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.957E-07	0.6100
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.378E-11	0.0001
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.815E-09	0.0028
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.487E-07	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 1.000E+00 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Ac-227	1.124E-05	0.000E+00	0.000E+00	0.000E+00	2.713E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.713E+00
Cs-137	1.134E-05	0.000E+00	0.000E+00	0.000E+00	2.737E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.737E+00
H-3	1.109E-02	0.000E+00	0.000E+00	0.000E+00	1.843E-03	7.270E+03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.270E+03
Pb-210	7.674E-11	0.000E+00	0.000E+00	0.000E+00	1.853E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.853E-05
Ra-226	4.993E-09	0.000E+00	0.000E+00	0.000E+00	1.205E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.205E-03
Th-230	1.160E-05	0.000E+00	0.000E+00	0.000E+00	2.802E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.802E+00

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

0

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 1.000E+00 years

0

Radon Pathway	Radionuclides							
	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

0

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+00 years

0

0

Radio-Nuclide	Ground		Water Independent Pathways (Inhalation excludes radon) Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	2.342E-07	0.3683	1.196E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.858E-09	0.0139
Cs-137	3.860E-07	0.6069	6.348E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.118E-10	0.0008
H-3	0.000E+00	0.0000	4.717E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.327E-15	0.0000
Pb-210	4.845E-15	0.0000	1.180E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.190E-13	0.0000
Ra-226	5.300E-10	0.0008	7.058E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.103E-12	0.0000
Th-230	1.451E-10	0.0002	1.973E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.667E-09	0.0026
Total	6.209E-07	0.9762	1.399E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.104E-08	0.0174

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+00 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All Pathways** risk	All Pathways** fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.431E-07	0.3822
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.865E-07	0.6077
H-3	4.071E-09	0.0064	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.071E-09	0.0064
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.238E-13	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.331E-10	0.0008
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.814E-09	0.0029
Total	4.071E-09	0.0064	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.360E-07	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

0

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 1.000E+00 years

0

Radon Pathway	Radionuclides Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

0

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+00 years

0

Water Independent Pathways (Inhalation excludes radon)

0

Radio-Nuclide	Ground risk	Ground fract.	Inhalation risk	Inhalation fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	Soil risk	Soil fract.
Ac-227	2.342E-07	0.3683	1.196E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.858E-09	0.0139
Cs-137	3.860E-07	0.6069	6.348E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.118E-10	0.0008
H-3	0.000E+00	0.0000	4.717E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.327E-15	0.0000
Th-230	6.751E-10	0.0011	1.974E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.670E-09	0.0026
Total	6.209E-07	0.9762	1.399E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.104E-08	0.0174

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+00 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All pathways risk	All pathways fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.431E-07	0.3822
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.865E-07	0.6077
H-3	4.071E-09	0.0064	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.071E-09	0.0064
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.347E-09	0.0037
Total	4.071E-09	0.0064	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.360E-07	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 2.000E+00 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)				Water Dependent Pathways						Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Ac-227	1.088E-05	0.000E+00	0.000E+00	0.000E+00	2.626E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.626E+00
Cs-137	1.107E-05	0.000E+00	0.000E+00	0.000E+00	2.672E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.672E+00
H-3	7.286E-06	0.000E+00	0.000E+00	0.000E+00	1.211E-06	4.422E+04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.422E+04
Pb-210	3.014E-10	0.000E+00	0.000E+00	0.000E+00	7.276E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.276E-05
Ra-226	9.913E-09	0.000E+00	0.000E+00	0.000E+00	2.393E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.393E-03
Th-230	1.160E-05	0.000E+00	0.000E+00	0.000E+00	2.800E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.800E+00

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

0

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 2.000E+00 years

0

Radon Pathway	Radionuclides							
	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

0

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 2.000E+00 years

0

0

Radio-Nuclide	Ground		Water Independent Pathways (Inhalation excludes radon) Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	2.268E-07	0.3541	1.158E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.574E-09	0.0134
Cs-137	3.769E-07	0.5885	6.198E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.996E-10	0.0008
H-3	0.000E+00	0.0000	3.100E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.720E-19	0.0000
Pb-210	1.903E-14	0.0000	4.634E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.253E-12	0.0000
Ra-226	1.052E-09	0.0016	1.401E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.160E-12	0.0000
Th-230	1.451E-10	0.0002	1.972E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.666E-09	0.0026
Total	6.049E-07	0.9445	1.356E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.075E-08	0.0168

Intrisk : Residual Dose and Risk Assessment for Pit A/B Under Future Recreational Recepto
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Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 2.000E+00 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All Pathways** risk	All Pathways** fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.354E-07	0.3675
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.774E-07	0.5893
H-3	2.477E-08	0.0387	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.477E-08	0.0387
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.272E-12	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.059E-09	0.0017
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.813E-09	0.0028
Total	2.477E-08	0.0387	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.404E-07	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways
0
Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 2.000E+00 years
0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent
0
Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 2.000E+00 years
0 Water Independent Pathways (Inhalation excludes radon)
0

Radio-Nuclide	Ground risk	Ground fract.	Inhalation risk	Inhalation fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	Soil risk	Soil fract.
Ac-227	2.268E-07	0.3541	1.158E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.574E-09	0.0134
Cs-137	3.769E-07	0.5885	6.198E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.996E-10	0.0008
H-3	0.000E+00	0.0000	3.100E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.720E-19	0.0000
Th-230	1.198E-09	0.0019	1.973E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.673E-09	0.0026
Total	6.049E-07	0.9445	1.356E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.075E-08	0.0168

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 2.000E+00 years

Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.354E-07	0.3675
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.774E-07	0.5893
H-3	2.477E-08	0.0387	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.477E-08	0.0387
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.873E-09	0.0045
Total	2.477E-08	0.0387	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.404E-07	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 3.000E+00 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Ac-227	1.053E-05	0.000E+00	0.000E+00	0.000E+00	2.542E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.542E+00
Cs-137	1.080E-05	0.000E+00	0.000E+00	0.000E+00	2.608E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.608E+00
H-3	4.789E-09	0.000E+00	0.000E+00	0.000E+00	7.961E-10	4.185E+04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.185E+04
Pb-210	6.658E-10	0.000E+00	0.000E+00	0.000E+00	1.607E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.607E-04
Ra-226	1.476E-08	0.000E+00	0.000E+00	0.000E+00	3.564E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.564E-03
Th-230	1.159E-05	0.000E+00	0.000E+00	0.000E+00	2.798E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.798E+00

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

0

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 3.000E+00 years

0

Radon Pathway	Radionuclides							
	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

0

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+00 years

0

0

Radio-Nuclide	Ground		Water Independent Pathways (Inhalation excludes radon) Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	2.196E-07	0.3523	1.121E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.299E-09	0.0133
Cs-137	3.681E-07	0.5905	6.051E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.878E-10	0.0008
H-3	0.000E+00	0.0000	2.038E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.732E-22	0.0000
Pb-210	4.206E-14	0.0000	1.024E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.767E-12	0.0000
Ra-226	1.568E-09	0.0025	2.087E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.172E-12	0.0000
Th-230	1.451E-10	0.0002	1.971E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.665E-09	0.0027
Total	5.893E-07	0.9456	1.318E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.046E-08	0.0168

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+00 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All Pathways** risk	All Pathways** fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.279E-07	0.3656
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.685E-07	0.5913
H-3	2.344E-08	0.0376	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.344E-08	0.0376
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.809E-12	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.577E-09	0.0025
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.812E-09	0.0029
Total	2.344E-08	0.0376	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.233E-07	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

0

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 3.000E+00 years

0

Radon Pathway	Radionuclides Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

0

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+00 years

0

Water Independent Pathways (Inhalation excludes radon)

0

Radio-Nuclide	Ground risk	Ground fract.	Inhalation risk	Inhalation fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	Soil risk	Soil fract.
Ac-227	2.196E-07	0.3523	1.121E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.299E-09	0.0133
Cs-137	3.681E-07	0.5905	6.051E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.878E-10	0.0008
H-3	0.000E+00	0.0000	2.038E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.732E-22	0.0000
Th-230	1.713E-09	0.0027	1.973E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.677E-09	0.0027
Total	5.893E-07	0.9456	1.318E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.046E-08	0.0168

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+00 years

Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.279E-07	0.3656
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.685E-07	0.5913
H-3	2.344E-08	0.0376	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.344E-08	0.0376
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.392E-09	0.0054
Total	2.344E-08	0.0376	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.233E-07	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 1.000E+01 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Ac-227	8.379E-06	0.000E+00	0.000E+00	0.000E+00	2.023E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.023E+00
Cs-137	9.134E-06	0.000E+00	0.000E+00	0.000E+00	2.205E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.205E+00
H-3	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	9.528E-15	0.000E+00	0.000E+00	0.000E+00	0.000E+00	9.528E-15
Pb-210	6.518E-09	0.000E+00	0.000E+00	0.000E+00	1.574E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.574E-03
Ra-226	4.676E-08	0.000E+00	0.000E+00	0.000E+00	1.129E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.129E-02
Th-230	1.155E-05	0.000E+00	0.000E+00	0.000E+00	2.787E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.787E+00

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

0

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 1.000E+01 years

0

Radon Pathway	Radionuclides							
	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

0

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+01 years

0

0

Radio-Nuclide	Ground		Water Independent Pathways (Inhalation excludes radon) Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	1.751E-07	0.3497	8.918E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.604E-09	0.0132
Cs-137	3.117E-07	0.6226	5.115E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.124E-10	0.0008
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	4.128E-13	0.0000	1.002E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.709E-11	0.0001
Ra-226	4.974E-09	0.0099	6.610E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.905E-11	0.0001
Th-230	1.449E-10	0.0003	1.963E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.658E-09	0.0033
Total	4.919E-07	0.9825	1.089E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.731E-09	0.0174

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Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+01 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All Pathways** risk	All Pathways** fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.817E-07	0.3629
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.121E-07	0.6234
H-3	5.335E-27	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.335E-27	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.750E-11	0.0001
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.003E-09	0.0100
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.805E-09	0.0036
Total	5.335E-27	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.007E-07	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways
0
Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 1.000E+01 years
0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent
0
Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+01 years
0 Water Independent Pathways (Inhalation excludes radon)
0

Radio-Nuclide	Ground risk	Ground fract.	Inhalation risk	Inhalation fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	Soil risk	Soil fract.
Ac-227	1.751E-07	0.3497	8.918E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.604E-09	0.0132
Cs-137	3.117E-07	0.6226	5.115E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.124E-10	0.0008
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	5.119E-09	0.0102	1.970E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.715E-09	0.0034
Total	4.919E-07	0.9825	1.089E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.731E-09	0.0174

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+01 years

Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.817E-07	0.3629
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.121E-07	0.6234
H-3	5.335E-27	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.335E-27	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.836E-09	0.0137
Total	5.335E-27	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.007E-07	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 3.000E+01 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Ac-227	4.363E-06	0.000E+00	0.000E+00	0.000E+00	1.053E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.053E+00
Cs-137	5.652E-06	0.000E+00	0.000E+00	0.000E+00	1.364E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.364E+00
H-3	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	4.160E-08	0.000E+00	0.000E+00	0.000E+00	1.004E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.004E-02
Ra-226	1.218E-07	0.000E+00	0.000E+00	0.000E+00	2.940E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.940E-02
Th-230	1.141E-05	0.000E+00	0.000E+00	0.000E+00	2.755E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.755E+00

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

0

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 3.000E+01 years

0

Radon Pathway	Radionuclides							
	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

0

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+01 years

0

0

Radio-Nuclide	Ground		Water Independent Pathways (Inhalation excludes radon) Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	9.172E-08	0.3013	4.643E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.439E-09	0.0113
Cs-137	1.939E-07	0.6370	3.165E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.551E-10	0.0008
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	2.653E-12	0.0000	6.398E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.729E-10	0.0006
Ra-226	1.301E-08	0.0428	1.721E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.567E-11	0.0002
Th-230	1.443E-10	0.0005	1.940E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.639E-09	0.0054
Total	2.988E-07	0.9816	6.610E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.582E-09	0.0183

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+01 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All Pathways** risk	All Pathways** fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.516E-08	0.3127
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.941E-07	0.6379
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.756E-10	0.0006
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.309E-08	0.0430
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.786E-09	0.0059
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.044E-07	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

0

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 3.000E+01 years

0

Radon Pathway	Radionuclides Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

0

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+01 years

0

Water Independent Pathways (Inhalation excludes radon)

0

Radio-Nuclide	Ground risk	Ground fract.	Inhalation risk	Inhalation fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	Soil risk	Soil fract.
Ac-227	9.172E-08	0.3013	4.643E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.439E-09	0.0113
Cs-137	1.939E-07	0.6370	3.165E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.551E-10	0.0008
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	1.316E-08	0.0432	1.964E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.888E-09	0.0062
Total	2.988E-07	0.9816	6.610E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.582E-09	0.0183

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+01 years

Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.516E-08	0.3127
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.941E-07	0.6379
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.505E-08	0.0495
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.044E-07	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 1.000E+02 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Ac-227	4.442E-07	0.000E+00	0.000E+00	0.000E+00	1.072E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.072E-01
Cs-137	1.053E-06	0.000E+00	0.000E+00	0.000E+00	2.541E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.541E-01
H-3	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	1.674E-07	0.000E+00	0.000E+00	0.000E+00	4.041E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.041E-02
Ra-226	2.593E-07	0.000E+00	0.000E+00	0.000E+00	6.261E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.261E-02
Th-230	1.096E-05	0.000E+00	0.000E+00	0.000E+00	2.646E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.646E+00

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

0

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 1.000E+02 years

0

Radon Pathway	Radionuclides							
	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

0

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+02 years

0

0

Radio-Nuclide	Ground		Water Independent Pathways (Inhalation excludes radon) Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	9.538E-09	0.1231	4.728E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.501E-10	0.0045
Cs-137	3.679E-08	0.4747	5.895E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.752E-11	0.0006
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	1.095E-11	0.0001	2.574E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.957E-10	0.0090
Ra-226	2.818E-08	0.3637	3.666E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.611E-10	0.0021
Th-230	1.423E-10	0.0018	1.863E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.574E-09	0.0203
Total	7.466E-08	0.9635	2.399E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.829E-09	0.0365

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+02 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All Pathways** risk	All Pathways** fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.888E-09	0.1276
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.684E-08	0.4754
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.067E-10	0.0091
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.834E-08	0.3658
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.718E-09	0.0222
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.749E-08	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

0

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 1.000E+02 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

0

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+02 years

0 Water Independent Pathways (Inhalation excludes radon)

0

Radio-Nuclide	Ground risk	Ground fract.	Inhalation risk	Inhalation fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	Soil risk	Soil fract.
Ac-227	9.538E-09	0.1231	4.728E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.501E-10	0.0045
Cs-137	3.679E-08	0.4747	5.895E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.752E-11	0.0006
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	2.834E-08	0.3656	1.925E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.431E-09	0.0314
Total	7.466E-08	0.9635	2.399E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.829E-09	0.0365

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+02 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All pathways risk	All pathways fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.888E-09	0.1276
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.684E-08	0.4754
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.077E-08	0.3970
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.749E-08	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 3.000E+02 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Ac-227	6.467E-10	0.000E+00	0.000E+00	0.000E+00	1.561E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.561E-04
Cs-137	8.606E-09	0.000E+00	0.000E+00	0.000E+00	2.078E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.078E-03
H-3	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	2.324E-07	0.000E+00	0.000E+00	0.000E+00	5.611E-02	2.064E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.626E-01
Ra-226	3.037E-07	0.000E+00	0.000E+00	0.000E+00	7.333E-02	5.925E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.658E-01
Th-230	9.708E-06	0.000E+00	0.000E+00	0.000E+00	2.344E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.344E+00

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

0

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 3.000E+02 years

0

Radon Pathway	Radionuclides							
	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

0

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+02 years

0

0

Radio-Nuclide	Ground		Water Independent Pathways (Inhalation excludes radon) Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	1.477E-11	0.0004	6.883E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.097E-13	0.0000
Cs-137	3.176E-10	0.0076	4.819E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.885E-13	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	1.637E-11	0.0004	3.574E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.659E-10	0.0232
Ra-226	3.467E-08	0.8335	4.293E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.887E-10	0.0045
Th-230	1.364E-10	0.0033	1.650E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.395E-09	0.0335
Total	3.515E-08	0.8452	1.730E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.550E-09	0.0613

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+02 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All Pathways** risk	All Pathways** fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.529E-11	0.0004
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.180E-10	0.0076
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	2.746E-09	0.0660	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.728E-09	0.0896
Ra-226	1.142E-09	0.0275	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.600E-08	0.8655
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.533E-09	0.0368
Total	3.888E-09	0.0935	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.159E-08	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

0

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 3.000E+02 years

0

Radon Pathway	Radionuclides Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

0

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+02 years

0

Water Independent Pathways (Inhalation excludes radon)

0

Radio-Nuclide	Ground risk	Ground fract.	Inhalation risk	Inhalation fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	Soil risk	Soil fract.
Ac-227	1.477E-11	0.0004	6.883E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.097E-13	0.0000
Cs-137	3.176E-10	0.0076	4.819E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.885E-13	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	3.482E-08	0.8372	1.729E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.549E-09	0.0613
Total	3.515E-08	0.8452	1.730E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.550E-09	0.0613

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+02 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All pathways risk	All pathways fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.529E-11	0.0004
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.180E-10	0.0076
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	3.888E-09	0.0935	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.126E-08	0.9920
Total	3.888E-09	0.0935	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.159E-08	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 1.000E+03 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Ac-227	7.040E-20	0.000E+00	0.000E+00	0.000E+00	1.700E-14	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.700E-14
Cs-137	3.930E-16	0.000E+00	0.000E+00	0.000E+00	9.489E-11	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	9.489E-11
H-3	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	1.443E-07	0.000E+00	0.000E+00	0.000E+00	3.483E-02	5.855E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.859E+01
Ra-226	1.869E-07	0.000E+00	0.000E+00	0.000E+00	4.513E-02	8.416E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.420E+01
Th-230	5.874E-06	0.000E+00	0.000E+00	0.000E+00	1.418E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.418E+00

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

0

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 1.000E+03 years

0

Radon Pathway	Radionuclides							
	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

0

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+03 years

0

0

Radio-Nuclide	Ground		Water Independent Pathways (Inhalation excludes radon) Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	2.050E-21	0.0000	7.492E-26	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.549E-23	0.0000
Cs-137	1.790E-17	0.0000	2.201E-25	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.774E-20	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	1.387E-11	0.0000	2.219E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.997E-10	0.0006
Ra-226	2.584E-08	0.0267	2.642E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.161E-10	0.0001
Th-230	1.137E-10	0.0001	9.986E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.438E-10	0.0009
Total	2.597E-08	0.0268	1.047E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.560E-09	0.0016

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+03 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All Pathways** risk	All Pathways** fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.105E-21	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.792E-17	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	7.787E-07	0.8041	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.793E-07	0.8047
Ra-226	1.622E-07	0.1675	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.882E-07	0.1943
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.585E-10	0.0010
Total	9.409E-07	0.9716	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.685E-07	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

0

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 1.000E+03 years

0

Radon Pathway	Radionuclides Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

0

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+03 years

0

Water Independent Pathways (Inhalation excludes radon)

0

Radio-Nuclide	Ground risk	Ground fract.	Inhalation risk	Inhalation fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	Soil risk	Soil fract.
Ac-227	2.050E-21	0.0000	7.492E-26	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.549E-23	0.0000
Cs-137	1.790E-17	0.0000	2.201E-25	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.774E-20	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	2.597E-08	0.0268	1.047E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.560E-09	0.0016
Total	2.597E-08	0.0268	1.047E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.560E-09	0.0016

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+03 years

Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.105E-21	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.792E-17	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	9.409E-07	0.9716	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.685E-07	1.0000
Total	9.409E-07	0.9716	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.685E-07	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

ATTACHMENT G-8

DOSE AND RISK CALCULATION AND

OUTPUT DOSE AND RISK ASSESSMENTS SUMMARY REPORTS

FOR DISPOSAL PIT C UNDER FUTURE RECREATIONAL RECEPTOR

Table G-8-1: Results of Residual Dose Assessment for Disposal Pit C under Future Recreational Receptor Scenario

Nuclide	EPC (pCi/g)	Dose to Source Ratio ((mrem/yr)/(pCi/g))									
		T = 2.4 Year					T=1000 Years				
		Ground	Inhalation	Soil	Water	All Pathways	Ground	Inhalation	Soil	Water	All Pathways
Cs-137	0.11	1.0E-01	4.0E-10	1.3E-04	0.0E+00	1.0E-01	4.9E-12	1.4E-20	4.7E-15	0.0E+00	4.9E-12
H-3	49.84	0.0E+00	7.5E-15	6.3E-16	2.7E-03	2.7E-03	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Pb-210	0	2.0E-04	2.8E-07	1.9E-02	0.0E+00	1.9E-02	1.2E-18	1.1E-21	6.9E-17	0.0E+00	7.1E-17
Ra-226	0	3.3E-01	1.4E-07	5.4E-03	0.0E+00	3.4E-01	1.5E-01	1.5E-07	8.2E-03	0.0E+00	1.6E-01
Ra-228	0.35	2.8E-01	2.5E-06	4.1E-03	0.0E+00	2.9E-01	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Th-230	0.2	4.6E-04	4.4E-06	1.5E-03	0.0E+00	2.0E-03	8.1E-02	2.3E-06	4.9E-03	0.0E+00	8.6E-02
U-234	0.03	1.5E-05	1.8E-06	7.9E-04	0.0E+00	8.1E-04	3.6E-04	6.6E-07	3.1E-04	0.0E+00	6.7E-04

Nuclide	Dose (mrem/yr)									
	T = 2.4 Year					T=1000 Years				
	Ground	Inhalation	Soil	Water	All Pathways	Ground	Inhalation	Soil	Water	All Pathways
Cs-137	1.1E-02	4.4E-11	1.4E-05	0.0E+00	1.1E-02	5.4E-13	1.6E-21	5.2E-16	0.0E+00	5.4E-13
H-3	0.0E+00	3.7E-13	3.1E-14	1.3E-01	1.3E-01	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Pb-210	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Ra-226	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Ra-228	9.8E-02	8.7E-07	1.4E-03	0.0E+00	1.0E-01	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Th-230	9.2E-05	8.7E-07	3.1E-04	0.0E+00	4.0E-04	1.6E-02	4.6E-07	9.9E-04	0.0E+00	1.7E-02
U-234	4.4E-07	5.3E-08	2.4E-05	0.0E+00	2.4E-05	1.1E-05	2.0E-08	9.4E-06	0.0E+00	2.0E-05
	Cumulative Dose				**2.5E-01**	**Cumulative Dose**				**1.7E-02**

Table G-8-2: Results of Residual Risk Assessment for Disposal Pit C under Future Recreational Receptor Scenario

Nuclide	EPC (pCi/g)	Risk to Source Ratio (1/(pCi/g))									
		T = 2.4 Year					T=1000 Years				
		Ground	Inhalation	Soil	Water	All Pathways	Ground	Inhalation	Soil	Water	All Pathways
Cs-137	0.11	3.8E-07	7.1E-15	4.9E-10	0.0E+00	3.8E-07	1.9E-17	2.5E-25	1.8E-20	0.0E+00	1.9E-17
H-3	49.84	0.0E+00	3.3E-18	4.7E-20	2.4E-08	2.4E-08	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Pb-210	0.05	7.0E-10	1.9E-12	4.5E-08	0.0E+00	4.5E-08	4.0E-24	7.1E-27	1.7E-22	0.0E+00	1.7E-22
Ra-226	0	1.3E-06	2.0E-12	1.1E-08	0.0E+00	1.3E-06	5.9E-07	1.4E-12	1.9E-08	0.0E+00	6.1E-07
Ra-228	0	1.1E-06	6.9E-12	1.8E-08	0.0E+00	1.1E-06	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Th-230	0.2	1.5E-09	2.3E-12	1.7E-09	0.0E+00	3.1E-09	3.1E-07	1.8E-12	1.0E-08	0.0E+00	3.2E-07
U-234	0.03	4.6E-11	1.9E-12	1.3E-09	0.0E+00	1.4E-09	1.3E-09	6.9E-13	5.4E-10	0.0E+00	1.9E-09

Nuclide	Risk (unitless)									
	T = 2.4 Year					T=1000 Years				
	Ground	Inhalation	Soil	Water	All Pathways	Ground	Inhalation	Soil	Water	All Pathways
Cs-137	4.2E-08	7.8E-16	5.4E-11	0.0E+00	4.2E-08	2.0E-18	2.8E-26	2.0E-21	0.0E+00	2.0E-18
H-3	0.0E+00	1.6E-16	2.3E-18	1.2E-06	1.2E-06	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Pb-210	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Ra-226	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Ra-228	3.7E-07	2.4E-12	6.3E-09	0.0E+00	3.8E-07	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Th-230	2.9E-10	4.5E-13	3.4E-10	0.0E+00	6.3E-10	6.1E-08	3.7E-13	2.1E-09	0.0E+00	6.3E-08
U-234	1.4E-12	5.6E-14	4.0E-11	0.0E+00	4.2E-11	4.0E-11	2.1E-14	1.6E-11	0.0E+00	5.6E-11
	Cumulative Risk				**2E-06**	**Cumulative Risk**				**6E-08**

Summary : Residual Dose and Risk Assessment for Pit C Under Recreational Receptor Scenari
File : C:\USERS\MRAHMAN\DOCUMENTS\OLD RESRAD FILES\PIT C-RECREATIONAL RECEPTOR.RAD

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Dose Conversion Factor (and Related) Parameter Summary
Dose Library: FGR 12 & FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation (mrem/yr)/(pCi/g)			
A-1	Ac-228 (Source: FGR 12)	5.978E+00	5.978E+00	DCF1(1)
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1(2)
A-1	Ba-137m (Source: FGR 12)	3.606E+00	3.606E+00	DCF1(3)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1(4)
A-1	Bi-212 (Source: FGR 12)	1.171E+00	1.171E+00	DCF1(5)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1(6)
A-1	Cs-137 (Source: FGR 12)	7.510E-04	7.510E-04	DCF1(7)
A-1	H-3 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1(8)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1(9)
A-1	Pb-212 (Source: FGR 12)	7.043E-01	7.043E-01	DCF1(10)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1(11)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1(12)
A-1	Po-212 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1(13)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1(14)
A-1	Po-216 (Source: FGR 12)	1.042E-04	1.042E-04	DCF1(15)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1(16)
A-1	Ra-224 (Source: FGR 12)	5.119E-02	5.119E-02	DCF1(17)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1(18)
A-1	Ra-228 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1(19)
A-1	Rn-220 (Source: FGR 12)	2.298E-03	2.298E-03	DCF1(20)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1(21)
A-1	Th-228 (Source: FGR 12)	7.940E-03	7.940E-03	DCF1(22)
A-1	Th-230 (Source: FGR 12)	1.209E-03	1.209E-03	DCF1(23)
A-1	Tl-208 (Source: FGR 12)	2.298E+01	2.298E+01	DCF1(24)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1(25)
A-1	U-234 (Source: FGR 12)	4.017E-04	4.017E-04	DCF1(26)
B-1	Dose conversion factors for inhalation mrem/pCi:			
B-1	Cs-137+D	3.190E-05	3.190E-05	DCF2(1)
B-1	H-3	6.400E-08	6.400E-08	DCF2(2)
B-1	Pb-210+D	2.320E-02	1.360E-02	DCF2(3)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2(4)
B-1	Ra-228+D	5.078E-03	4.770E-03	DCF2(5)
B-1	Th-228+D	3.454E-01	3.420E-01	DCF2(6)
B-1	Th-230	3.260E-01	3.260E-01	DCF2(7)
B-1	U-234	1.320E-01	1.320E-01	DCF2(8)
D-1	Dose conversion factors for ingestion mrem/pCi:			
D-1	Cs-137+D	5.000E-05	5.000E-05	DCF3(1)
D-1	H-3	6.400E-08	6.400E-08	DCF3(2)

D-1	Pb-210+D	7.276E-03	5.370E-03	DCF3(3)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3(4)
D-1	Ra-228+D	1.442E-03	1.440E-03	DCF3(5)
D-1	Th-228+D	8.086E-04	3.960E-04	DCF3(6)
D-1	Th-230	5.480E-04	5.480E-04	DCF3(7)
D-1	U-234	2.830E-04	2.830E-04	DCF3(8)

Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: FGR 12 & FGR 11

Menu	Parameter		Current Value#	Base Case*	Parameter Name
D-34	Food transfer factors:				
D-34	Cs-137+D	plant/soil concentration ratio dimensionless	4.000E-02	4.000E-02	RTF(11)
D-34	Cs-137+D	beef/livestock-intake ratio (pCi/kg)/(pCi/d)	3.000E-02	3.000E-02	RTF(12)
D-34	Cs-137+D	milk/livestock-intake ratio (pCi/L)/(pCi/d)	8.000E-03	8.000E-03	RTF(13)
D-34					
D-34	H-3	plant/soil concentration ratio dimensionless	4.800E+00	4.800E+00	RTF(21)
D-34	H-3	beef/livestock-intake ratio (pCi/kg)/(pCi/d)	1.200E-02	1.200E-02	RTF(22)
D-34	H-3	milk/livestock-intake ratio (pCi/L)/(pCi/d)	1.000E-02	1.000E-02	RTF(23)
D-34					
D-34	Pb-210+D	plant/soil concentration ratio dimensionless	1.000E-02	1.000E-02	RTF(31)
D-34	Pb-210+D	beef/livestock-intake ratio (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(32)
D-34	Pb-210+D	milk/livestock-intake ratio (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(33)
D-34					
D-34	Ra-226+D	plant/soil concentration ratio dimensionless	4.000E-02	4.000E-02	RTF(41)
D-34	Ra-226+D	beef/livestock-intake ratio (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(42)
D-34	Ra-226+D	milk/livestock-intake ratio (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(43)
D-34					
D-34	Ra-228+D	plant/soil concentration ratio dimensionless	4.000E-02	4.000E-02	RTF(51)
D-34	Ra-228+D	beef/livestock-intake ratio (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(52)
D-34	Ra-228+D	milk/livestock-intake ratio (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(53)
D-34					
D-34	Th-228+D	plant/soil concentration ratio dimensionless	1.000E-03	1.000E-03	RTF(61)
D-34	Th-228+D	beef/livestock-intake ratio (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(62)
D-34	Th-228+D	milk/livestock-intake ratio (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(63)
D-34					
D-34	Th-230	plant/soil concentration ratio dimensionless	1.000E-03	1.000E-03	RTF(71)
D-34	Th-230	beef/livestock-intake ratio (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(72)
D-34	Th-230	milk/livestock-intake ratio (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(73)
D-34					
D-34	U-234	plant/soil concentration ratio dimensionless	2.500E-03	2.500E-03	RTF(81)
D-34	U-234	beef/livestock-intake ratio (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(82)
D-34	U-234	milk/livestock-intake ratio (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(83)
D-5	Bioaccumulation factors fresh water L/kg:				
D-5	Cs-137+D	fish	2.000E+03	2.000E+03	BIOFAC(11)
D-5	Cs-137+D	crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(12)
D-5					
D-5	H-3	fish	1.000E+00	1.000E+00	BIOFAC(21)
D-5	H-3	crustacea and mollusks	1.000E+00	1.000E+00	BIOFAC(22)
D-5					
D-5	Pb-210+D	fish	3.000E+02	3.000E+02	BIOFAC(31)

```
D-5   Pb-210+D   crustacea and mollusks                    1.000E+02  1.000E+02  BIOFAC(  32)
D-5
D-5   Ra-226+D   fish                                      5.000E+01  5.000E+01  BIOFAC(  41)
D-5   Ra-226+D   crustacea and mollusks                    2.500E+02  2.500E+02  BIOFAC(  42)
D-5
D-5   Ra-228+D   fish                                      5.000E+01  5.000E+01  BIOFAC(  51)
D-5   Ra-228+D   crustacea and mollusks                    2.500E+02  2.500E+02  BIOFAC(  52)
D-5
```

Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: FGR 12 & FGR 11

Menu		Parameter	Current Value#	Base Case*	Parameter Name
D-5	Th-228+D	fish	1.000E+02	1.000E+02	BIOFAC(61)
D-5	Th-228+D	crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(62)
D-5					
D-5	Th-230	fish	1.000E+02	1.000E+02	BIOFAC(71)
D-5	Th-230	crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(72)
D-5					
D-5	U-234	fish	1.000E+01	1.000E+01	BIOFAC(81)
D-5	U-234	crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(82)

#For DCF1(xxx) only factors are for infinite depth & area. See ETFG table in Ground Pathway of Detailed Report.
*Base Case means Default.Lib w/o Associate Nuclide contributions.

Site-Specific Parameter Summary

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	8.404E+03	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E-01	2.000E+00	---	THICK0
R011	Fraction of contamination that is submerged	0.000E+00	0.000E+00	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	9.200E+01	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	2.500E+01	3.000E+01	---	BRDL
R011	Time since placement of material (yr)	0.000E+00	0.000E+00	---	TI
R011	Times for calculations (yr)	1.000E+00	1.000E+00	---	T(2)
R011	Times for calculations (yr)	2.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	2.400E+00	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+00	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+01	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+01	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+02	1.000E+03	---	T(8)
R011	Times for calculations (yr)	1.000E+03	0.000E+00	---	T(9)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): Cs-137	1.000E+00	0.000E+00	---	S1(1)
R012	Initial principal radionuclide (pCi/g): H-3	1.000E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Pb-210	1.000E+00	0.000E+00	---	S1(3)
R012	Initial principal radionuclide (pCi/g): Ra-226	1.000E+00	0.000E+00	---	S1(4)
R012	Initial principal radionuclide (pCi/g): Ra-228	1.000E+00	0.000E+00	---	S1(5)
R012	Initial principal radionuclide (pCi/g): Th-230	1.000E+00	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): U-234	1.000E+00	0.000E+00	---	S1(8)
R012	Concentration in groundwater (pCi/L): Cs-137	not used	0.000E+00	---	W1(1)
R012	Concentration in groundwater (pCi/L): H-3	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Pb-210	not used	0.000E+00	---	W1(3)
R012	Concentration in groundwater (pCi/L): Ra-226	not used	0.000E+00	---	W1(4)
R012	Concentration in groundwater (pCi/L): Ra-228	not used	0.000E+00	---	W1(5)
R012	Concentration in groundwater (pCi/L): Th-230	not used	0.000E+00	---	W1(7)
R012	Concentration in groundwater (pCi/L): U-234	not used	0.000E+00	---	W1(8)
R013	Cover depth (m)	0.000E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)	not used	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	1.280E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	6.000E-05	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	3.700E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	6.000E-02	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	2.900E+01	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	7.750E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	3.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	6.600E+00	8.000E+00	---	HUMID

R013	Evapotranspiration coefficient	7.000E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	7.500E-01	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	0.000E+00	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	1.300E+07	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	1.000E-03	1.000E-03	---	EPS

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R014	Density of saturated zone (g/cm**3)	1.500E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	3.700E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	1.750E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	2.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	2.900E+02	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	1.100E-02	2.000E-02	---	HGWT
R014	Saturated zone b parameter	not used	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	0.000E+00	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	3.000E+00	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	ND	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	not used	2.500E+02	---	UW
R015	Number of unsaturated zone strata	1	1	---	NS
R015	Unsat. zone 1 thickness (m)	1.000E+00	4.000E+00	---	H(1)
R015	Unsat. zone 1 soil density (g/cm**3)	1.500E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1 total porosity	3.700E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1 effective porosity	1.750E-01	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1 field capacity	2.000E-01	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1 soil-specific b parameter	7.750E+00	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1 hydraulic conductivity (m/yr)	2.900E+01	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Cs-137				
R016	Contaminated zone (cm**3/g)	1.900E+03	4.600E+03	---	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	1.900E+03	4.600E+03	---	DCNUCU(11)
R016	Saturated zone (cm**3/g)	1.900E+03	4.600E+03	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.934E-04	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for H-3				
R016	Contaminated zone (cm**3/g)	6.000E-02	0.000E+00	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	6.000E-02	0.000E+00	---	DCNUCU(21)
R016	Saturated zone (cm**3/g)	6.000E-02	0.000E+00	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.353E+00	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for Pb-210				
R016	Contaminated zone (cm**3/g)	5.500E+02	1.000E+02	---	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	5.500E+02	1.000E+02	---	DCNUCU(31)
R016	Saturated zone (cm**3/g)	5.500E+02	1.000E+02	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.704E-03	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)

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R016  Distribution coefficients for Ra-226
R016    Contaminated zone (cm**3/g)          9.100E+03  7.000E+01          ---          DCNUCC( 4)
R016    Unsaturated zone 1 (cm**3/g)         9.100E+03  7.000E+01          ---          DCNUCU( 41)
R016    Saturated zone (cm**3/g)             9.100E+03  7.000E+01          ---          DCNUCS( 4)
R016    Leach rate (/yr)                     0.000E+00  0.000E+00       1.030E-04       ALEACH( 4)
R016    Solubility constant                  0.000E+00  0.000E+00       not used        SOLUBK( 4)
```

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Ra-228				
R016	Contaminated zone (cm**3/g)	9.100E+03	7.000E+01	---	DCNUCC(5)
R016	Unsaturated zone 1 (cm**3/g)	9.100E+03	7.000E+01	---	DCNUCU(51)
R016	Saturated zone (cm**3/g)	9.100E+03	7.000E+01	---	DCNUCS(5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.030E-04	ALEACH(5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(5)
R016	Distribution coefficients for Th-230				
R016	Contaminated zone (cm**3/g)	5.800E+03	6.000E+04	---	DCNUCC(7)
R016	Unsaturated zone 1 (cm**3/g)	5.800E+03	6.000E+04	---	DCNUCU(71)
R016	Saturated zone (cm**3/g)	5.800E+03	6.000E+04	---	DCNUCS(7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.616E-04	ALEACH(7)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(7)
R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	1.900E+03	5.000E+01	---	DCNUCC(8)
R016	Unsaturated zone 1 (cm**3/g)	1.900E+03	5.000E+01	---	DCNUCU(81)
R016	Saturated zone (cm**3/g)	1.900E+03	5.000E+01	---	DCNUCS(8)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.934E-04	ALEACH(8)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(8)
R016	Distribution coefficients for daughter Th-228				
R016	Contaminated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCC(6)
R016	Unsaturated zone 1 (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCU(61)
R016	Saturated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCS(6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.562E-05	ALEACH(6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(6)
R017	Inhalation rate (m**3/yr)	3.176E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	7.580E-07	1.000E-04	---	MLINH
R017	Exposure duration	5.000E+00	3.000E+01	---	ED
R017	Shielding factor inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor external gamma	4.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	0.000E+00	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	3.840E-02	2.500E-01	---	FOTD
R017	Shape factor flag external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m) ring 1:	not used	5.000E+01	---	RAD_SHAPE(1)
R017	Outer annular radius (m) ring 2:	not used	7.071E+01	---	RAD_SHAPE(2)
R017	Outer annular radius (m) ring 3:	not used	0.000E+00	---	RAD_SHAPE(3)
R017	Outer annular radius (m) ring 4:	not used	0.000E+00	---	RAD_SHAPE(4)
R017	Outer annular radius (m) ring 5:	not used	0.000E+00	---	RAD_SHAPE(5)

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R017    Outer annular radius (m) ring  6:            not used   0.000E+00            ---              RAD_SHAPE( 6)
R017    Outer annular radius (m) ring  7:            not used   0.000E+00            ---              RAD_SHAPE( 7)
R017    Outer annular radius (m) ring  8:            not used   0.000E+00            ---              RAD_SHAPE( 8)
R017    Outer annular radius (m) ring  9:            not used   0.000E+00            ---              RAD_SHAPE( 9)
R017    Outer annular radius (m) ring 10:            not used   0.000E+00            ---              RAD_SHAPE(10)
R017    Outer annular radius (m) ring 11:            not used   0.000E+00            ---              RAD_SHAPE(11)
R017    Outer annular radius (m) ring 12:            not used   0.000E+00            ---              RAD_SHAPE(12)
```

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA(1)
R017	Ring 2	not used	2.732E-01	---	FRACA(2)
R017	Ring 3	not used	0.000E+00	---	FRACA(3)
R017	Ring 4	not used	0.000E+00	---	FRACA(4)
R017	Ring 5	not used	0.000E+00	---	FRACA(5)
R017	Ring 6	not used	0.000E+00	---	FRACA(6)
R017	Ring 7	not used	0.000E+00	---	FRACA(7)
R017	Ring 8	not used	0.000E+00	---	FRACA(8)
R017	Ring 9	not used	0.000E+00	---	FRACA(9)
R017	Ring 10	not used	0.000E+00	---	FRACA(10)
R017	Ring 11	not used	0.000E+00	---	FRACA(11)
R017	Ring 12	not used	0.000E+00	---	FRACA(12)
R018	Fruits vegetables and grain consumption (kg/yr)	not used	1.600E+02	---	DIET(1)
R018	Leafy vegetable consumption (kg/yr)	not used	1.400E+01	---	DIET(2)
R018	Milk consumption (L/yr)	not used	9.200E+01	---	DIET(3)
R018	Meat and poultry consumption (kg/yr)	not used	6.300E+01	---	DIET(4)
R018	Fish consumption (kg/yr)	not used	5.400E+00	---	DIET(5)
R018	Other seafood consumption (kg/yr)	not used	9.000E-01	---	DIET(6)
R018	Soil ingestion rate (g/yr)	7.300E+01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	3.650E+02	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	1.000E+00	1.000E+00	---	FDW
R018	Contamination fraction of household water	not used	1.000E+00	---	FHHW
R018	Contamination fraction of livestock water	not used	1.000E+00	---	FLW
R018	Contamination fraction of irrigation water	not used	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	not used	5.000E-01	---	FR9
R018	Contamination fraction of plant food	not used	-1	---	FPLANT
R018	Contamination fraction of meat	not used	-1	---	FMEAT
R018	Contamination fraction of milk	not used	-1	---	FMILK
R019	Livestock fodder intake for meat (kg/day)	not used	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	not used	5.500E+01	---	LFI6
R019	Livestock water intake for meat (L/day)	not used	5.000E+01	---	LWI5
R019	Livestock water intake for milk (L/day)	not used	1.600E+02	---	LWI6
R019	Livestock soil intake (kg/day)	not used	5.000E-01	---	LSI
R019	Mass loading for foliar deposition (g/m**3)	not used	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	1.500E-01	1.500E-01	---	DM
R019	Depth of roots (m)	not used	9.000E-01	---	DROOT
R019	Drinking water fraction from ground water	1.000E+00	1.000E+00	---	FGWDW
R019	Household water fraction from ground water	not used	1.000E+00	---	FGWHH
R019	Livestock water fraction from ground water	not used	1.000E+00	---	FGWLW

R019	Irrigation fraction from ground water	not used	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	not used	7.000E-01	---	YV(1)
R19B	Wet weight crop yield for Leafy (kg/m**2)	not used	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	not used	1.100E+00	---	YV(3)
R19B	Growing Season for Non-Leafy (years)	not used	1.700E-01	---	TE(1)
R19B	Growing Season for Leafy (years)	not used	2.500E-01	---	TE(2)
R19B	Growing Season for Fodder (years)	not used	8.000E-02	---	TE(3)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R19B	Translocation Factor for Non-Leafy	not used	1.000E-01	---	TIV(1)
R19B	Translocation Factor for Leafy	not used	1.000E+00	---	TIV(2)
R19B	Translocation Factor for Fodder	not used	1.000E+00	---	TIV(3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RDRY(1)
R19B	Dry Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RDRY(2)
R19B	Dry Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RDRY(3)
R19B	Wet Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RWET(1)
R19B	Wet Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RWET(2)
R19B	Wet Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RWET(3)
R19B	Weathering Removal Constant for Vegetation	not used	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm**3)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (1/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits non-leafy vegetables and grain	1.400E+01	1.400E+01	---	STOR_T(1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ

R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA(1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA(2)
TITL	Number of graphical time points	32	---	---	NPTS

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	1	---	---	KYMAX

Summary of Pathway Selections

Pathway	User Selection
1 -- external gamma	active
2 -- inhalation (w/o radon)	active
3 -- plant ingestion	suppressed
4 -- meat ingestion	suppressed
5 -- milk ingestion	suppressed
6 -- aquatic foods	suppressed
7 -- drinking water	active
8 -- soil ingestion	active
9 -- radon	suppressed
Find peak pathway doses	suppressed

Summary : Residual Dose and Risk Assessment for Pit C Under Recreational Receptor Scenari
File : C:\USERS\MRAHMAN\DOCUMENTS\OLD RESRAD FILES\PIT C-RECREATIONAL RECEPTOR.RAD

Contaminated Zone Dimensions		Initial Soil Concentrations pCi/g	
Area:	8404.00 square meters	Cs-137	1.000E+00
Thickness:	0.15 meters	H-3	1.000E+00
Cover Depth:	0.00 meters	Pb-210	1.000E+00
		Ra-226	1.000E+00
		Ra-228	1.000E+00
		Th-230	1.000E+00
		U-234	1.000E+00

0

Total Dose TDOSE(t) mrem/yr
Basic Radiation Dose Limit = 2.500E+01 mrem/yr
Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	2.000E+00	2.400E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	1.000E+03
TDOSE(t):	6.884E-01	7.327E-01	7.485E-01	7.496E-01	7.473E-01	6.092E-01	4.251E-01	3.595E-01	2.494E-01
M(t):	2.753E-02	2.931E-02	2.994E-02	2.999E-02	2.989E-02	2.437E-02	1.700E-02	1.438E-02	9.974E-03

0Maximum TDOSE(t): 7.496E-01 mrem/yr at t = 2.384 ñ 0.005 years
0

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 2.384E+00 years
0 Water Independent Pathways (Inhalation excludes radon)

0 Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	1.014E-01	0.1353	3.979E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.308E-04	0.0002
H-3	0.000E+00	0.0000	7.500E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.320E-16	0.0000
Pb-210	1.996E-04	0.0003	2.818E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.854E-02	0.0247
Ra-226	3.330E-01	0.4443	1.410E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.434E-03	0.0072
Ra-228	2.814E-01	0.3753	2.488E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.051E-03	0.0054
Th-230	4.602E-04	0.0006	4.351E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.539E-03	0.0021
U-234	1.474E-05	0.0000	1.760E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.913E-04	0.0011
Total	7.165E-01	0.9557	9.023E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.048E-02	0.0407

Summary : Residual Dose and Risk Assessment for Pit C Under Recreational Receptor Scenari
File : C:\USERS\MRAHMAN\DOCUMENTS\OLD RESRAD FILES\PIT C-RECREATIONAL RECEPTOR.RAD

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 2.384E+00 years

0	Water Dependent Pathways													
0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.015E-01	0.1354
H-3	2.696E-03	0.0036	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.696E-03	0.0036
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.874E-02	0.0250
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.385E-01	0.4515
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.854E-01	0.3807
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.004E-03	0.0027
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.078E-04	0.0011
Total	2.696E-03	0.0036	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.496E-01	1.0000

0*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	1.073E-01	0.1559	4.214E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.385E-04	0.0002
H-3	0.000E+00	0.0000	2.904E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.447E-08	0.0000
Pb-210	2.158E-04	0.0003	3.050E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.006E-02	0.0291
Ra-226	3.336E-01	0.4846	1.196E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.014E-03	0.0058
Ra-228	2.164E-01	0.3144	7.778E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.158E-03	0.0060
Th-230	1.161E-04	0.0002	4.357E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.537E-03	0.0022
U-234	1.475E-05	0.0000	1.764E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.930E-04	0.0012
Total	6.577E-01	0.9554	7.614E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.070E-02	0.0446

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years
Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.074E-01	0.1561
H-3	9.693E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.001E-05	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.028E-02	0.0295
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.376E-01	0.4904
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.206E-01	0.3205
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.657E-03	0.0024
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.095E-04	0.0012
Total	9.693E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.884E-01	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	1.048E-01	0.1430	4.114E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.352E-04	0.0002
H-3	0.000E+00	0.0000	1.909E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.609E-11	0.0000
Pb-210	2.088E-04	0.0003	2.951E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.941E-02	0.0265
Ra-226	3.333E-01	0.4550	1.288E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.624E-03	0.0063
Ra-228	2.608E-01	0.3559	1.793E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.226E-03	0.0058
Th-230	2.605E-04	0.0004	4.355E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.538E-03	0.0021
U-234	1.475E-05	0.0000	1.762E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.923E-04	0.0011
Total	6.994E-01	0.9546	8.335E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.072E-02	0.0419

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years
Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.049E-01	0.1432
H-3	2.564E-03	0.0035	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.564E-03	0.0035
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.962E-02	0.0268
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.380E-01	0.4613
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.650E-01	0.3617
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.802E-03	0.0025
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.088E-04	0.0011
Total	2.564E-03	0.0035	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.327E-01	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 2.000E+00 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	1.023E-01	0.1367	4.016E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.320E-04	0.0002
H-3	0.000E+00	0.0000	1.255E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.057E-14	0.0000
Pb-210	2.021E-04	0.0003	2.854E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.877E-02	0.0251
Ra-226	3.331E-01	0.4450	1.377E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.213E-03	0.0070
Ra-228	2.791E-01	0.3729	2.357E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.121E-03	0.0055
Th-230	4.048E-04	0.0005	4.352E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.539E-03	0.0021
U-234	1.474E-05	0.0000	1.761E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.916E-04	0.0011
Total	7.152E-01	0.9555	8.894E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.057E-02	0.0408

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 2.000E+00 years
Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.025E-01	0.1369
H-3	2.754E-03	0.0037	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.754E-03	0.0037
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.898E-02	0.0254
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.383E-01	0.4520
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.833E-01	0.3784
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.948E-03	0.0026
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.081E-04	0.0011
Total	2.754E-03	0.0037	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.485E-01	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 2.400E+00 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	1.014E-01	0.1352	3.978E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.307E-04	0.0002
H-3	0.000E+00	0.0000	6.694E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.641E-16	0.0000
Pb-210	1.995E-04	0.0003	2.817E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.853E-02	0.0247
Ra-226	3.330E-01	0.4443	1.412E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.442E-03	0.0073
Ra-228	2.814E-01	0.3754	2.492E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.048E-03	0.0054
Th-230	4.625E-04	0.0006	4.351E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.539E-03	0.0021
U-234	1.474E-05	0.0000	1.760E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.913E-04	0.0011
Total	7.165E-01	0.9557	9.027E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.048E-02	0.0407

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 2.400E+00 years
Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.015E-01	0.1354
H-3	2.694E-03	0.0036	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.694E-03	0.0036
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.873E-02	0.0250
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.385E-01	0.4515
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.854E-01	0.3808
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.006E-03	0.0027
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.078E-04	0.0011
Total	2.694E-03	0.0036	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.496E-01	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	9.992E-02	0.1337	3.921E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.289E-04	0.0002
H-3	0.000E+00	0.0000	8.248E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.950E-18	0.0000
Pb-210	1.956E-04	0.0003	2.761E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.816E-02	0.0243
Ra-226	3.329E-01	0.4455	1.463E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.781E-03	0.0077
Ra-228	2.808E-01	0.3757	2.623E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.914E-03	0.0052
Th-230	5.489E-04	0.0007	4.350E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.540E-03	0.0021
U-234	1.474E-05	0.0000	1.759E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.909E-04	0.0011
Total	7.144E-01	0.9559	9.155E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.032E-02	0.0406

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years
Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.001E-01	0.1339
H-3	2.609E-03	0.0035	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.609E-03	0.0035
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.836E-02	0.0246
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.387E-01	0.4532
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.847E-01	0.3810
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.094E-03	0.0028
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.074E-04	0.0011
Total	2.609E-03	0.0035	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.473E-01	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+01 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	8.463E-02	0.1389	3.315E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.089E-04	0.0002
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	1.554E-04	0.0003	2.189E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.440E-02	0.0236
Ra-226	3.313E-01	0.5439	1.988E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.258E-03	0.0152
Ra-228	1.633E-01	0.2681	1.808E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.013E-03	0.0033
Th-230	1.554E-03	0.0026	4.333E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.557E-03	0.0026
U-234	1.475E-05	0.0000	1.749E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.860E-04	0.0013
Total	5.810E-01	0.9538	8.307E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.812E-02	0.0462

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+01 years
Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.474E-02	0.1391
H-3	2.282E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.282E-21	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.455E-02	0.0239
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.406E-01	0.5591
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.654E-01	0.2714
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.115E-03	0.0051
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.025E-04	0.0013
Total	2.282E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.092E-01	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	5.266E-02	0.1239	2.051E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.741E-05	0.0002
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	8.061E-05	0.0002	1.127E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.413E-03	0.0174
Ra-226	3.269E-01	0.7689	2.935E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.556E-02	0.0366
Ra-228	1.543E-02	0.0363	1.742E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.855E-04	0.0004
Th-230	4.386E-03	0.0103	4.286E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.649E-03	0.0039
U-234	1.513E-05	0.0000	1.718E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.723E-04	0.0018
Total	3.994E-01	0.9397	6.584E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.565E-02	0.0603

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years
Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.272E-02	0.1240
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.493E-03	0.0176
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.424E-01	0.8055
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.562E-02	0.0367
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.040E-03	0.0142
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.891E-04	0.0019
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.251E-01	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	9.999E-03	0.0278	3.820E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.256E-05	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	8.097E-06	0.0000	1.103E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.257E-04	0.0020
Ra-226	3.114E-01	0.8663	3.657E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.055E-02	0.0572
Ra-228	3.279E-06	0.0000	3.638E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.873E-08	0.0000
Th-230	1.385E-02	0.0385	4.125E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.154E-03	0.0060
U-234	2.026E-05	0.0001	1.615E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.259E-04	0.0020
Total	3.353E-01	0.9328	6.117E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.417E-02	0.0672

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years
Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.001E-02	0.0279
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.338E-04	0.0020
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.319E-01	0.9235
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.318E-06	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.601E-02	0.0445
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.478E-04	0.0021
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.595E-01	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	4.916E-12	0.0000	1.426E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.687E-15	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	1.153E-18	0.0000	1.055E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.941E-17	0.0000
Ra-226	1.546E-01	0.6200	1.451E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.194E-03	0.0329
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	8.094E-02	0.3246	2.278E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.933E-03	0.0198
U-234	3.554E-04	0.0014	6.615E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.130E-04	0.0013
Total	2.359E-01	0.9461	3.084E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.344E-02	0.0539

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years
Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.921E-12	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.056E-17	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.628E-01	0.6529
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.588E-02	0.3444
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.691E-04	0.0027
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.494E-01	1.0000

*Sum of all water independent and dependent pathways.

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

0 Parent (i)	Product (j)	Thread Fraction	DSR(jt) At Time in Years (mrem/yr)/(pCi/g) 0.000E+00	1.000E+00	2.000E+00	2.400E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	1.000E+03
Cs-137+D	Cs-137+D	1.000E+00	1.074E-01	1.049E-01	1.025E-01	1.015E-01	1.001E-01	8.474E-02	5.272E-02	1.001E-02	4.921E-12
0H-3	H-3	1.000E+00	1.001E-05	2.564E-03	2.754E-03	2.694E-03	2.609E-03	2.282E-21	0.000E+00	0.000E+00	0.000E+00
0Pb-210+D	Pb-210+D	1.000E+00	2.028E-02	1.962E-02	1.898E-02	1.873E-02	1.836E-02	1.455E-02	7.493E-03	7.338E-04	7.056E-17
0Ra-226+D	Ra-226+D	1.000E+00	3.373E-01	3.370E-01	3.368E-01	3.367E-01	3.366E-01	3.349E-01	3.303E-01	3.146E-01	1.558E-01
Ra-226+D	Pb-210+D	1.000E+00	3.168E-04	9.362E-04	1.535E-03	1.769E-03	2.113E-03	5.652E-03	1.209E-02	1.737E-02	7.010E-03
Ra-226+D	-DSR(j)		3.376E-01	3.380E-01	3.383E-01	3.385E-01	3.387E-01	3.406E-01	3.424E-01	3.319E-01	1.628E-01
0Ra-228+D	Ra-228+D	1.000E+00	1.757E-01	1.557E-01	1.380E-01	1.314E-01	1.223E-01	5.248E-02	4.685E-03	9.957E-07	0.000E+00
Ra-228+D	Th-228+D	1.000E+00	4.494E-02	1.094E-01	1.453E-01	1.540E-01	1.625E-01	1.129E-01	1.094E-02	2.322E-06	0.000E+00
Ra-228+D	-DSR(j)		2.206E-01	2.650E-01	2.833E-01	2.854E-01	2.847E-01	1.654E-01	1.562E-02	3.318E-06	0.000E+00
0Th-230	Th-230	1.000E+00	1.584E-03	1.583E-03	1.582E-03	1.582E-03	1.581E-03	1.575E-03	1.557E-03	1.496E-03	8.134E-04
Th-230	Ra-226+D	1.000E+00	7.306E-05	2.191E-04	3.649E-04	4.232E-04	5.106E-04	1.527E-03	4.389E-03	1.395E-02	8.153E-02
Th-230	Pb-210+D	1.000E+00	4.587E-08	3.180E-07	8.536E-07	1.140E-06	1.644E-06	1.361E-05	9.314E-05	5.620E-04	3.534E-03
Th-230	-DSR(j)		1.657E-03	1.802E-03	1.948E-03	2.006E-03	2.094E-03	3.115E-03	6.040E-03	1.601E-02	8.588E-02
0U-234	U-234	1.000E+00	8.095E-04	8.087E-04	8.080E-04	8.077E-04	8.073E-04	8.023E-04	7.881E-04	7.400E-04	2.988E-04
U-234	Th-230	1.000E+00	7.128E-09	2.137E-08	3.559E-08	4.127E-08	4.979E-08	1.486E-07	4.255E-07	1.332E-06	6.253E-06
U-234	Ra-226+D	1.000E+00	2.192E-10	1.534E-09	4.161E-09	5.578E-09	8.098E-09	7.216E-08	6.017E-07	6.280E-06	3.493E-04
U-234	Pb-210+D	1.000E+00	1.034E-13	1.539E-12	6.615E-12	1.019E-11	1.766E-11	4.410E-10	9.169E-09	2.038E-07	1.471E-05
U-234	-DSR(j)		8.095E-04	8.088E-04	8.081E-04	8.078E-04	8.074E-04	8.025E-04	7.891E-04	7.478E-04	6.691E-04

The DSR includes contributions from associated (half-life ó 180 days) daughters.

0

Single Radionuclide Soil Guidelines G(it) in pCi/g
Basic Radiation Dose Limit = 2.500E+01 mrem/yr

0Nuclide (i)	t= 0.000E+00	1.000E+00	2.000E+00	2.400E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	1.000E+03
Cs-137	2.327E+02	2.383E+02	2.440E+02	2.463E+02	2.499E+02	2.950E+02	4.742E+02	2.497E+03	5.080E+12
H-3	2.498E+06	9.749E+03	9.078E+03	9.280E+03	9.584E+03	*9.597E+15	*9.597E+15	*9.597E+15	*9.597E+15
Pb-210	1.233E+03	1.274E+03	1.317E+03	1.335E+03	1.362E+03	1.718E+03	3.336E+03	3.407E+04	*7.634E+13
Ra-226	7.406E+01	7.397E+01	7.389E+01	7.386E+01	7.382E+01	7.340E+01	7.301E+01	7.531E+01	1.536E+02
Ra-228	1.133E+02	9.433E+01	8.826E+01	8.758E+01	8.781E+01	1.512E+02	1.600E+03	7.535E+06	*2.726E+14
Th-230	1.509E+04	1.387E+04	1.283E+04	1.246E+04	1.194E+04	8.025E+03	4.139E+03	1.562E+03	2.911E+02
U-234	3.088E+04	3.091E+04	3.094E+04	3.095E+04	3.096E+04	3.115E+04	3.168E+04	3.343E+04	3.737E+04

*At specific activity limit

Summed Dose/Source Ratios DSR(it) in (mrem/yr)/(pCi/g)
and Single Radionuclide Soil Guidelines G(it) in pCi/g
at tmin = time of minimum single radionuclide soil guideline
and at tmax = time of maximum total dose = 2.384 ñ 0.005 years

0Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(itmin)	G(itmin) (pCi/g)	DSR(itmax)	G(itmax) (pCi/g)
Cs-137	1.000E+00	0.000E+00	1.074E-01	2.327E+02	1.015E-01	2.462E+02
H-3	1.000E+00	1.378 ñ 0.003	2.830E-03	8.834E+03	2.696E-03	9.272E+03
Pb-210	1.000E+00	0.000E+00	2.028E-02	1.233E+03	1.874E-02	1.334E+03
Ra-226	1.000E+00	29.03 ñ 0.06	3.424E-01	7.301E+01	3.385E-01	7.386E+01
Ra-228	1.000E+00	2.592 ñ 0.005	2.857E-01	8.751E+01	2.854E-01	8.759E+01
Th-230	1.000E+00	1.000E+03	8.588E-02	2.911E+02	2.004E-03	1.248E+04
U-234	1.000E+00	0.000E+00	8.095E-04	3.088E+04	8.078E-04	3.095E+04

Individual Nuclide Dose Summed Over All Pathways
Parent Nuclide and Branch Fraction Indicated

0Nuclide (j)	Parent (i)	THF(i)	DOSE(jt) mrem/yr t= 0.000E+00	1.000E+00	2.000E+00	2.400E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	1.000E+03
Cs-137	Cs-137	1.000E+00	1.074E-01	1.049E-01	1.025E-01	1.015E-01	1.001E-01	8.474E-02	5.272E-02	1.001E-02	4.921E-12
0H-3	H-3	1.000E+00	1.001E-05	2.564E-03	2.754E-03	2.694E-03	2.609E-03	2.282E-21	0.000E+00	0.000E+00	0.000E+00
0Pb-210	Pb-210	1.000E+00	2.028E-02	1.962E-02	1.898E-02	1.873E-02	1.836E-02	1.455E-02	7.493E-03	7.338E-04	7.056E-17
Pb-210	Ra-226	1.000E+00	3.168E-04	9.362E-04	1.535E-03	1.769E-03	2.113E-03	5.652E-03	1.209E-02	1.737E-02	7.010E-03
Pb-210	Th-230	1.000E+00	4.587E-08	3.180E-07	8.536E-07	1.140E-06	1.644E-06	1.361E-05	9.314E-05	5.620E-04	3.534E-03
Pb-210	U-234	1.000E+00	1.034E-13	1.539E-12	6.615E-12	1.019E-11	1.766E-11	4.410E-10	9.169E-09	2.038E-07	1.471E-05
Pb-210	-DOSE(j)		2.060E-02	2.055E-02	2.051E-02	2.050E-02	2.047E-02	2.022E-02	1.968E-02	1.867E-02	1.056E-02
0Ra-226	Ra-226	1.000E+00	3.373E-01	3.370E-01	3.368E-01	3.367E-01	3.366E-01	3.349E-01	3.303E-01	3.146E-01	1.558E-01
Ra-226	Th-230	1.000E+00	7.306E-05	2.191E-04	3.649E-04	4.232E-04	5.106E-04	1.527E-03	4.389E-03	1.395E-02	8.153E-02
Ra-226	U-234	1.000E+00	2.192E-10	1.534E-09	4.161E-09	5.578E-09	8.098E-09	7.216E-08	6.017E-07	6.280E-06	3.493E-04
Ra-226	-DOSE(j)		3.373E-01	3.373E-01	3.372E-01	3.371E-01	3.371E-01	3.365E-01	3.347E-01	3.285E-01	2.377E-01
0Ra-228	Ra-228	1.000E+00	1.757E-01	1.557E-01	1.380E-01	1.314E-01	1.223E-01	5.248E-02	4.685E-03	9.957E-07	0.000E+00
0Th-228	Ra-228	1.000E+00	4.494E-02	1.094E-01	1.453E-01	1.540E-01	1.625E-01	1.129E-01	1.094E-02	2.322E-06	0.000E+00
0Th-230	Th-230	1.000E+00	1.584E-03	1.583E-03	1.582E-03	1.582E-03	1.581E-03	1.575E-03	1.557E-03	1.496E-03	8.134E-04
Th-230	U-234	1.000E+00	7.128E-09	2.137E-08	3.559E-08	4.127E-08	4.979E-08	1.486E-07	4.255E-07	1.332E-06	6.253E-06
Th-230	-DOSE(j)		1.584E-03	1.583E-03	1.582E-03	1.582E-03	1.581E-03	1.575E-03	1.558E-03	1.498E-03	8.197E-04
0U-234	U-234	1.000E+00	8.095E-04	8.087E-04	8.080E-04	8.077E-04	8.073E-04	8.023E-04	7.881E-04	7.400E-04	2.988E-04

THF(i) is the thread fraction of the parent nuclide.

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

0Nuclide (j)	Parent (i)	THF(i)	S(jt) pCi/g t= 0.000E+00	1.000E+00	2.000E+00	2.400E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	1.000E+03
Cs-137	Cs-137	1.000E+00	1.000E+00	9.767E-01	9.539E-01	9.449E-01	9.317E-01	7.898E-01	4.927E-01	9.444E-02	5.642E-11
0H-3	H-3	1.000E+00	1.000E+00	6.576E-04	4.324E-07	2.307E-08	2.843E-10	1.511E-32	0.000E+00	0.000E+00	0.000E+00
0Pb-210	Pb-210	1.000E+00	1.000E+00	9.677E-01	9.365E-01	9.243E-01	9.063E-01	7.205E-01	3.740E-01	3.768E-02	5.767E-15
Pb-210	Ra-226	1.000E+00	0.000E+00	3.057E-02	6.014E-02	7.169E-02	8.874E-02	2.643E-01	5.880E-01	8.772E-01	5.638E-01
Pb-210	Th-230	1.000E+00	0.000E+00	6.658E-06	2.634E-05	3.776E-05	5.861E-05	6.039E-04	4.445E-03	2.820E-02	2.841E-01
Pb-210	U-234	1.000E+00	0.000E+00	2.003E-11	1.589E-10	2.737E-10	5.318E-10	1.859E-08	4.299E-07	1.017E-05	1.182E-03
Pb-210	-S(j):		1.000E+00	9.983E-01	9.967E-01	9.961E-01	9.951E-01	9.853E-01	9.664E-01	9.431E-01	8.490E-01
0Ra-226	Ra-226	1.000E+00	1.000E+00	9.995E-01	9.989E-01	9.987E-01	9.984E-01	9.947E-01	9.840E-01	9.478E-01	5.849E-01
Ra-226	Th-230	1.000E+00	0.000E+00	4.331E-04	8.658E-04	1.039E-03	1.298E-03	4.317E-03	1.286E-02	4.182E-02	3.059E-01
Ra-226	U-234	1.000E+00	0.000E+00	1.949E-09	7.793E-09	1.122E-08	1.753E-08	1.942E-07	1.734E-06	1.873E-05	1.310E-03
Ra-226	-S(j):		1.000E+00	9.999E-01	9.998E-01	9.998E-01	9.997E-01	9.990E-01	9.969E-01	9.896E-01	8.922E-01
0Ra-228	Ra-228	1.000E+00	1.000E+00	8.863E-01	7.856E-01	7.486E-01	6.963E-01	2.992E-01	2.680E-02	5.757E-06	0.000E+00
0Th-228	Ra-228	1.000E+00	0.000E+00	2.853E-01	4.514E-01	4.939E-01	5.383E-01	4.086E-01	4.014E-02	8.631E-06	0.000E+00
0Th-230	Th-230	1.000E+00	1.000E+00	9.998E-01	9.997E-01	9.996E-01	9.995E-01	9.983E-01	9.949E-01	9.831E-01	8.431E-01
Th-230	U-234	1.000E+00	0.000E+00	8.999E-06	1.799E-05	2.159E-05	2.698E-05	8.972E-05	2.674E-04	8.707E-04	6.478E-03
Th-230	-S(j):		1.000E+00	9.998E-01	9.997E-01	9.996E-01	9.995E-01	9.984E-01	9.952E-01	9.840E-01	8.496E-01
0U-234	U-234	1.000E+00	1.000E+00	9.995E-01	9.990E-01	9.988E-01	9.985E-01	9.951E-01	9.852E-01	9.516E-01	6.088E-01

THF(i) is the thread fraction of the parent nuclide.
0RESCALC.EXE execution time = 0.50 seconds

Intrisk : Residual Dose and Risk Assessment for Pit C Under Recreational Receptor Scenari
File : C:\USERS\MRAHMAN\DOCUMENTS\OLD RESRAD FILES\PIT C-RECREATIONAL RECEPTOR.RAD

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Part III: Intake Quantities and Health Risk Factors

Cancer Risk Slope Factors 2
Risk Slope and ETFG for the Ground Pathway 4
Amount of Intake Quantities and Excess Cancer Risks
Time= 0.000E+00 5
Time= 1.000E+00 8
Time= 2.000E+00 11
Time= 2.400E+00 14
Time= 3.000E+00 17
Time= 1.000E+01 20
Time= 3.000E+01 23
Time= 1.000E+02 26
Time= 1.000E+03 29

Cancer Risk Slope Factors Summary Table
Risk Library: FGR 13 Morbidity

0

Menu	Parameter	Current Value	Base Case*	Parameter Name
Sf-1	Ground external radiation slope factors, 1/yr per (pCi/g):			
Sf-1	Cs-137+D	2.55E-06	5.32E-10	SLPF(1,1)
Sf-1	H-3	0.00E+00	0.00E+00	SLPF(2,1)
Sf-1	Pb-210+D	4.21E-09	1.41E-09	SLPF(3,1)
Sf-1	Ra-226+D	8.49E-06	2.29E-08	SLPF(4,1)
Sf-1	Ra-228+D	4.53E-06	0.00E+00	SLPF(5,1)
Sf-1	Th-228+D	7.76E-06	5.59E-09	SLPF(6,1)
Sf-1	Th-230	8.19E-10	8.19E-10	SLPF(7,1)
Sf-1	U-234	2.52E-10	2.52E-10	SLPF(8,1)
Sf-2	Inhalation, slope factors, 1/(pCi):			
Sf-2	Cs-137+D	1.12E-10	1.12E-10	SLPF(1,2)
Sf-2	H-3	8.51E-13	8.51E-13	SLPF(2,2)
Sf-2	Pb-210+D	3.08E-08	1.58E-08	SLPF(3,2)
Sf-2	Ra-226+D	2.83E-08	2.82E-08	SLPF(4,2)
Sf-2	Ra-228+D	4.37E-08	4.37E-08	SLPF(5,2)
Sf-2	Th-228+D	1.44E-07	1.32E-07	SLPF(6,2)
Sf-2	Th-230	3.40E-08	3.40E-08	SLPF(7,2)
Sf-2	U-234	2.78E-08	2.78E-08	SLPF(8,2)
Sf-3	Food ingestion, slope factors, 1/(pCi):			
Sf-3	Cs-137+D	3.74E-11	3.74E-11	SLPF(1,3)
Sf-3	H-3	1.44E-13	1.44E-13	SLPF(2,3)
Sf-3	Pb-210+D	3.44E-09	1.18E-09	SLPF(3,3)
Sf-3	Ra-226+D	5.15E-10	5.14E-10	SLPF(4,3)
Sf-3	Ra-228+D	1.43E-09	1.43E-09	SLPF(5,3)
Sf-3	Th-228+D	4.22E-10	1.48E-10	SLPF(6,3)
Sf-3	Th-230	1.19E-10	1.19E-10	SLPF(7,3)
Sf-3	U-234	9.55E-11	9.55E-11	SLPF(8,3)
Sf-3	Water ingestion, slope factors, 1/(pCi):			
Sf-3	Cs-137+D	3.04E-11	3.04E-11	SLPF(1,4)
Sf-3	H-3	1.12E-13	1.12E-13	SLPF(2,4)
Sf-3	Pb-210+D	2.66E-09	8.81E-10	SLPF(3,4)
Sf-3	Ra-226+D	3.86E-10	3.85E-10	SLPF(4,4)
Sf-3	Ra-228+D	1.04E-09	1.04E-09	SLPF(5,4)
Sf-3	Th-228+D	2.99E-10	1.07E-10	SLPF(6,4)
Sf-3	Th-230	9.10E-11	9.10E-11	SLPF(7,4)
Sf-3	U-234	7.07E-11	7.07E-11	SLPF(8,4)
Sf-3	Soil ingestion, slope factors, 1/(pCi):			

Sf-3	Cs-137+D	3.74E-11	3.74E-11	SLPF(1,5)
Sf-3	H-3	1.44E-13	1.44E-13	SLPF(2,5)
Sf-3	Pb-210+D	3.44E-09	1.18E-09	SLPF(3,5)
Sf-3	Ra-226+D	5.15E-10	5.14E-10	SLPF(4,5)
Sf-3	Ra-228+D	1.43E-09	1.43E-09	SLPF(5,5)
Sf-3	Th-228+D	4.22E-10	1.48E-10	SLPF(6,5)
Sf-3	Th-230	1.19E-10	1.19E-10	SLPF(7,5)
Sf-3	U-234	9.55E-11	9.55E-11	SLPF(8,5)

Cancer Risk Slope Factors Summary Table (continued)
Risk Library: FGR 13 Morbidity

Menu	Parameter	Current Value	Base Case*	Parameter Name
Sf-Rn	Radon Inhalation slope factors, 1/(pCi):			
Sf-Rn	Rn-222	1.80E-12	1.80E-12	SLPFRN(1,1)
Sf-Rn	Po-218	3.70E-12	3.70E-12	SLPFRN(1,2)
Sf-Rn	Pb-214	6.20E-12	6.20E-12	SLPFRN(1,3)
Sf-Rn	Bi-214	1.50E-11	1.50E-11	SLPFRN(1,4)
Sf-Rn	Rn-220	1.90E-13	1.90E-13	SLPFRN(2,1)
Sf-Rn	Po-216	3.00E-15	3.00E-15	SLPFRN(2,2)
Sf-Rn	Pb-212	3.90E-11	3.90E-11	SLPFRN(2,3)
Sf-Rn	Bi-212	3.70E-11	3.70E-11	SLPFRN(2,4)
Sf-Rn	Radon K factors, (mrem/WLM):			
Sf-Rn	Rn-222 Indoor	7.60E+02	7.60E+02	KFACTR(1,1)
Sf-Rn	Rn-222 Outdoor	5.70E+02	5.70E+02	KFACTR(1,2)
Sf-Rn	Rn-220 Indoor	1.50E+02	1.50E+02	KFACTR(2,1)
Sf-Rn	Rn-220 Outdoor	2.50E+02	2.50E+02	KFACTR(2,2)

*Base Case means Default.Lib w/o Associate Nuclide contributions.

Risk Slope and Environmental Transport Factors for the Ground Pathway

0Nuclide (i)	Slope(i)*	ETFG(i,t) At Time in Years (dimensionless)								
	t=	0.000E+00	1.000E+00	2.000E+00	2.400E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	1.000E+03
Ac-228	4.530E-06	3.052E-02	3.051E-02	3.051E-02	3.051E-02	3.050E-02	3.047E-02	3.038E-02	3.006E-02	2.436E-02
At-218	3.570E-09	3.707E-02	3.707E-02	3.707E-02	3.707E-02	3.707E-02	3.707E-02	3.708E-02	3.710E-02	3.709E-02
Ba-137m	2.690E-06	3.182E-02	3.182E-02	3.181E-02	3.181E-02	3.181E-02	3.178E-02	3.170E-02	3.140E-02	2.585E-02
Bi-210	2.760E-09	3.492E-02	3.492E-02	3.492E-02	3.492E-02	3.491E-02	3.490E-02	3.485E-02	3.466E-02	3.053E-02
Bi-212	8.870E-07	3.077E-02	3.077E-02	3.076E-02	3.076E-02	3.076E-02	3.073E-02	3.064E-02	3.032E-02	2.457E-02
Bi-214	7.480E-06	2.934E-02	2.933E-02	2.933E-02	2.933E-02	2.932E-02	2.929E-02	2.919E-02	2.885E-02	2.301E-02
Cs-137	5.320E-10	3.583E-02	3.583E-02	3.583E-02	3.583E-02	3.583E-02	3.581E-02	3.578E-02	3.565E-02	3.238E-02
H-3	0.000E+00	3.840E-02	3.840E-02	3.840E-02	3.840E-02	3.840E-02	3.840E-02	3.840E-02	3.840E-02	3.840E-02
Pb-210	1.410E-09	3.752E-02	3.752E-02	3.752E-02	3.752E-02	3.752E-02	3.752E-02	3.752E-02	3.753E-02	3.756E-02
Pb-212	5.090E-07	3.457E-02	3.457E-02	3.457E-02	3.457E-02	3.456E-02	3.455E-02	3.449E-02	3.430E-02	2.990E-02
Pb-214	9.820E-07	3.338E-02	3.337E-02	3.337E-02	3.337E-02	3.337E-02	3.334E-02	3.327E-02	3.303E-02	2.797E-02
Po-210	3.950E-11	3.128E-02	3.128E-02	3.128E-02	3.127E-02	3.127E-02	3.124E-02	3.116E-02	3.084E-02	2.516E-02
Po-212	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Po-214	3.860E-10	3.110E-02	3.109E-02	3.109E-02	3.109E-02	3.108E-02	3.105E-02	3.097E-02	3.066E-02	2.503E-02
Po-216	7.870E-11	3.112E-02	3.111E-02	3.111E-02	3.111E-02	3.111E-02	3.108E-02	3.099E-02	3.068E-02	2.502E-02
Po-218	4.260E-11	3.110E-02	3.110E-02	3.110E-02	3.109E-02	3.109E-02	3.106E-02	3.098E-02	3.066E-02	2.499E-02
Ra-224	3.720E-08	3.434E-02	3.434E-02	3.433E-02	3.433E-02	3.433E-02	3.431E-02	3.425E-02	3.404E-02	2.941E-02
Ra-226	2.290E-08	3.476E-02	3.476E-02	3.476E-02	3.475E-02	3.475E-02	3.474E-02	3.468E-02	3.450E-02	3.021E-02
Ra-228	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Rn-220	1.700E-09	3.207E-02	3.207E-02	3.207E-02	3.207E-02	3.206E-02	3.204E-02	3.195E-02	3.166E-02	2.617E-02
Rn-222	1.740E-09	3.220E-02	3.220E-02	3.219E-02	3.219E-02	3.219E-02	3.216E-02	3.208E-02	3.180E-02	2.635E-02
Th-228	5.590E-09	3.563E-02	3.563E-02	3.563E-02	3.562E-02	3.562E-02	3.561E-02	3.557E-02	3.544E-02	3.193E-02
Th-230	8.190E-10	3.630E-02	3.630E-02	3.630E-02	3.630E-02	3.630E-02	3.629E-02	3.627E-02	3.620E-02	3.380E-02
Tl-208	1.760E-05	2.736E-02	2.735E-02	2.735E-02	2.734E-02	2.734E-02	2.731E-02	2.721E-02	2.685E-02	2.104E-02
Tl-210	0.000E+00	3.840E-02	3.840E-02	3.840E-02	3.840E-02	3.840E-02	3.840E-02	3.840E-02	3.840E-02	3.840E-02
U-234	2.520E-10	3.673E-02	3.673E-02	3.673E-02	3.673E-02	3.673E-02	3.673E-02	3.671E-02	3.666E-02	3.478E-02

* - Units are 1/yr per (pCi/g) at infinite depth and area. Multiplication by ETFG(i,t) converts to site conditions.

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 0.000E+00 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Cs-137	1.337E-05	0.000E+00	0.000E+00	0.000E+00	2.803E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.803E+00
H-3	3.327E+01	0.000E+00	0.000E+00	0.000E+00	2.803E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.803E+00
Pb-210	1.337E-05	0.000E+00	0.000E+00	0.000E+00	2.803E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.803E+00
Ra-226	1.337E-05	0.000E+00	0.000E+00	0.000E+00	2.803E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.803E+00
Ra-228	1.337E-05	0.000E+00	0.000E+00	0.000E+00	2.803E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.803E+00
Th-228	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	1.337E-05	0.000E+00	0.000E+00	0.000E+00	2.803E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.803E+00
U-234	1.337E-05	0.000E+00	0.000E+00	0.000E+00	2.803E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.803E+00

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 0.000E+00 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 0.000E+00 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	4.050E-07	0.1658	7.486E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.242E-10	0.0002
H-3	0.000E+00	0.0000	1.415E-10	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.018E-12	0.0000
Pb-210	7.526E-10	0.0003	2.056E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.826E-08	0.0198
Ra-226	1.265E-06	0.5182	1.890E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.215E-09	0.0030
Ra-228	6.912E-07	0.2831	2.924E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.008E-08	0.0082
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	1.486E-10	0.0001	2.273E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.668E-09	0.0007
U-234	4.628E-11	0.0000	1.858E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.339E-09	0.0005
Total	2.362E-06	0.9675	1.526E-10	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.909E-08	0.0324

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 0.000E+00 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All Pathways** risk	All Pathways** fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.055E-07	0.1661
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.436E-10	0.0001
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.901E-08	0.0201
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.273E-06	0.5212
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.113E-07	0.2913
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.819E-09	0.0007
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.387E-09	0.0006
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.442E-06	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

0

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 0.000E+00 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 0.000E+00 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground risk	Ground fract.	Inhalation risk	Inhalation fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	Soil risk	Soil fract.
Cs-137	4.050E-07	0.1658	7.486E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.242E-10	0.0002
H-3	0.000E+00	0.0000	1.415E-10	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.018E-12	0.0000
Pb-210	7.526E-10	0.0003	2.056E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.826E-08	0.0198
Ra-226	1.265E-06	0.5182	1.890E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.215E-09	0.0030
Ra-228	6.912E-07	0.2831	2.924E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.008E-08	0.0082
Th-230	1.486E-10	0.0001	2.273E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.668E-09	0.0007
U-234	4.628E-11	0.0000	1.858E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.339E-09	0.0005
Total	2.362E-06	0.9675	1.526E-10	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.909E-08	0.0324

0

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 0.000E+00 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All pathways risk	All pathways fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.055E-07	0.1661
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.436E-10	0.0001
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.901E-08	0.0201
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.273E-06	0.5212
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.113E-07	0.2913
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.819E-09	0.0007
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.387E-09	0.0006
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.442E-06	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 1.000E+00 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Cs-137	1.305E-05	0.000E+00	0.000E+00	0.000E+00	2.737E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.737E+00
H-3	2.187E-02	0.000E+00	0.000E+00	0.000E+00	1.843E-03	7.270E+03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.270E+03
Pb-210	1.334E-05	0.000E+00	0.000E+00	0.000E+00	2.797E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.797E+00
Ra-226	1.336E-05	0.000E+00	0.000E+00	0.000E+00	2.802E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.802E+00
Ra-228	1.184E-05	0.000E+00	0.000E+00	0.000E+00	2.484E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.484E+00
Th-228	3.812E-06	0.000E+00	0.000E+00	0.000E+00	7.994E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.994E-01
Th-230	1.336E-05	0.000E+00	0.000E+00	0.000E+00	2.802E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.802E+00
U-234	1.336E-05	0.000E+00	0.000E+00	0.000E+00	2.801E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.801E+00

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 1.000E+00 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+00 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	3.955E-07	0.1481	7.309E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.118E-10	0.0002
H-3	0.000E+00	0.0000	9.304E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.327E-15	0.0000
Pb-210	7.513E-10	0.0003	2.051E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.816E-08	0.0180
Ra-226	1.265E-06	0.4739	1.889E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.211E-09	0.0027
Ra-228	6.126E-07	0.2295	2.591E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.779E-08	0.0067
Th-228	3.129E-07	0.1172	2.745E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.688E-09	0.0006
Th-230	1.486E-10	0.0001	2.271E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.667E-09	0.0006
U-234	4.626E-11	0.0000	1.857E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.337E-09	0.0005
Total	2.587E-06	0.9691	1.350E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.837E-08	0.0294

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+00 years

Water Dependent Pathways

Radio-	Water		Fish		Plant		Meat		Milk		All Pathways**	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.960E-07	0.1483
H-3	4.071E-09	0.0015	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.071E-09	0.0015
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.891E-08	0.0183
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.272E-06	0.4766
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.304E-07	0.2361
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.146E-07	0.1179
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.818E-09	0.0007
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.385E-09	0.0005
Total	4.071E-09	0.0015	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.669E-06	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

0

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 1.000E+00 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+00 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground risk	Ground fract.	Inhalation risk	Inhalation fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	Soil risk	Soil fract.
Cs-137	3.955E-07	0.1481	7.309E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.118E-10	0.0002
H-3	0.000E+00	0.0000	9.304E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.327E-15	0.0000
Pb-210	7.283E-10	0.0003	1.989E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.668E-08	0.0175
Ra-226	1.265E-06	0.4737	1.951E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.683E-09	0.0033
Ra-228	9.255E-07	0.3467	5.336E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.948E-08	0.0073
Th-230	6.965E-10	0.0003	2.272E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.670E-09	0.0006
U-234	4.626E-11	0.0000	1.857E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.337E-09	0.0005
Total	2.587E-06	0.9691	1.350E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.837E-08	0.0294

0

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+00 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All pathways risk	All pathways fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.960E-07	0.1483
H-3	4.071E-09	0.0015	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.071E-09	0.0015
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.741E-08	0.0178
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.273E-06	0.4770
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.450E-07	0.3540
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.369E-09	0.0009
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.385E-09	0.0005
Total	4.071E-09	0.0015	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.669E-06	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 2.000E+00 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Cs-137	1.274E-05	0.000E+00	0.000E+00	0.000E+00	2.672E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.672E+00
H-3	1.437E-05	0.000E+00	0.000E+00	0.000E+00	1.211E-06	4.422E+04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.422E+04
Pb-210	1.331E-05	0.000E+00	0.000E+00	0.000E+00	2.792E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.792E+00
Ra-226	1.336E-05	0.000E+00	0.000E+00	0.000E+00	2.800E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.800E+00
Ra-228	1.049E-05	0.000E+00	0.000E+00	0.000E+00	2.200E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.200E+00
Th-228	6.030E-06	0.000E+00	0.000E+00	0.000E+00	1.264E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.264E+00
Th-230	1.335E-05	0.000E+00	0.000E+00	0.000E+00	2.800E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.800E+00
U-234	1.334E-05	0.000E+00	0.000E+00	0.000E+00	2.798E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.798E+00

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 2.000E+00 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 2.000E+00 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	3.862E-07	0.1383	7.136E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.996E-10	0.0002
H-3	0.000E+00	0.0000	6.115E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.720E-19	0.0000
Pb-210	7.501E-10	0.0003	2.047E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.806E-08	0.0172
Ra-226	1.265E-06	0.4530	1.888E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.207E-09	0.0026
Ra-228	5.429E-07	0.1945	2.296E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.576E-08	0.0056
Th-228	4.951E-07	0.1773	4.342E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.670E-09	0.0010
Th-230	1.486E-10	0.0001	2.270E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.666E-09	0.0006
U-234	4.624E-11	0.0000	1.855E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.336E-09	0.0005
Total	2.690E-06	0.9635	1.471E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.720E-08	0.0277

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 2.000E+00 years

Water Dependent Pathways

Radio-	Water		Fish		Plant		Meat		Milk		All Pathways**	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.867E-07	0.1385
H-3	2.477E-08	0.0089	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.477E-08	0.0089
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.881E-08	0.0175
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.272E-06	0.4556
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.586E-07	0.2001
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.978E-07	0.1783
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.817E-09	0.0007
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.384E-09	0.0005
Total	2.477E-08	0.0089	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.792E-06	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

0

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 2.000E+00 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 2.000E+00 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground risk	Ground fract.	Inhalation risk	Inhalation fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	Soil risk	Soil fract.
Cs-137	3.862E-07	0.1383	7.136E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.996E-10	0.0002
H-3	0.000E+00	0.0000	6.115E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.720E-19	0.0000
Pb-210	7.048E-10	0.0003	1.924E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.516E-08	0.0162
Ra-226	1.264E-06	0.4526	2.010E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.010E-08	0.0036
Ra-228	1.038E-06	0.3718	6.638E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.844E-08	0.0066
Th-230	1.244E-09	0.0004	2.272E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.674E-09	0.0006
U-234	4.625E-11	0.0000	1.855E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.336E-09	0.0005
Total	2.690E-06	0.9635	1.471E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.720E-08	0.0277

0

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 2.000E+00 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All pathways risk	All pathways fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.867E-07	0.1385
H-3	2.477E-08	0.0089	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.477E-08	0.0089
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.586E-08	0.0164
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.274E-06	0.4563
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.056E-06	0.3784
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.920E-09	0.0010
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.384E-09	0.0005
Total	2.477E-08	0.0089	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.792E-06	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 2.400E+00 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Cs-137	1.262E-05	0.000E+00	0.000E+00	0.000E+00	2.646E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.646E+00
H-3	7.667E-07	0.000E+00	0.000E+00	0.000E+00	6.461E-08	4.327E+04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.327E+04
Pb-210	1.330E-05	0.000E+00	0.000E+00	0.000E+00	2.789E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.789E+00
Ra-226	1.335E-05	0.000E+00	0.000E+00	0.000E+00	2.800E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.800E+00
Ra-228	9.998E-06	0.000E+00	0.000E+00	0.000E+00	2.096E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.096E+00
Th-228	6.597E-06	0.000E+00	0.000E+00	0.000E+00	1.383E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.383E+00
Th-230	1.335E-05	0.000E+00	0.000E+00	0.000E+00	2.799E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.799E+00
U-234	1.334E-05	0.000E+00	0.000E+00	0.000E+00	2.797E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.797E+00

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 2.400E+00 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 2.400E+00 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	3.825E-07	0.1362	7.067E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.949E-10	0.0002
H-3	0.000E+00	0.0000	3.262E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.652E-20	0.0000
Pb-210	7.496E-10	0.0003	2.046E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.802E-08	0.0171
Ra-226	1.265E-06	0.4504	1.887E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.206E-09	0.0026
Ra-228	5.173E-07	0.1842	2.187E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.502E-08	0.0053
Th-228	5.417E-07	0.1929	4.750E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.921E-09	0.0010
Th-230	1.486E-10	0.0001	2.270E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.666E-09	0.0006
U-234	4.623E-11	0.0000	1.854E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.336E-09	0.0005
Total	2.707E-06	0.9641	1.500E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.666E-08	0.0273

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 2.400E+00 years

Water Dependent Pathways

Radio-	Water		Fish		Plant		Meat		Milk		All Pathways**	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.830E-07	0.1364
H-3	2.423E-08	0.0086	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.423E-08	0.0086
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.877E-08	0.0174
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.272E-06	0.4529
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.323E-07	0.1896
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.446E-07	0.1939
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.817E-09	0.0006
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.384E-09	0.0005
Total	2.423E-08	0.0086	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.808E-06	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

0

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 2.400E+00 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 2.400E+00 years

0 Water Independent Pathways (Inhalation excludes radon)

0 Radio-Nuclide	Ground risk	Ground fract.	Inhalation risk	Inhalation fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	Soil risk	Soil fract.
Cs-137	3.825E-07	0.1362	7.067E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.949E-10	0.0002
H-3	0.000E+00	0.0000	3.262E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.652E-20	0.0000
Pb-210	6.956E-10	0.0002	1.898E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.456E-08	0.0159
Ra-226	1.263E-06	0.4499	2.033E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.065E-08	0.0038
Ra-228	1.059E-06	0.3771	6.937E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.794E-08	0.0064
Th-230	1.463E-09	0.0005	2.272E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.675E-09	0.0006
U-234	4.624E-11	0.0000	1.854E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.336E-09	0.0005
Total	2.707E-06	0.9641	1.500E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.666E-08	0.0273

0

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 2.400E+00 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All pathways risk	All pathways fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.830E-07	0.1364
H-3	2.423E-08	0.0086	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.423E-08	0.0086
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.526E-08	0.0161
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.274E-06	0.4537
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.077E-06	0.3835
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.140E-09	0.0011
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.384E-09	0.0005
Total	2.423E-08	0.0086	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.808E-06	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 3.000E+00 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Cs-137	1.244E-05	0.000E+00	0.000E+00	0.000E+00	2.608E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.608E+00
H-3	9.447E-09	0.000E+00	0.000E+00	0.000E+00	7.961E-10	4.185E+04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.185E+04
Pb-210	1.329E-05	0.000E+00	0.000E+00	0.000E+00	2.786E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.786E+00
Ra-226	1.335E-05	0.000E+00	0.000E+00	0.000E+00	2.799E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.799E+00
Ra-228	9.298E-06	0.000E+00	0.000E+00	0.000E+00	1.950E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.950E+00
Th-228	7.188E-06	0.000E+00	0.000E+00	0.000E+00	1.507E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.507E+00
Th-230	1.335E-05	0.000E+00	0.000E+00	0.000E+00	2.798E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.798E+00
U-234	1.333E-05	0.000E+00	0.000E+00	0.000E+00	2.796E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.796E+00

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 3.000E+00 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+00 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	3.771E-07	0.1341	6.966E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.878E-10	0.0002
H-3	0.000E+00	0.0000	4.020E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.732E-22	0.0000
Pb-210	7.488E-10	0.0003	2.043E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.796E-08	0.0170
Ra-226	1.264E-06	0.4495	1.887E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.204E-09	0.0026
Ra-228	4.811E-07	0.1710	2.034E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.397E-08	0.0050
Th-228	5.903E-07	0.2098	5.176E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.183E-09	0.0011
Th-230	1.486E-10	0.0001	2.269E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.665E-09	0.0006
U-234	4.621E-11	0.0000	1.853E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.335E-09	0.0005
Total	2.714E-06	0.9647	1.527E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.581E-08	0.0269

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+00 years

Water Dependent Pathways

Radio-	Water		Fish		Plant		Meat		Milk		All Pathways**	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.776E-07	0.1342
H-3	2.344E-08	0.0083	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.344E-08	0.0083
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.871E-08	0.0173
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.272E-06	0.4520
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.951E-07	0.1760
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.935E-07	0.2110
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.816E-09	0.0006
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.383E-09	0.0005
Total	2.344E-08	0.0083	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.813E-06	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

0

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 3.000E+00 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+00 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	3.771E-07	0.1341	6.966E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.878E-10	0.0002
H-3	0.000E+00	0.0000	4.020E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.732E-22	0.0000
Pb-210	6.820E-10	0.0002	1.861E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.368E-08	0.0155
Ra-226	1.263E-06	0.4489	2.067E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.147E-08	0.0041
Ra-228	1.071E-06	0.3809	7.210E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.715E-08	0.0061
Th-230	1.791E-09	0.0006	2.271E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.677E-09	0.0006
U-234	4.624E-11	0.0000	1.853E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.335E-09	0.0005
Total	2.714E-06	0.9647	1.527E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.581E-08	0.0269

0

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+00 years

Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.776E-07	0.1342
H-3	2.344E-08	0.0083	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.344E-08	0.0083
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.437E-08	0.0158
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.274E-06	0.4530
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.089E-06	0.3870
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.470E-09	0.0012
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.383E-09	0.0005
Total	2.344E-08	0.0083	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.813E-06	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Intrisk : Residual Dose and Risk Assessment for Pit C Under Recreational Receptor Scenari
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Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 1.000E+01 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Cs-137	1.052E-05	0.000E+00	0.000E+00	0.000E+00	2.205E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.205E+00
H-3	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.614E-13	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.614E-13
Pb-210	1.312E-05	0.000E+00	0.000E+00	0.000E+00	2.751E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.751E+00
Ra-226	1.330E-05	0.000E+00	0.000E+00	0.000E+00	2.789E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.789E+00
Ra-228	3.984E-06	0.000E+00	0.000E+00	0.000E+00	8.355E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.355E-01
Th-228	5.440E-06	0.000E+00	0.000E+00	0.000E+00	1.141E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.141E+00
Th-230	1.329E-05	0.000E+00	0.000E+00	0.000E+00	2.787E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.787E+00
U-234	1.325E-05	0.000E+00	0.000E+00	0.000E+00	2.778E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.778E+00

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 1.000E+01 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+01 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	3.194E-07	0.1387	5.889E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.124E-10	0.0002
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	7.412E-10	0.0003	2.017E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.736E-08	0.0206
Ra-226	1.262E-06	0.5481	1.880E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.178E-09	0.0031
Ra-228	2.065E-07	0.0897	8.716E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.986E-09	0.0026
Th-228	4.475E-07	0.1943	3.918E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.409E-09	0.0010
Th-230	1.484E-10	0.0001	2.260E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.659E-09	0.0007
U-234	4.605E-11	0.0000	1.842E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.327E-09	0.0006
Total	2.237E-06	0.9712	1.279E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.633E-08	0.0288

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+01 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All Pathways** risk	All Pathways** fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.198E-07	0.1389
H-3	1.464E-25	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.464E-25	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.810E-08	0.0209
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.269E-06	0.5512
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.125E-07	0.0923
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.499E-07	0.1954
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.809E-09	0.0008
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.374E-09	0.0006
Total	1.464E-25	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.303E-06	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

0

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 1.000E+01 years

0

Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+01 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground risk	Ground fract.	Inhalation risk	Inhalation fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	Soil risk	Soil fract.
Cs-137	3.194E-07	0.1387	5.889E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.124E-10	0.0002
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	5.420E-10	0.0002	1.475E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.463E-08	0.0150
Ra-226	1.257E-06	0.5458	2.413E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.985E-08	0.0086
Ra-228	6.541E-07	0.2840	4.789E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.395E-09	0.0036
Th-230	5.603E-09	0.0024	2.269E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.718E-09	0.0007
U-234	4.631E-11	0.0000	1.842E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.327E-09	0.0006
Total	2.237E-06	0.9712	1.279E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.633E-08	0.0288

0

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+01 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All pathways risk	All pathways fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.198E-07	0.1389
H-3	1.464E-25	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.464E-25	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.517E-08	0.0153
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.277E-06	0.5544
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.625E-07	0.2877
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.324E-09	0.0032
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.375E-09	0.0006
Total	1.464E-25	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.303E-06	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 3.000E+01 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Cs-137	6.507E-06	0.000E+00	0.000E+00	0.000E+00	1.364E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.364E+00
H-3	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	1.276E-05	0.000E+00	0.000E+00	0.000E+00	2.677E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.677E+00
Ra-226	1.317E-05	0.000E+00	0.000E+00	0.000E+00	2.761E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.761E+00
Ra-228	3.539E-07	0.000E+00	0.000E+00	0.000E+00	7.421E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.421E-02
Th-228	5.302E-07	0.000E+00	0.000E+00	0.000E+00	1.112E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.112E-01
Th-230	1.314E-05	0.000E+00	0.000E+00	0.000E+00	2.756E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.756E+00
U-234	1.301E-05	0.000E+00	0.000E+00	0.000E+00	2.729E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.729E+00

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 3.000E+01 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+01 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	1.987E-07	0.1262	3.644E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.551E-10	0.0002
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	7.263E-10	0.0005	1.963E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.608E-08	0.0293
Ra-226	1.256E-06	0.7974	1.861E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.106E-09	0.0045
Ra-228	1.844E-08	0.0117	7.742E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.317E-10	0.0003
Th-228	4.382E-08	0.0278	3.818E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.348E-10	0.0001
Th-230	1.478E-10	0.0001	2.235E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.640E-09	0.0010
U-234	4.557E-11	0.0000	1.809E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.303E-09	0.0008
Total	1.518E-06	0.9637	8.330E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.715E-08	0.0363

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+01 years

Water Dependent Pathways

Radio-	Water		Fish		Plant		Meat		Milk		All Pathways**	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.990E-07	0.1264
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.680E-08	0.0297
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.263E-06	0.8019
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.897E-08	0.0120
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.405E-08	0.0280
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.790E-09	0.0011
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.350E-09	0.0009
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.575E-06	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

0

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 3.000E+01 years

0

Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+01 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground risk	Ground fract.	Inhalation risk	Inhalation fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	Soil risk	Soil fract.
Cs-137	1.987E-07	0.1262	3.644E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.551E-10	0.0002
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	2.811E-10	0.0002	7.595E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.783E-08	0.0113
Ra-226	1.240E-06	0.7874	3.032E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.505E-08	0.0223
Ra-228	6.226E-08	0.0395	4.592E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.665E-10	0.0005
Th-230	1.635E-08	0.0104	2.267E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.943E-09	0.0012
U-234	4.780E-11	0.0000	1.809E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.303E-09	0.0008
Total	1.518E-06	0.9637	8.330E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.715E-08	0.0363

0

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+01 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All pathways risk	All pathways fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.990E-07	0.1264
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.811E-08	0.0115
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.275E-06	0.8096
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.303E-08	0.0400
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.829E-08	0.0116
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.353E-09	0.0009
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.575E-06	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 1.000E+02 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Cs-137	1.212E-06	0.000E+00	0.000E+00	0.000E+00	2.541E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.541E-01
H-3	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	1.210E-05	0.000E+00	0.000E+00	0.000E+00	2.538E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.538E+00
Ra-226	1.270E-05	0.000E+00	0.000E+00	0.000E+00	2.663E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.663E+00
Ra-228	7.389E-11	0.000E+00	0.000E+00	0.000E+00	1.549E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.549E-05
Th-228	1.108E-10	0.000E+00	0.000E+00	0.000E+00	2.323E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.323E-05
Th-230	1.263E-05	0.000E+00	0.000E+00	0.000E+00	2.648E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.648E+00
U-234	1.221E-05	0.000E+00	0.000E+00	0.000E+00	2.561E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.561E+00

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 1.000E+02 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+02 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	3.774E-08	0.0285	6.787E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.752E-11	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	7.064E-10	0.0005	1.861E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.369E-08	0.0330
Ra-226	1.233E-06	0.9305	1.795E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.854E-09	0.0052
Ra-228	3.920E-12	0.0000	1.616E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.110E-13	0.0000
Th-228	9.307E-12	0.0000	7.977E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.906E-14	0.0000
Th-230	1.459E-10	0.0001	2.147E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.575E-09	0.0012
U-234	4.395E-11	0.0000	1.698E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.223E-09	0.0009
Total	1.271E-06	0.9597	7.502E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.339E-08	0.0403

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+02 years

Water Dependent Pathways

Radio-	Water		Fish		Plant		Meat		Milk		All Pathways**	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.779E-08	0.0285
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.440E-08	0.0335
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.240E-06	0.9357
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.031E-12	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.356E-12	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.723E-09	0.0013
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.268E-09	0.0010
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.325E-06	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

0

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 1.000E+02 years

0

Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+02 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground risk	Ground fract.	Inhalation risk	Inhalation fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	Soil risk	Soil fract.
Cs-137	3.774E-08	0.0285	6.787E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.752E-11	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	2.822E-11	0.0000	7.436E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.746E-09	0.0013
Ra-226	1.181E-06	0.8917	3.451E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.720E-08	0.0356
Ra-228	1.323E-11	0.0000	9.593E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.601E-13	0.0000
Th-230	5.226E-08	0.0394	2.276E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.170E-09	0.0024
U-234	6.742E-11	0.0001	1.700E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.225E-09	0.0009
Total	1.271E-06	0.9597	7.502E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.339E-08	0.0403

0

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+02 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All pathways risk	All pathways fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.779E-08	0.0285
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.774E-09	0.0013
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.228E-06	0.9273
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.339E-11	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.543E-08	0.0418
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.294E-09	0.0010
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.325E-06	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 1.000E+03 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Cs-137	4.525E-16	0.000E+00	0.000E+00	0.000E+00	9.489E-11	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	9.489E-11
H-3	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	6.810E-06	0.000E+00	0.000E+00	0.000E+00	1.428E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.428E+00
Ra-226	7.156E-06	0.000E+00	0.000E+00	0.000E+00	1.501E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.501E+00
Ra-228	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-228	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	6.815E-06	0.000E+00	0.000E+00	0.000E+00	1.429E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.429E+00
U-234	4.884E-06	0.000E+00	0.000E+00	0.000E+00	1.024E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.024E+00

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 1.000E+03 years

0 Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+03 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	1.856E-17	0.0000	2.534E-25	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.774E-20	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	5.868E-10	0.0006	1.047E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.458E-08	0.0266
Ra-226	8.937E-07	0.9670	1.012E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.862E-09	0.0042
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	1.176E-10	0.0001	1.159E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.502E-10	0.0009
U-234	2.668E-11	0.0000	6.788E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.890E-10	0.0005
Total	8.944E-07	0.9678	3.896E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.978E-08	0.0322

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+03 years

Water Dependent Pathways

Radio-	Water		Fish		Plant		Meat		Milk		All Pathways**	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.858E-17	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.517E-08	0.0272
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.976E-07	0.9712
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.690E-10	0.0010
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.163E-10	0.0006
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.242E-07	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

0

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 1.000E+03 years

0

Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+03 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground risk	Ground fract.	Inhalation risk	Inhalation fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	Soil risk	Soil fract.
Cs-137	1.856E-17	0.0000	2.534E-25	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.774E-20	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	3.985E-24	0.0000	7.113E-27	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.670E-22	0.0000
Ra-226	5.863E-07	0.6344	1.359E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.886E-08	0.0204
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	3.068E-07	0.3319	1.847E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.039E-08	0.0112
U-234	1.341E-09	0.0015	6.906E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.353E-10	0.0006
Total	8.944E-07	0.9678	3.896E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.978E-08	0.0322

0

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+03 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All pathways risk	All pathways fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.858E-17	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.710E-22	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.052E-07	0.6548
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.172E-07	0.3432
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.877E-09	0.0020
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.242E-07	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

ATTACHMENT G-9

DOSE AND RISK CALCULATION

AND

OUTPUT DOSE AND RISK ASSESSMENTS SUMMARY REPORTS

FOR DISPOSAL PIT A/B UNDER FUTURE RESIDENTIAL FARMER SCENARIO

Table G-9-1: Results of Residual Dose Assessment for Disposal Pit A/B Under Future Residential Farmer Scenario

Nuclide	EPC (pCi/g)	Dose to Source Ratio ((mrem/yr)/(pCi/g))													
		Water Independent Pathways							Water Dependant Pathways						All Pathways*
		Ground	Inhalation	Radon	Plant	Meat	Milk	Soil	Water	Fish	Radon	Plant	Meat	Milk	
Ac-227	0.295	5.8E-01	1.1E-03	0	4.8E-01	7.6E-04	1.9E-03	4.7E-01	0	0	0	0	0	0	1.5E+00
Cs-137	0.117	9.3E-01	5.3E-09	0	2.6E-02	7.0E-03	4.3E-03	1.6E-03	0	0	0	0	0	0	9.7E-01
H-3	20.09	0	4.6E-06	0	3.6E-04	1.5E-05	1.9E-05	2.8E-07	1.4E-05	9.9E-12	0	0	0	2.2E-07	4.1E-04
Th-230	0.205	1.0E-03	5.5E-05	0	7.3E-03	1.4E-04	2.0E-05	1.8E-02	0	0	0	0	0	0	2.6E-02

	Dose(mrem/yr)													
	Water Independent Pathways							Water Dependant Pathways						All Pathways*
	Ground	Inhalation	Radon	Plant	Meat	Milk	Soil	Water	Fish	Radon	Plant	Meat	Milk	
Ac-227	1.7E-01	3.3E-04	0	1.4E-01	2.3E-04	5.6E-04	1.4E-01	0	0	0	0	0	0	4.5E-01
Cs-137	1.1E-01	6.2E-10	0	3.0E-03	8.2E-04	5.0E-04	1.9E-04	0	0	0	0	0	0	1.1E-01
H-3	0.0E+00	9.2E-05	0	7.3E-03	3.1E-04	3.8E-04	5.6E-06	2.7E-04	2E-10	0	0	0	4.3E-06	8.3E-03
Th-230	2.1E-04	1.1E-05	0	1.5E-03	2.9E-05	4.2E-06	3.6E-03	0	0	0	0	0	0	5.4E-03
Total												**Cumulative Dose**		**5.8E-01**

Table G-9-2: Results of Residual Risk Assessment for Disposal Pit A/B under Future Residential Farmer Scenario

Nuclide	EPC (pCi/g)	Risk to Source Ratio (1/(pCi/g))													
		Water Independent Pathways							Water Dependant Pathways						All Pathways *
		Ground	Inhalation	Radon	Plant	Meat	Milk	Soil	Water	Fish	Radon	Plant	Meat	Milk	
Ac-227	0.295	1.3E-05	1.1E-09	0	6.4E-07	1.0E-09	2.6E-09	6.3E-07	0	0.0E+00	0	0	0	0	1.4E-05
Cs-137	0.117	2.1E-05	5.7E-13	0	5.9E-07	1.6E-07	9.8E-08	3.6E-08	0	0.0E+00	0	0	0	0	2.2E-05
H-3	20.09	0.0E+00	1.3E-08	0	1.6E-07	4.1E-09	6.3E-09	1.4E-10	0	0.0E+00	0	0	0	0	1.9E-07
Th-230	0.205	7.8E-09	1.7E-10	0	4.7E-08	9.1E-10	1.1E-10	1.1E-07	0	0.0E+00	0	0	0	0	1.7E-07

	Risk (Unitless)													
	Water Independent Pathways							Water Dependant Pathways						**All Pathways***
	Ground	Inhalation	Radon	Plant	Meat	Milk	Soil	Water	Fish	Radon	Plant	Meat	Milk	
Ac-227	3.8E-06	3.2E-10	0	1.9E-07	3.0E-10	7.6E-10	1.9E-07	0	0	0	0	0	0	3.8E-06
Cs-137	2.5E-06	6.6E-14	0	6.9E-08	1.9E-08	1.1E-08	4.2E-09	0	0	0	0	0	0	2.5E-06
H-3	0.0E+00	2.7E-07	0	3.2E-06	8.1E-08	1.3E-07	2.8E-09	0	0	0	0	0	0	0.0E+00
Th-230	1.6E-09	3.5E-11	0	9.6E-09	1.9E-10	2.3E-11	2.4E-08	0	0	0	0	0	0	1.6E-09
Total												**Cumulative Risk**		**1E-05**

Summary : Residual Dose and Risk Assessment for SEAD 12 Under Residential Receptor Scenar
File : C:\USERS\MRAHMAN\DOCUMENTS\OLD RESRAD FILES\SEAD 12 PIT AB-RESIDENT.RAD

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Dose Conversion Factor (and Related) Parameter Summary
Dose Library: FGR 12 & FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation (mrem/yr)/(pCi/g)			
A-1	Ac-227 (Source: FGR 12)	4.951E-04	4.951E-04	DCF1(1)
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1(2)
A-1	Ba-137m (Source: FGR 12)	3.606E+00	3.606E+00	DCF1(3)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1(4)
A-1	Bi-211 (Source: FGR 12)	2.559E-01	2.559E-01	DCF1(5)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1(6)
A-1	Cs-137 (Source: FGR 12)	7.510E-04	7.510E-04	DCF1(7)
A-1	Fr-223 (Source: FGR 12)	1.980E-01	1.980E-01	DCF1(8)
A-1	H-3 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1(9)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1(10)
A-1	Pb-211 (Source: FGR 12)	3.064E-01	3.064E-01	DCF1(11)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1(12)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1(13)
A-1	Po-211 (Source: FGR 12)	4.764E-02	4.764E-02	DCF1(14)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1(15)
A-1	Po-215 (Source: FGR 12)	1.016E-03	1.016E-03	DCF1(16)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1(17)
A-1	Ra-223 (Source: FGR 12)	6.034E-01	6.034E-01	DCF1(18)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1(19)
A-1	Rn-219 (Source: FGR 12)	3.083E-01	3.083E-01	DCF1(20)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1(21)
A-1	Th-227 (Source: FGR 12)	5.212E-01	5.212E-01	DCF1(22)
A-1	Th-230 (Source: FGR 12)	1.209E-03	1.209E-03	DCF1(23)
A-1	Tl-207 (Source: FGR 12)	1.980E-02	1.980E-02	DCF1(24)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1(25)
B-1	Dose conversion factors for inhalation mrem/pCi:			
B-1	Ac-227+D	6.724E+00	6.700E+00	DCF2(1)
B-1	Cs-137+D	3.190E-05	3.190E-05	DCF2(2)
B-1	H-3	6.400E-08	6.400E-08	DCF2(3)
B-1	Pb-210+D	2.320E-02	1.360E-02	DCF2(4)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2(5)
B-1	Th-230	3.260E-01	3.260E-01	DCF2(6)
D-1	Dose conversion factors for ingestion mrem/pCi:			
D-1	Ac-227+D	1.480E-02	1.410E-02	DCF3(1)
D-1	Cs-137+D	5.000E-05	5.000E-05	DCF3(2)
D-1	H-3	6.400E-08	6.400E-08	DCF3(3)
D-1	Pb-210+D	7.276E-03	5.370E-03	DCF3(4)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3(5)

```
D-1   Th-230                                                  5.480E-04  5.480E-04  DCF3(  6)

D-34  Food transfer factors:
D-34  Ac-227+D   plant/soil concentration ratio dimensionless    2.500E-03  2.500E-03  RTF(  11)
D-34  Ac-227+D   beef/livestock-intake ratio (pCi/kg)/(pCi/d)    2.000E-05  2.000E-05  RTF(  12)
D-34  Ac-227+D   milk/livestock-intake ratio (pCi/L)/(pCi/d)     2.000E-05  2.000E-05  RTF(  13)
D-34
```

Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: FGR 12 & FGR 11

Menu		Parameter	Current Value#	Base Case*	Parameter Name
D-34	Cs-137+D	plant/soil concentration ratio dimensionless	4.000E-02	4.000E-02	RTF(21)
D-34	Cs-137+D	beef/livestock-intake ratio (pCi/kg)/(pCi/d)	3.000E-02	3.000E-02	RTF(22)
D-34	Cs-137+D	milk/livestock-intake ratio (pCi/L)/(pCi/d)	8.000E-03	8.000E-03	RTF(23)
D-34					
D-34	H-3	plant/soil concentration ratio dimensionless	4.800E+00	4.800E+00	RTF(31)
D-34	H-3	beef/livestock-intake ratio (pCi/kg)/(pCi/d)	1.200E-02	1.200E-02	RTF(32)
D-34	H-3	milk/livestock-intake ratio (pCi/L)/(pCi/d)	1.000E-02	1.000E-02	RTF(33)
D-34					
D-34	Pb-210+D	plant/soil concentration ratio dimensionless	1.000E-02	1.000E-02	RTF(41)
D-34	Pb-210+D	beef/livestock-intake ratio (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(42)
D-34	Pb-210+D	milk/livestock-intake ratio (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(43)
D-34					
D-34	Ra-226+D	plant/soil concentration ratio dimensionless	4.000E-02	4.000E-02	RTF(51)
D-34	Ra-226+D	beef/livestock-intake ratio (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(52)
D-34	Ra-226+D	milk/livestock-intake ratio (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(53)
D-34					
D-34	Th-230	plant/soil concentration ratio dimensionless	1.000E-03	1.000E-03	RTF(61)
D-34	Th-230	beef/livestock-intake ratio (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(62)
D-34	Th-230	milk/livestock-intake ratio (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(63)
D-5	Bioaccumulation factors fresh water L/kg:				
D-5	Ac-227+D	fish	1.500E+01	1.500E+01	BIOFAC(11)
D-5	Ac-227+D	crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(12)
D-5					
D-5	Cs-137+D	fish	2.000E+03	2.000E+03	BIOFAC(21)
D-5	Cs-137+D	crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(22)
D-5					
D-5	H-3	fish	1.000E+00	1.000E+00	BIOFAC(31)
D-5	H-3	crustacea and mollusks	1.000E+00	1.000E+00	BIOFAC(32)
D-5					
D-5	Pb-210+D	fish	3.000E+02	3.000E+02	BIOFAC(41)
D-5	Pb-210+D	crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(42)
D-5					
D-5	Ra-226+D	fish	5.000E+01	5.000E+01	BIOFAC(51)
D-5	Ra-226+D	crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(52)
D-5					
D-5	Th-230	fish	1.000E+02	1.000E+02	BIOFAC(61)
D-5	Th-230	crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(62)

#For DCF1(xxx) only factors are for infinite depth & area. See ETFG table in Ground Pathway of Detailed Report.
*Base Case means Default.Lib w/o Associate Nuclide contributions.

Site-Specific Parameter Summary

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	2.160E+03	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E-01	2.000E+00	---	THICK0
R011	Fraction of contamination that is submerged	0.000E+00	0.000E+00	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	4.650E+01	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	2.500E+01	3.000E+01	---	BRDL
R011	Time since placement of material (yr)	0.000E+00	0.000E+00	---	TI
R011	Times for calculations (yr)	1.000E+00	1.000E+00	---	T(2)
R011	Times for calculations (yr)	2.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	3.000E+00	1.000E+01	---	T(4)
R011	Times for calculations (yr)	1.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	3.000E+01	1.000E+02	---	T(6)
R011	Times for calculations (yr)	1.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	3.000E+02	1.000E+03	---	T(8)
R011	Times for calculations (yr)	1.000E+03	0.000E+00	---	T(9)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): Ac-227	1.000E+00	0.000E+00	---	S1(1)
R012	Initial principal radionuclide (pCi/g): Cs-137	1.000E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): H-3	1.000E+00	0.000E+00	---	S1(3)
R012	Initial principal radionuclide (pCi/g): Th-230	1.000E+00	0.000E+00	---	S1(6)
R012	Concentration in groundwater (pCi/L): Ac-227	not used	0.000E+00	---	W1(1)
R012	Concentration in groundwater (pCi/L): Cs-137	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): H-3	not used	0.000E+00	---	W1(3)
R012	Concentration in groundwater (pCi/L): Th-230	not used	0.000E+00	---	W1(6)
R013	Cover depth (m)	0.000E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)	not used	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	1.280E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	6.000E-04	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	3.700E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	6.000E-02	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	2.900E+01	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	7.750E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	3.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	6.600E+00	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	7.000E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	7.500E-01	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	0.000E+00	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	1.300E+07	1.000E+06	---	WAREA

R013	Accuracy for water/soil computations	1.000E-03	1.000E-03	---	EPS
R014	Density of saturated zone (g/cm**3)	1.500E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	3.700E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	1.750E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	2.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	2.900E+02	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	1.100E-02	2.000E-02	---	HGWT

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R014	Saturated zone b parameter	not used	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	0.000E+00	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	3.000E+00	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	ND	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	5.000E+01	2.500E+02	---	UW
R015	Number of unsaturated zone strata	1	1	---	NS
R015	Unsat. zone 1 thickness (m)	1.000E+00	4.000E+00	---	H(1)
R015	Unsat. zone 1 soil density (g/cm**3)	1.500E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1 total porosity	3.700E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1 effective porosity	1.750E-01	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1 field capacity	2.000E-01	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1 soil-specific b parameter	7.750E+00	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1 hydraulic conductivity (m/yr)	2.900E+01	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Ac-227				
R016	Contaminated zone (cm**3/g)	2.400E+03	2.000E+01	---	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	2.400E+03	2.000E+01	---	DCNUCU(11)
R016	Saturated zone (cm**3/g)	2.400E+03	2.000E+01	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.906E-04	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for Cs-137				
R016	Contaminated zone (cm**3/g)	1.900E+03	4.600E+03	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	1.900E+03	4.600E+03	---	DCNUCU(21)
R016	Saturated zone (cm**3/g)	1.900E+03	4.600E+03	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.934E-04	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for H-3				
R016	Contaminated zone (cm**3/g)	6.000E-02	0.000E+00	---	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	6.000E-02	0.000E+00	---	DCNUCU(31)
R016	Saturated zone (cm**3/g)	6.000E-02	0.000E+00	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.353E+00	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)
R016	Distribution coefficients for Th-230				
R016	Contaminated zone (cm**3/g)	5.800E+03	6.000E+04	---	DCNUCC(6)
R016	Unsaturated zone 1 (cm**3/g)	5.800E+03	6.000E+04	---	DCNUCU(61)
R016	Saturated zone (cm**3/g)	5.800E+03	6.000E+04	---	DCNUCS(6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.616E-04	ALEACH(6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(6)

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R016  Distribution coefficients for daughter Pb-210
R016    Contaminated zone (cm**3/g)                    1.000E+02  1.000E+02              ---                DCNUCC( 4)
R016    Unsaturated zone 1 (cm**3/g)                   1.000E+02  1.000E+02              ---                DCNUCU( 41)
R016    Saturated zone (cm**3/g)                       1.000E+02  1.000E+02              ---                DCNUCS( 4)
R016    Leach rate (/yr)                               0.000E+00  0.000E+00           9.354E-03             ALEACH( 4)
R016    Solubility constant                            0.000E+00  0.000E+00           not used              SOLUBK( 4)
```

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for daughter Ra-226				
R016	Contaminated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCC(5)
R016	Unsaturated zone 1 (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCU(51)
R016	Saturated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCS(5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.335E-02	ALEACH(5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(5)
R017	Inhalation rate (m**3/yr)	5.177E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	7.580E-07	1.000E-04	---	MLINH
R017	Exposure duration	3.000E+01	3.000E+01	---	ED
R017	Shielding factor inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor external gamma	4.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	6.550E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	8.000E-02	2.500E-01	---	FOTD
R017	Shape factor flag external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m) ring 1:	not used	5.000E+01	---	RAD_SHAPE(1)
R017	Outer annular radius (m) ring 2:	not used	7.071E+01	---	RAD_SHAPE(2)
R017	Outer annular radius (m) ring 3:	not used	0.000E+00	---	RAD_SHAPE(3)
R017	Outer annular radius (m) ring 4:	not used	0.000E+00	---	RAD_SHAPE(4)
R017	Outer annular radius (m) ring 5:	not used	0.000E+00	---	RAD_SHAPE(5)
R017	Outer annular radius (m) ring 6:	not used	0.000E+00	---	RAD_SHAPE(6)
R017	Outer annular radius (m) ring 7:	not used	0.000E+00	---	RAD_SHAPE(7)
R017	Outer annular radius (m) ring 8:	not used	0.000E+00	---	RAD_SHAPE(8)
R017	Outer annular radius (m) ring 9:	not used	0.000E+00	---	RAD_SHAPE(9)
R017	Outer annular radius (m) ring 10:	not used	0.000E+00	---	RAD_SHAPE(10)
R017	Outer annular radius (m) ring 11:	not used	0.000E+00	---	RAD_SHAPE(11)
R017	Outer annular radius (m) ring 12:	not used	0.000E+00	---	RAD_SHAPE(12)
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA(1)
R017	Ring 2	not used	2.732E-01	---	FRACA(2)
R017	Ring 3	not used	0.000E+00	---	FRACA(3)
R017	Ring 4	not used	0.000E+00	---	FRACA(4)
R017	Ring 5	not used	0.000E+00	---	FRACA(5)
R017	Ring 6	not used	0.000E+00	---	FRACA(6)
R017	Ring 7	not used	0.000E+00	---	FRACA(7)
R017	Ring 8	not used	0.000E+00	---	FRACA(8)
R017	Ring 9	not used	0.000E+00	---	FRACA(9)
R017	Ring 10	not used	0.000E+00	---	FRACA(10)
R017	Ring 11	not used	0.000E+00	---	FRACA(11)
R017	Ring 12	not used	0.000E+00	---	FRACA(12)

R018	Fruits vegetables and grain consumption (kg/yr)	1.479E+02	1.600E+02	---	DIET(1)
R018	Leafy vegetable consumption (kg/yr)	9.200E+00	1.400E+01	---	DIET(2)
R018	Milk consumption (L/yr)	1.164E+02	9.200E+01	---	DIET(3)
R018	Meat and poultry consumption (kg/yr)	4.600E+01	6.300E+01	---	DIET(4)
R018	Fish consumption (kg/yr)	5.300E+00	5.400E+00	---	DIET(5)
R018	Other seafood consumption (kg/yr)	9.000E-01	9.000E-01	---	DIET(6)
R018	Soil ingestion rate (g/yr)	4.380E+01	3.650E+01	---	SOIL

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R018	Drinking water intake (L/yr)	5.100E+02	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	1.000E+00	1.000E+00	---	FDW
R018	Contamination fraction of household water	not used	1.000E+00	---	FHHW
R018	Contamination fraction of livestock water	1.000E+00	1.000E+00	---	FLW
R018	Contamination fraction of irrigation water	1.000E+00	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	5.000E-01	5.000E-01	---	FR9
R018	Contamination fraction of plant food	-1	-1	0.500E+00	FPLANT
R018	Contamination fraction of meat	-1	-1	0.108E+00	FMEAT
R018	Contamination fraction of milk	-1	-1	0.108E+00	FMILK
R019	Livestock fodder intake for meat (kg/day)	6.800E+01	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	5.500E+01	5.500E+01	---	LFI6
R019	Livestock water intake for meat (L/day)	5.000E+01	5.000E+01	---	LWI5
R019	Livestock water intake for milk (L/day)	1.600E+02	1.600E+02	---	LWI6
R019	Livestock soil intake (kg/day)	5.000E-01	5.000E-01	---	LSI
R019	Mass loading for foliar deposition (g/m**3)	1.000E-04	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	1.500E-01	1.500E-01	---	DM
R019	Depth of roots (m)	9.000E-01	9.000E-01	---	DROOT
R019	Drinking water fraction from ground water	1.000E+00	1.000E+00	---	FGWDW
R019	Household water fraction from ground water	not used	1.000E+00	---	FGWHH
R019	Livestock water fraction from ground water	1.000E+00	1.000E+00	---	FGWLW
R019	Irrigation fraction from ground water	1.000E+00	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	7.000E-01	7.000E-01	---	YV(1)
R19B	Wet weight crop yield for Leafy (kg/m**2)	1.500E+00	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	1.100E+00	1.100E+00	---	YV(3)
R19B	Growing Season for Non-Leafy (years)	1.700E-01	1.700E-01	---	TE(1)
R19B	Growing Season for Leafy (years)	2.500E-01	2.500E-01	---	TE(2)
R19B	Growing Season for Fodder (years)	8.000E-02	8.000E-02	---	TE(3)
R19B	Translocation Factor for Non-Leafy	1.000E-01	1.000E-01	---	TIV(1)
R19B	Translocation Factor for Leafy	1.000E+00	1.000E+00	---	TIV(2)
R19B	Translocation Factor for Fodder	1.000E+00	1.000E+00	---	TIV(3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	2.500E-01	2.500E-01	---	RDRY(1)
R19B	Dry Foliar Interception Fraction for Leafy	2.500E-01	2.500E-01	---	RDRY(2)
R19B	Dry Foliar Interception Fraction for Fodder	2.500E-01	2.500E-01	---	RDRY(3)
R19B	Wet Foliar Interception Fraction for Non-Leafy	2.500E-01	2.500E-01	---	RWET(1)
R19B	Wet Foliar Interception Fraction for Leafy	2.500E-01	2.500E-01	---	RWET(2)
R19B	Wet Foliar Interception Fraction for Fodder	2.500E-01	2.500E-01	---	RWET(3)
R19B	Weathering Removal Constant for Vegetation	2.000E+01	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm**3)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ

C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (1/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits non-leafy vegetables and grain	1.400E+01	1.400E+01	---	STOR_T(1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA(1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA(2)
TITL	Number of graphical time points	32	---	---	NPTS
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	1	---	---	KYMAX

Summary of Pathway Selections

Pathway	User Selection
1 -- external gamma	active
2 -- inhalation (w/o radon)	active
3 -- plant ingestion	active
4 -- meat ingestion	active
5 -- milk ingestion	active
6 -- aquatic foods	active
7 -- drinking water	active
8 -- soil ingestion	active
9 -- radon	suppressed
Find peak pathway doses	suppressed

Summary : Residual Dose and Risk Assessment for SEAD 12 Under Residential Receptor Scenar
File : C:\USERS\MRAHMAN\DOCUMENTS\OLD RESRAD FILES\SEAD 12 PIT AB-RESIDENT.RAD

Contaminated Zone Dimensions		Initial Soil Concentrations pCi/g	
Area:	2160.00 square meters	Ac-227	1.000E+00
Thickness:	0.15 meters	Cs-137	1.000E+00
Cover Depth:	0.00 meters	H-3	1.000E+00
		Th-230	1.000E+00

Total Dose TDOSE(t) mrem/yr
Basic Radiation Dose Limit = 2.500E+01 mrem/yr
Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	2.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	2.527E+00	2.455E+00	2.382E+00	2.311E+00	1.871E+00	1.048E+00	2.042E-01	3.192E-03	1.057E-01
M(t):	1.011E-01	9.820E-02	9.529E-02	9.246E-02	7.486E-02	4.193E-02	8.169E-03	1.277E-04	4.227E-03

Maximum TDOSE(t): 2.527E+00 mrem/yr at t = 0.000E+00 years

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	5.815E-01	0.2301	1.113E-03	0.0004	0.000E+00	0.0000	4.767E-01	0.1886	7.634E-04	0.0003	1.911E-03	0.0008	4.678E-01	0.1851
Cs-137	9.320E-01	0.3688	5.305E-09	0.0000	0.000E+00	0.0000	2.583E-02	0.0102	7.012E-03	0.0028	4.300E-03	0.0017	1.588E-03	0.0006
H-3	0.000E+00	0.0000	4.592E-06	0.0000	0.000E+00	0.0000	3.610E-04	0.0001	1.545E-05	0.0000	1.892E-05	0.0000	2.809E-07	0.0000
Th-230	1.005E-03	0.0004	5.485E-05	0.0000	0.000E+00	0.0000	7.339E-03	0.0029	1.402E-04	0.0001	2.036E-05	0.0000	1.761E-02	0.0070
Total	1.515E+00	0.5993	1.173E-03	0.0005	0.000E+00	0.0000	5.102E-01	0.2019	7.931E-03	0.0031	6.251E-03	0.0025	4.870E-01	0.1927

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years
Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.530E+00	0.6053
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.708E-01	0.3841
H-3	1.354E-05	0.0000	9.859E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.157E-07	0.0000	4.140E-04	0.0002
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.617E-02	0.0104
Total	1.354E-05	0.0000	9.859E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.157E-07	0.0000	2.527E+00	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	5.625E-01	0.2291	1.074E-03	0.0004	0.000E+00	0.0000	4.597E-01	0.1872	7.363E-04	0.0003	1.843E-03	0.0008	4.512E-01	0.1838
Cs-137	9.090E-01	0.3703	5.160E-09	0.0000	0.000E+00	0.0000	2.513E-02	0.0102	6.821E-03	0.0028	4.183E-03	0.0017	1.544E-03	0.0006
H-3	0.000E+00	0.0000	3.008E-09	0.0000	0.000E+00	0.0000	2.806E-07	0.0000	1.943E-08	0.0000	2.044E-08	0.0000	1.840E-10	0.0000
Th-230	2.237E-03	0.0009	5.462E-05	0.0000	0.000E+00	0.0000	7.614E-03	0.0031	1.425E-04	0.0001	2.657E-05	0.0000	1.756E-02	0.0072
Total	1.474E+00	0.6003	1.128E-03	0.0005	0.000E+00	0.0000	4.924E-01	0.2006	7.700E-03	0.0031	6.053E-03	0.0025	4.703E-01	0.1916

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years
Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.477E+00	0.6016
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.467E-01	0.3856
H-3	3.582E-03	0.0015	4.063E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.415E-06	0.0000	6.071E-05	0.0000	3.652E-03	0.0015
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.764E-02	0.0113
Total	3.582E-03	0.0015	4.063E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.415E-06	0.0000	6.071E-05	0.0000	2.455E+00	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 2.000E+00 years
Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	5.441E-01	0.2284	1.035E-03	0.0004	0.000E+00	0.0000	4.433E-01	0.1861	7.101E-04	0.0003	1.778E-03	0.0007	4.351E-01	0.1826
Cs-137	8.866E-01	0.3722	5.020E-09	0.0000	0.000E+00	0.0000	2.444E-02	0.0103	6.636E-03	0.0028	4.069E-03	0.0017	1.502E-03	0.0006
H-3	0.000E+00	0.0000	1.970E-12	0.0000	0.000E+00	0.0000	1.838E-10	0.0000	1.272E-11	0.0000	1.339E-11	0.0000	1.205E-13	0.0000
Th-230	3.448E-03	0.0014	5.439E-05	0.0000	0.000E+00	0.0000	7.897E-03	0.0033	1.449E-04	0.0001	3.290E-05	0.0000	1.751E-02	0.0074
Total	1.434E+00	0.6020	1.090E-03	0.0005	0.000E+00	0.0000	4.757E-01	0.1997	7.491E-03	0.0031	5.880E-03	0.0025	4.541E-01	0.1906

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 2.000E+00 years
Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.426E+00	0.5986
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.232E-01	0.3875
H-3	3.846E-03	0.0016	4.441E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.075E-05	0.0000	6.539E-05	0.0000	3.922E-03	0.0016
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.909E-02	0.0122
Total	3.846E-03	0.0016	4.441E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.075E-05	0.0000	6.539E-05	0.0000	2.382E+00	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	5.263E-01	0.2277	9.986E-04	0.0004	0.000E+00	0.0000	4.275E-01	0.1850	6.848E-04	0.0003	1.714E-03	0.0007	4.196E-01	0.1815
Cs-137	8.647E-01	0.3741	4.883E-09	0.0000	0.000E+00	0.0000	2.378E-02	0.0103	6.455E-03	0.0028	3.958E-03	0.0017	1.461E-03	0.0006
H-3	0.000E+00	0.0000	1.290E-15	0.0000	0.000E+00	0.0000	1.204E-13	0.0000	8.334E-15	0.0000	8.768E-15	0.0000	7.892E-17	0.0000
Th-230	4.638E-03	0.0020	5.416E-05	0.0000	0.000E+00	0.0000	8.183E-03	0.0035	1.476E-04	0.0001	3.927E-05	0.0000	1.746E-02	0.0076
Total	1.396E+00	0.6038	1.053E-03	0.0005	0.000E+00	0.0000	4.595E-01	0.1988	7.287E-03	0.0032	5.712E-03	0.0025	4.385E-01	0.1897

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years
Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.377E+00	0.5957
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.003E-01	0.3895
H-3	3.643E-03	0.0016	4.207E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.018E-05	0.0000	6.194E-05	0.0000	3.715E-03	0.0016
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.053E-02	0.0132
Total	3.643E-03	0.0016	4.207E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.018E-05	0.0000	6.194E-05	0.0000	2.311E+00	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+01 years
Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	4.168E-01	0.2227	7.743E-04	0.0004	0.000E+00	0.0000	3.315E-01	0.1771	5.310E-04	0.0003	1.329E-03	0.0007	3.254E-01	0.1739
Cs-137	7.255E-01	0.3877	4.022E-09	0.0000	0.000E+00	0.0000	1.958E-02	0.0105	5.317E-03	0.0028	3.260E-03	0.0017	1.204E-03	0.0006
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	1.241E-02	0.0066	5.257E-05	0.0000	0.000E+00	0.0000	1.027E-02	0.0055	1.691E-04	0.0001	8.458E-05	0.0000	1.718E-02	0.0092
Total	1.155E+00	0.6171	8.269E-04	0.0004	0.000E+00	0.0000	3.614E-01	0.1931	6.017E-03	0.0032	4.674E-03	0.0025	3.438E-01	0.1837

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+01 years
Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.076E+00	0.5751
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.549E-01	0.4034
H-3	1.137E-22	0.0000	1.489E-28	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.720E-25	0.0000	1.975E-24	0.0000	1.161E-22	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.016E-02	0.0215
Total	1.137E-22	0.0000	1.489E-28	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.720E-25	0.0000	1.975E-24	0.0000	1.871E+00	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	2.134E-01	0.2035	3.725E-04	0.0004	0.000E+00	0.0000	1.595E-01	0.1521	2.554E-04	0.0002	6.395E-04	0.0006	1.565E-01	0.1493
Cs-137	4.380E-01	0.4178	2.299E-09	0.0000	0.000E+00	0.0000	1.120E-02	0.0107	3.040E-03	0.0029	1.864E-03	0.0018	6.881E-04	0.0007
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	2.982E-02	0.0284	4.803E-05	0.0000	0.000E+00	0.0000	1.597E-02	0.0152	2.393E-04	0.0002	2.045E-04	0.0002	1.658E-02	0.0158
Total	6.812E-01	0.6498	4.205E-04	0.0004	0.000E+00	0.0000	1.867E-01	0.1781	3.534E-03	0.0034	2.708E-03	0.0026	1.738E-01	0.1658

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years
Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.307E-01	0.5062
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.548E-01	0.4338
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.286E-02	0.0600
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.048E+00	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	1.942E-02	0.0951	2.659E-05	0.0001	0.000E+00	0.0000	1.138E-02	0.0557	1.823E-05	0.0001	4.564E-05	0.0002	1.117E-02	0.0547
Cs-137	7.059E-02	0.3457	3.002E-10	0.0000	0.000E+00	0.0000	1.462E-03	0.0072	3.969E-04	0.0019	2.434E-04	0.0012	8.984E-05	0.0004
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	5.304E-02	0.2597	3.236E-05	0.0002	0.000E+00	0.0000	2.253E-02	0.1103	3.303E-04	0.0016	3.580E-04	0.0018	1.308E-02	0.0640
Total	1.431E-01	0.7005	5.895E-05	0.0003	0.000E+00	0.0000	3.537E-02	0.1732	7.454E-04	0.0037	6.470E-04	0.0032	2.434E-02	0.1192

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years
Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.207E-02	0.2060
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.278E-02	0.3564
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.937E-02	0.4376
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.042E-01	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years
Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years
Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	3.183E-03	0.9972	7.566E-07	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	1.342E-06	0.0004	6.731E-06	0.0021	3.192E-03	1.0000
Total	3.183E-03	0.9972	7.566E-07	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	1.342E-06	0.0004	6.731E-06	0.0021	3.192E-03	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years
Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	1.054E-01	0.9976	2.821E-05	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	4.321E-05	0.0004	1.841E-04	0.0017	1.057E-01	1.0000
Total	1.054E-01	0.9976	2.821E-05	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	4.321E-05	0.0004	1.841E-04	0.0017	1.057E-01	1.0000

*Sum of all water independent and dependent pathways.

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(jt) At Time in Years (mrem/yr)/(pCi/g) 0.000E+00	1.000E+00	2.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ac-227+D	Ac-227+D	1.000E+00	1.530E+00	1.477E+00	1.426E+00	1.377E+00	1.076E+00	5.307E-01	4.207E-02	0.000E+00	0.000E+00
0Cs-137+D	Cs-137+D	1.000E+00	9.708E-01	9.467E-01	9.232E-01	9.003E-01	7.549E-01	4.548E-01	7.278E-02	0.000E+00	0.000E+00
0H-3	H-3	1.000E+00	4.140E-04	3.652E-03	3.922E-03	3.715E-03	1.161E-22	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0Th-230	Th-230	1.000E+00	2.539E-02	2.529E-02	2.518E-02	2.508E-02	2.435E-02	2.227E-02	1.508E-02	0.000E+00	0.000E+00
Th-230	Ra-226+D	1.000E+00	7.761E-04	2.327E-03	3.851E-03	5.348E-03	1.508E-02	3.656E-02	6.320E-02	1.079E-03	2.160E-02
Th-230	Pb-210+D	1.000E+00	3.343E-06	2.061E-05	5.274E-05	9.875E-05	7.359E-04	4.027E-03	1.109E-02	2.113E-03	8.407E-02
Th-230	-DSR(j)		2.617E-02	2.764E-02	2.909E-02	3.053E-02	4.016E-02	6.286E-02	8.937E-02	3.192E-03	1.057E-01

The DSR includes contributions from associated (half-life ó 180 days) daughters.

Single Radionuclide Soil Guidelines G(it) in pCi/g
Basic Radiation Dose Limit = 2.500E+01 mrem/yr

Nuclide (i)	t= 0.000E+00	1.000E+00	2.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ac-227	1.634E+01	1.693E+01	1.753E+01	1.816E+01	2.323E+01	4.711E+01	5.943E+02	*7.232E+13	*7.232E+13
Cs-137	2.575E+01	2.641E+01	2.708E+01	2.777E+01	3.312E+01	5.497E+01	3.435E+02	*8.704E+13	*8.704E+13
H-3	6.038E+04	6.846E+03	6.374E+03	6.729E+03	*9.597E+15	*9.597E+15	*9.597E+15	*9.597E+15	*9.597E+15
Th-230	9.552E+02	9.046E+02	8.594E+02	8.190E+02	6.225E+02	3.977E+02	2.797E+02	7.832E+03	2.366E+02

*At specific activity limit

Summed Dose/Source Ratios DSR(it) in (mrem/yr)/(pCi/g)
and Single Radionuclide Soil Guidelines G(it) in pCi/g
at tmin = time of minimum single radionuclide soil guideline
and at tmax = time of maximum total dose = 0.000E+00 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(itmin) (pCi/g)	G(itmin) (pCi/g)	DSR(itmax) (pCi/g)	G(itmax) (pCi/g)
Ac-227	1.000E+00	0.000E+00	1.530E+00	1.634E+01	1.530E+00	1.634E+01
Cs-137	1.000E+00	0.000E+00	9.708E-01	2.575E+01	9.708E-01	2.575E+01
H-3	1.000E+00	1.378 ñ 0.003	4.031E-03	6.203E+03	4.140E-04	6.038E+04
Th-230	1.000E+00	536 ñ 1	1.122E-01	2.229E+02	2.617E-02	9.552E+02

Individual Nuclide Dose Summed Over All Pathways
Parent Nuclide and Branch Fraction Indicated

0Nuclide (j)	Parent (i)	THF(i)	DOSE(jt) mrem/yr t= 0.000E+00	1.000E+00	2.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ac-227	Ac-227	1.000E+00	1.530E+00	1.477E+00	1.426E+00	1.377E+00	1.076E+00	5.307E-01	4.207E-02	0.000E+00	0.000E+00
0Cs-137	Cs-137	1.000E+00	9.708E-01	9.467E-01	9.232E-01	9.003E-01	7.549E-01	4.548E-01	7.278E-02	0.000E+00	0.000E+00
0H-3	H-3	1.000E+00	4.140E-04	3.652E-03	3.922E-03	3.715E-03	1.161E-22	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0Th-230	Th-230	1.000E+00	2.539E-02	2.529E-02	2.518E-02	2.508E-02	2.435E-02	2.227E-02	1.508E-02	0.000E+00	0.000E+00
0Ra-226	Th-230	1.000E+00	7.761E-04	2.327E-03	3.851E-03	5.348E-03	1.508E-02	3.656E-02	6.320E-02	1.079E-03	2.160E-02
0Pb-210	Th-230	1.000E+00	3.343E-06	2.061E-05	5.274E-05	9.875E-05	7.359E-04	4.027E-03	1.109E-02	2.113E-03	8.407E-02

THF(i) is the thread fraction of the parent nuclide.

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

0Nuclide (j)	Parent (i)	THF(i)	S(jt) pCi/g t= 0.000E+00	1.000E+00	2.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ac-227	Ac-227	1.000E+00	1.000E+00	9.683E-01	9.376E-01	9.078E-01	7.245E-01	3.803E-01	3.985E-02	6.329E-05	1.010E-14
0Cs-137	Cs-137	1.000E+00	1.000E+00	9.767E-01	9.539E-01	9.317E-01	7.898E-01	4.927E-01	9.444E-02	8.422E-04	5.642E-11
0H-3	H-3	1.000E+00	1.000E+00	6.576E-04	4.324E-07	2.843E-10	1.511E-32	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0Th-230	Th-230	1.000E+00	1.000E+00	9.998E-01	9.997E-01	9.995E-01	9.983E-01	9.949E-01	9.831E-01	9.501E-01	8.431E-01
0Ra-226	Th-230	1.000E+00	0.000E+00	4.302E-04	8.545E-04	1.273E-03	4.043E-03	1.062E-02	2.327E-02	2.973E-02	2.683E-02
0Pb-210	Th-230	1.000E+00	0.000E+00	6.612E-06	2.598E-05	5.741E-05	5.636E-04	3.627E-03	1.502E-02	2.275E-02	2.071E-02

THF(i) is the thread fraction of the parent nuclide.
RESCALC.EXE execution time = 0.42 seconds

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Part III: Intake Quantities and Health Risk Factors

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Risk Slope and ETFG for the Ground Pathway 3
Amount of Intake Quantities and Excess Cancer Risks
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Time= 2.000E+00 10
Time= 3.000E+00 13
Time= 1.000E+01 16
Time= 3.000E+01 19
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Cancer Risk Slope Factors Summary Table
Risk Library: FGR 13 Morbidity

Menu	Parameter	Current Value	Base Case*	Parameter Name
Sf-1	Ground external radiation slope factors, 1/yr per (pCi/g):			
Sf-1	Ac-227+D	1.47E-06	3.48E-10	SLPF(1,1)
Sf-1	Cs-137+D	2.55E-06	5.32E-10	SLPF(2,1)
Sf-1	H-3	0.00E+00	0.00E+00	SLPF(3,1)
Sf-1	Pb-210+D	4.21E-09	1.41E-09	SLPF(4,1)
Sf-1	Ra-226+D	8.49E-06	2.29E-08	SLPF(5,1)
Sf-1	Th-230	8.19E-10	8.19E-10	SLPF(6,1)
Sf-2	Inhalation, slope factors, 1/(pCi):			
Sf-2	Ac-227+D	2.13E-07	1.49E-07	SLPF(1,2)
Sf-2	Cs-137+D	1.12E-10	1.12E-10	SLPF(2,2)
Sf-2	H-3	8.51E-13	8.51E-13	SLPF(3,2)
Sf-2	Pb-210+D	3.08E-08	1.58E-08	SLPF(4,2)
Sf-2	Ra-226+D	2.83E-08	2.82E-08	SLPF(5,2)
Sf-2	Th-230	3.40E-08	3.40E-08	SLPF(6,2)
Sf-3	Food ingestion, slope factors, 1/(pCi):			
Sf-3	Ac-227+D	6.53E-10	2.45E-10	SLPF(1,3)
Sf-3	Cs-137+D	3.74E-11	3.74E-11	SLPF(2,3)
Sf-3	H-3	1.44E-13	1.44E-13	SLPF(3,3)
Sf-3	Pb-210+D	3.44E-09	1.18E-09	SLPF(4,3)
Sf-3	Ra-226+D	5.15E-10	5.14E-10	SLPF(5,3)
Sf-3	Th-230	1.19E-10	1.19E-10	SLPF(6,3)
Sf-3	Water ingestion, slope factors, 1/(pCi):			
Sf-3	Ac-227+D	4.86E-10	2.01E-10	SLPF(1,4)
Sf-3	Cs-137+D	3.04E-11	3.04E-11	SLPF(2,4)
Sf-3	H-3	1.12E-13	1.12E-13	SLPF(3,4)
Sf-3	Pb-210+D	2.66E-09	8.81E-10	SLPF(4,4)
Sf-3	Ra-226+D	3.86E-10	3.85E-10	SLPF(5,4)
Sf-3	Th-230	9.10E-11	9.10E-11	SLPF(6,4)
Sf-3	Soil ingestion, slope factors, 1/(pCi):			
Sf-3	Ac-227+D	6.53E-10	2.45E-10	SLPF(1,5)
Sf-3	Cs-137+D	3.74E-11	3.74E-11	SLPF(2,5)
Sf-3	H-3	1.44E-13	1.44E-13	SLPF(3,5)
Sf-3	Pb-210+D	3.44E-09	1.18E-09	SLPF(4,5)
Sf-3	Ra-226+D	5.15E-10	5.14E-10	SLPF(5,5)
Sf-3	Th-230	1.19E-10	1.19E-10	SLPF(6,5)
Sf-Rn	Radon Inhalation slope factors, 1/(pCi):			

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Sf-Rn  Rn-222                                                    1.80E-12   1.80E-12   SLPFRN(1,1)
Sf-Rn  Po-218                                                    3.70E-12   3.70E-12   SLPFRN(1,2)
Sf-Rn  Pb-214                                                    6.20E-12   6.20E-12   SLPFRN(1,3)
Sf-Rn  Bi-214                                                    1.50E-11   1.50E-11   SLPFRN(1,4)

Sf-Rn  Radon K factors, (mrem/WLM):
Sf-Rn  Rn-222 Indoor                                             7.60E+02   7.60E+02   KFACTR(1,1)
Sf-Rn  Rn-222 Outdoor                                            5.70E+02   5.70E+02   KFACTR(1,2)
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*Base Case means Default.Lib w/o Associate Nuclide contributions.
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Risk Slope and Environmental Transport Factors for the Ground Pathway

Nuclide (i)	Slope(i)*	ETFG(i,t) At Time in Years (dimensionless)								
	t=	0.000E+00	1.000E+00	2.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ac-227	3.480E-10	3.130E-01	3.128E-01	3.126E-01	3.125E-01	3.112E-01	3.068E-01	2.795E-01	0.000E+00	0.000E+00
At-218	3.570E-09	3.189E-01	3.190E-01	3.191E-01	3.191E-01	3.195E-01	3.207E-01	3.221E-01	0.000E+00	0.000E+00
Ba-137m	2.690E-06	2.766E-01	2.762E-01	2.758E-01	2.754E-01	2.726E-01	2.639E-01	2.220E-01	0.000E+00	0.000E+00
Bi-210	2.760E-09	3.045E-01	3.043E-01	3.040E-01	3.038E-01	3.019E-01	2.959E-01	2.633E-01	0.000E+00	0.000E+00
Bi-211	1.880E-07	2.916E-01	2.913E-01	2.910E-01	2.906E-01	2.883E-01	2.806E-01	2.417E-01	0.000E+00	0.000E+00
Bi-214	7.480E-06	2.542E-01	2.538E-01	2.533E-01	2.529E-01	2.497E-01	2.400E-01	1.968E-01	0.000E+00	0.000E+00
Cs-137	5.320E-10	3.134E-01	3.132E-01	3.130E-01	3.129E-01	3.115E-01	3.070E-01	2.801E-01	0.000E+00	0.000E+00
Fr-223	1.400E-07	3.028E-01	3.026E-01	3.024E-01	3.022E-01	3.005E-01	2.950E-01	2.643E-01	0.000E+00	0.000E+00
H-3	0.000E+00	3.420E-01	3.420E-01	3.420E-01	3.420E-01	3.420E-01	3.420E-01	3.420E-01	3.420E-01	3.420E-01
Pb-210	1.410E-09	3.220E-01	3.220E-01	3.221E-01	3.221E-01	3.223E-01	3.230E-01	3.245E-01	0.000E+00	0.000E+00
Pb-211	2.290E-07	2.777E-01	2.773E-01	2.769E-01	2.765E-01	2.738E-01	2.651E-01	2.235E-01	0.000E+00	0.000E+00
Pb-214	9.820E-07	2.909E-01	2.905E-01	2.902E-01	2.899E-01	2.875E-01	2.799E-01	2.412E-01	0.000E+00	0.000E+00
Po-210	3.950E-11	2.714E-01	2.710E-01	2.706E-01	2.702E-01	2.673E-01	2.582E-01	2.157E-01	0.000E+00	0.000E+00
Po-211	3.580E-08	2.720E-01	2.716E-01	2.712E-01	2.708E-01	2.679E-01	2.590E-01	2.168E-01	0.000E+00	0.000E+00
Po-214	3.860E-10	2.703E-01	2.699E-01	2.695E-01	2.691E-01	2.662E-01	2.572E-01	2.150E-01	0.000E+00	0.000E+00
Po-215	7.480E-10	2.824E-01	2.820E-01	2.817E-01	2.813E-01	2.787E-01	2.704E-01	2.299E-01	0.000E+00	0.000E+00
Po-218	4.260E-11	2.698E-01	2.694E-01	2.690E-01	2.686E-01	2.657E-01	2.566E-01	2.143E-01	0.000E+00	0.000E+00
Ra-223	4.340E-07	3.018E-01	3.016E-01	3.013E-01	3.011E-01	2.992E-01	2.930E-01	2.593E-01	0.000E+00	0.000E+00
Ra-226	2.290E-08	3.042E-01	3.040E-01	3.037E-01	3.035E-01	3.016E-01	2.955E-01	2.616E-01	0.000E+00	0.000E+00
Rn-219	2.250E-07	2.912E-01	2.909E-01	2.905E-01	2.902E-01	2.878E-01	2.801E-01	2.413E-01	0.000E+00	0.000E+00
Rn-222	1.740E-09	2.803E-01	2.799E-01	2.795E-01	2.791E-01	2.764E-01	2.679E-01	2.267E-01	0.000E+00	0.000E+00
Th-227	3.780E-07	2.973E-01	2.970E-01	2.968E-01	2.965E-01	2.943E-01	2.875E-01	2.511E-01	0.000E+00	0.000E+00
Th-230	8.190E-10	3.157E-01	3.156E-01	3.155E-01	3.154E-01	3.147E-01	3.122E-01	2.933E-01	0.000E+00	0.000E+00
Tl-207	1.520E-08	2.798E-01	2.794E-01	2.790E-01	2.787E-01	2.760E-01	2.675E-01	2.269E-01	0.000E+00	0.000E+00
Tl-210	0.000E+00	3.420E-01	3.420E-01	3.420E-01	3.420E-01	3.420E-01	3.420E-01	3.420E-01	3.420E-01	3.420E-01

* - Units are 1/yr per (pCi/g) at infinite depth and area. Multiplication by ETFG(i,t) converts to site conditions.

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 0.000E+00 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Ac-227	1.686E-04	3.279E+01	5.252E-02	1.315E-01	3.219E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.517E+01
Cs-137	1.686E-04	5.237E+02	1.421E+02	8.718E+01	3.219E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.852E+02
H-3	5.263E+02	3.742E+04	9.379E+02	1.447E+03	3.219E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.983E+04
Pb-210	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ra-226	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	1.686E-04	1.316E+01	2.542E-01	3.202E-02	3.219E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.564E+01

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 0.000E+00 years

Radon Pathway	Radionuclides							
	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 0.000E+00 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	1.293E-05	0.3536	1.077E-09	0.0000	6.424E-07	0.0176	1.029E-09	0.0000	2.576E-09	0.0001	6.306E-07	0.0172
Cs-137	2.112E-05	0.5776	5.665E-13	0.0000	5.876E-07	0.0161	1.595E-07	0.0044	9.782E-08	0.0027	3.612E-08	0.0010
H-3	0.000E+00	0.0000	1.344E-08	0.0004	1.616E-07	0.0044	4.052E-09	0.0001	6.251E-09	0.0002	1.391E-10	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	7.756E-09	0.0002	1.720E-10	0.0000	4.697E-08	0.0013	9.073E-10	0.0000	1.143E-10	0.0000	1.149E-07	0.0031
Total	3.406E-05	0.9314	1.468E-08	0.0004	1.439E-06	0.0393	1.654E-07	0.0045	1.068E-07	0.0029	7.818E-07	0.0214

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 0.000E+00 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All Pathways** risk	All Pathways** fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.421E-05	0.3885
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.200E-05	0.6017
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.855E-07	0.0051
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.709E-07	0.0047
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.656E-05	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 0.000E+00 years
Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 0.000E+00 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground risk	Ground fract.	Inhalation risk	Inhalation fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	Soil risk	Soil fract.
Ac-227	1.293E-05	0.3536	1.077E-09	0.0000	0.000E+00	0.0000	6.424E-07	0.0176	1.029E-09	0.0000	2.576E-09	0.0001	6.306E-07	0.0172
Cs-137	2.112E-05	0.5776	5.665E-13	0.0000	0.000E+00	0.0000	5.876E-07	0.0161	1.595E-07	0.0044	9.782E-08	0.0027	3.612E-08	0.0010
H-3	0.000E+00	0.0000	1.344E-08	0.0004	0.000E+00	0.0000	1.616E-07	0.0044	4.052E-09	0.0001	6.251E-09	0.0002	1.391E-10	0.0000
Th-230	7.756E-09	0.0002	1.720E-10	0.0000	0.000E+00	0.0000	4.697E-08	0.0013	9.073E-10	0.0000	1.143E-10	0.0000	1.149E-07	0.0031

Total	3.406E-05	0.9314	1.468E-08	0.0004	0.000E+00	0.0000	1.439E-06	0.0393	1.654E-07	0.0045	1.068E-07	0.0029	7.818E-07	0.0214

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Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 0.000E+00 years

Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.421E-05	0.3885
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.200E-05	0.6017
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.855E-07	0.0051
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.709E-07	0.0047
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.656E-05	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 1.000E+00 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Ac-227	1.626E-04	3.163E+01	5.066E-02	1.268E-01	3.105E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.286E+01
Cs-137	1.640E-04	5.096E+02	1.383E+02	8.483E+01	3.132E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.640E+02
H-3	3.447E-01	3.216E+01	2.226E+00	2.343E+00	2.108E-02	1.016E+04	7.394E-03	0.000E+00	0.000E+00	1.618E+02	1.036E+04
Pb-210	1.110E-09	1.044E-03	1.920E-05	1.646E-05	2.120E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.292E-03
Ra-226	7.224E-08	2.166E-01	1.811E-03	4.422E-03	1.379E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.366E-01
Th-230	1.679E-04	1.310E+01	2.532E-01	3.188E-02	3.206E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.545E+01

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 1.000E+00 years

Radon Pathway	Radionuclides							
	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+00 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	1.250E-05	0.3529	1.038E-09	0.0000	6.197E-07	0.0175	9.925E-10	0.0000	2.485E-09	0.0001	6.082E-07	0.0172
Cs-137	2.060E-05	0.5814	5.511E-13	0.0000	5.717E-07	0.0161	1.552E-07	0.0044	9.518E-08	0.0027	3.514E-08	0.0010
H-3	0.000E+00	0.0000	8.799E-12	0.0000	1.389E-10	0.0000	9.618E-12	0.0000	1.012E-11	0.0000	9.108E-14	0.0000
Pb-210	2.588E-13	0.0000	1.024E-15	0.0000	1.079E-10	0.0000	1.983E-12	0.0000	1.700E-12	0.0000	2.190E-11	0.0000
Ra-226	2.828E-08	0.0008	6.127E-14	0.0000	3.344E-09	0.0001	2.797E-11	0.0000	6.828E-11	0.0000	2.130E-10	0.0000
Th-230	7.753E-09	0.0002	1.713E-10	0.0000	4.678E-08	0.0013	9.038E-10	0.0000	1.138E-10	0.0000	1.144E-07	0.0032
Total	3.314E-05	0.9353	1.219E-09	0.0000	1.242E-06	0.0350	1.571E-07	0.0044	9.786E-08	0.0028	7.580E-07	0.0214

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+00 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All Pathways** risk	All Pathways** fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.374E-05	0.3877
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.146E-05	0.6056
H-3	3.413E-08	0.0010	3.194E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.990E-10	0.0000	3.500E-08	0.0010
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.337E-10	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.193E-08	0.0009
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.702E-07	0.0048
Total	3.413E-08	0.0010	3.194E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.990E-10	0.0000	3.543E-05	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 1.000E+00 years
Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+00 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground risk	Ground fract.	Inhalation risk	Inhalation fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	Soil risk	Soil fract.
Ac-227	1.250E-05	0.3529	1.038E-09	0.0000	0.000E+00	0.0000	6.197E-07	0.0175	9.925E-10	0.0000	2.485E-09	0.0001	6.082E-07	0.0172
Cs-137	2.060E-05	0.5814	5.511E-13	0.0000	0.000E+00	0.0000	5.717E-07	0.0161	1.552E-07	0.0044	9.518E-08	0.0027	3.514E-08	0.0010
H-3	0.000E+00	0.0000	8.799E-12	0.0000	0.000E+00	0.0000	1.389E-10	0.0000	9.618E-12	0.0000	1.012E-11	0.0000	9.108E-14	0.0000
Th-230	3.603E-08	0.0010	1.713E-10	0.0000	0.000E+00	0.0000	5.024E-08	0.0014	9.337E-10	0.0000	1.838E-10	0.0000	1.147E-07	0.0032

Total	3.314E-05	0.9353	1.219E-09	0.0000	0.000E+00	0.0000	1.242E-06	0.0350	1.571E-07	0.0044	9.786E-08	0.0028	7.580E-07	0.0214

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+00 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All pathways risk	All pathways fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.374E-05	0.3877
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.146E-05	0.6056
H-3	3.413E-08	0.0010	3.194E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.990E-10	0.0000	3.500E-08	0.0010
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.022E-07	0.0057
Total	3.413E-08	0.0010	3.194E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.990E-10	0.0000	3.543E-05	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 2.000E+00 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Ac-227	1.568E-04	3.051E+01	4.886E-02	1.223E-01	2.994E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.062E+01
Cs-137	1.595E-04	4.957E+02	1.346E+02	8.252E+01	3.046E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.432E+02
H-3	2.257E-04	2.106E-02	1.458E-03	1.534E-03	1.381E-05	6.176E+04	7.131E-02	0.000E+00	1.726E+02	1.050E+03	6.298E+04
Pb-210	4.344E-09	3.744E-03	6.984E-05	6.126E-05	8.295E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.704E-03
Ra-226	1.429E-07	4.363E-01	3.801E-03	8.995E-03	2.729E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.763E-01
Th-230	1.672E-04	1.305E+01	2.521E-01	3.175E-02	3.192E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.526E+01

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 2.000E+00 years

Radon Pathway	Radionuclides							
	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 2.000E+00 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	1.210E-05	0.3490	1.001E-09	0.0000	5.976E-07	0.0172	9.571E-10	0.0000	2.396E-09	0.0001	5.865E-07	0.0169
Cs-137	2.009E-05	0.5797	5.360E-13	0.0000	5.561E-07	0.0160	1.510E-07	0.0044	9.258E-08	0.0027	3.418E-08	0.0010
H-3	0.000E+00	0.0000	5.763E-15	0.0000	9.098E-14	0.0000	6.299E-15	0.0000	6.628E-15	0.0000	5.965E-17	0.0000
Pb-210	1.016E-12	0.0000	4.008E-15	0.0000	3.867E-10	0.0000	7.214E-12	0.0000	6.328E-12	0.0000	8.568E-11	0.0000
Ra-226	5.607E-08	0.0016	1.212E-13	0.0000	6.737E-09	0.0002	5.870E-11	0.0000	1.389E-10	0.0000	4.214E-10	0.0000
Th-230	7.749E-09	0.0002	1.705E-10	0.0000	4.659E-08	0.0013	9.000E-10	0.0000	1.133E-10	0.0000	1.140E-07	0.0033
Total	3.225E-05	0.9306	1.173E-09	0.0000	1.207E-06	0.0348	1.529E-07	0.0044	9.524E-08	0.0027	7.352E-07	0.0212

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 2.000E+00 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All Pathways** risk	All Pathways** fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.328E-05	0.3833
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.092E-05	0.6038
H-3	2.075E-07	0.0060	3.081E-13	0.0000	0.000E+00	0.0000	7.456E-10	0.0000	4.536E-09	0.0001	2.128E-07	0.0061
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.869E-10	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.343E-08	0.0018
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.695E-07	0.0049
Total	2.075E-07	0.0060	3.081E-13	0.0000	0.000E+00	0.0000	7.456E-10	0.0000	4.536E-09	0.0001	3.465E-05	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 2.000E+00 years
Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 2.000E+00 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground risk	Ground fract.	Inhalation risk	Inhalation fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	Soil risk	Soil fract.
Ac-227	1.210E-05	0.3490	1.001E-09	0.0000	0.000E+00	0.0000	5.976E-07	0.0172	9.571E-10	0.0000	2.396E-09	0.0001	5.865E-07	0.0169
Cs-137	2.009E-05	0.5797	5.360E-13	0.0000	0.000E+00	0.0000	5.561E-07	0.0160	1.510E-07	0.0044	9.258E-08	0.0027	3.418E-08	0.0010
H-3	0.000E+00	0.0000	5.763E-15	0.0000	0.000E+00	0.0000	9.098E-14	0.0000	6.299E-15	0.0000	6.628E-15	0.0000	5.965E-17	0.0000
Th-230	6.382E-08	0.0018	1.707E-10	0.0000	0.000E+00	0.0000	5.371E-08	0.0015	9.659E-10	0.0000	2.586E-10	0.0000	1.145E-07	0.0033

Total	3.225E-05	0.9306	1.173E-09	0.0000	0.000E+00	0.0000	1.207E-06	0.0348	1.529E-07	0.0044	9.524E-08	0.0027	7.352E-07	0.0212

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Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 2.000E+00 years

Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.328E-05	0.3833
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.092E-05	0.6038
H-3	2.075E-07	0.0060	3.081E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.456E-10	0.0000	4.536E-09	0.0001	2.128E-07	0.0061
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.334E-07	0.0067
Total	2.075E-07	0.0060	3.081E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.456E-10	0.0000	4.536E-09	0.0001	3.465E-05	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 3.000E+00 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Ac-227	1.512E-04	2.942E+01	4.712E-02	1.180E-01	2.888E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.846E+01
Cs-137	1.552E-04	4.822E+02	1.309E+02	8.027E+01	2.963E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.229E+02
H-3	1.478E-07	1.379E-05	9.550E-07	1.005E-06	9.043E-09	5.845E+04	6.749E-02	0.000E+00	1.634E+02	9.937E+02	5.961E+04
Pb-210	9.562E-09	7.981E-03	1.491E-04	1.323E-04	1.826E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.009E-02
Ra-226	2.120E-07	6.511E-01	5.748E-03	1.347E-02	4.048E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.108E-01
Th-230	1.665E-04	1.299E+01	2.510E-01	3.162E-02	3.179E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.507E+01

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 3.000E+00 years

Radon Pathway	Radionuclides							
	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+00 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	1.170E-05	0.3470	9.657E-10	0.0000	5.763E-07	0.0171	9.230E-10	0.0000	2.311E-09	0.0001	5.656E-07	0.0168
Cs-137	1.959E-05	0.5811	5.214E-13	0.0000	5.410E-07	0.0160	1.469E-07	0.0044	9.006E-08	0.0027	3.325E-08	0.0010
H-3	0.000E+00	0.0000	3.774E-18	0.0000	5.958E-17	0.0000	4.126E-18	0.0000	4.341E-18	0.0000	3.907E-20	0.0000
Pb-210	2.244E-12	0.0000	8.823E-15	0.0000	8.243E-10	0.0000	1.540E-11	0.0000	1.366E-11	0.0000	1.886E-10	0.0000
Ra-226	8.339E-08	0.0025	1.798E-13	0.0000	1.005E-08	0.0003	8.877E-11	0.0000	2.080E-10	0.0000	6.252E-10	0.0000
Th-230	7.746E-09	0.0002	1.698E-10	0.0000	4.639E-08	0.0014	8.962E-10	0.0000	1.129E-10	0.0000	1.135E-07	0.0034
Total	3.138E-05	0.9308	1.136E-09	0.0000	1.175E-06	0.0348	1.488E-07	0.0044	9.271E-08	0.0027	7.132E-07	0.0212

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+00 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All Pathways** risk	All Pathways** fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.285E-05	0.3810
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.041E-05	0.6052
H-3	1.964E-07	0.0058	2.916E-13	0.0000	0.000E+00	0.0000	7.058E-10	0.0000	4.293E-09	0.0001	2.014E-07	0.0060
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.044E-09	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.437E-08	0.0028
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.688E-07	0.0050
Total	1.964E-07	0.0058	2.916E-13	0.0000	0.000E+00	0.0000	7.058E-10	0.0000	4.293E-09	0.0001	3.372E-05	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 3.000E+00 years
Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+00 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground risk	Ground fract.	Inhalation risk	Inhalation fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	Soil risk	Soil fract.
Ac-227	1.170E-05	0.3470	9.657E-10	0.0000	0.000E+00	0.0000	5.763E-07	0.0171	9.230E-10	0.0000	2.311E-09	0.0001	5.656E-07	0.0168
Cs-137	1.959E-05	0.5811	5.214E-13	0.0000	0.000E+00	0.0000	5.410E-07	0.0160	1.469E-07	0.0044	9.006E-08	0.0027	3.325E-08	0.0010
H-3	0.000E+00	0.0000	3.774E-18	0.0000	0.000E+00	0.0000	5.958E-17	0.0000	4.126E-18	0.0000	4.341E-18	0.0000	3.907E-20	0.0000
Th-230	9.114E-08	0.0027	1.700E-10	0.0000	0.000E+00	0.0000	5.727E-08	0.0017	1.000E-09	0.0000	3.345E-10	0.0000	1.143E-07	0.0034

Total	3.138E-05	0.9308	1.136E-09	0.0000	0.000E+00	0.0000	1.175E-06	0.0348	1.488E-07	0.0044	9.271E-08	0.0027	7.132E-07	0.0212

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+00 years

Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.285E-05	0.3810
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.041E-05	0.6052
H-3	1.964E-07	0.0058	2.916E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.058E-10	0.0000	4.293E-09	0.0001	2.014E-07	0.0060
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.642E-07	0.0078
Total	1.964E-07	0.0058	2.916E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.058E-10	0.0000	4.293E-09	0.0001	3.372E-05	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 1.000E+01 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Ac-227	1.173E-04	2.281E+01	3.654E-02	9.148E-02	2.239E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.533E+01
Cs-137	1.278E-04	3.972E+02	1.078E+02	6.612E+01	2.441E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.955E+02
H-3	7.636E-30	7.124E-28	4.902E-29	5.150E-29	0.000E+00	1.303E-14	1.707E-20	0.000E+00	5.409E-17	2.264E-16	1.331E-14
Pb-210	9.122E-08	7.261E-02	1.355E-03	1.226E-03	1.742E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	9.261E-02
Ra-226	6.544E-07	2.027E+00	1.821E-02	4.210E-02	1.250E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.212E+00
Th-230	1.616E-04	1.261E+01	2.436E-01	3.068E-02	3.085E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.374E+01

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 1.000E+01 years

Radon Pathway	Radionuclides							
	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+01 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	9.266E-06	0.3341	7.488E-10	0.0000	4.469E-07	0.0161	7.158E-10	0.0000	1.792E-09	0.0001	4.386E-07	0.0158
Cs-137	1.644E-05	0.5928	4.295E-13	0.0000	4.456E-07	0.0161	1.210E-07	0.0044	7.418E-08	0.0027	2.739E-08	0.0010
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	2.195E-11	0.0000	8.416E-14	0.0000	7.500E-09	0.0003	1.400E-10	0.0000	1.266E-10	0.0000	1.799E-09	0.0001
Ra-226	2.617E-07	0.0094	5.550E-13	0.0000	3.129E-08	0.0011	2.812E-10	0.0000	6.501E-10	0.0000	1.930E-09	0.0001
Th-230	7.720E-09	0.0003	1.648E-10	0.0000	4.502E-08	0.0016	8.698E-10	0.0000	1.095E-10	0.0000	1.101E-07	0.0040
Total	2.598E-05	0.9366	9.147E-10	0.0000	9.763E-07	0.0352	1.230E-07	0.0044	7.686E-08	0.0028	5.799E-07	0.0209

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+01 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All Pathways** risk	All Pathways** fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.015E-05	0.3661
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.711E-05	0.6169
H-3	4.376E-26	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.337E-28	0.0000	9.779E-28	0.0000	4.498E-26	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.588E-09	0.0003
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.959E-07	0.0107
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.640E-07	0.0059
Total	4.376E-26	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.337E-28	0.0000	9.779E-28	0.0000	2.773E-05	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 1.000E+01 years
Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+01 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground risk	Ground fract.	Inhalation risk	Inhalation fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	Soil risk	Soil fract.
Ac-227	9.266E-06	0.3341	7.488E-10	0.0000	0.000E+00	0.0000	4.469E-07	0.0161	7.158E-10	0.0000	1.792E-09	0.0001	4.386E-07	0.0158
Cs-137	1.644E-05	0.5928	4.295E-13	0.0000	0.000E+00	0.0000	4.456E-07	0.0161	1.210E-07	0.0044	7.418E-08	0.0027	2.739E-08	0.0010
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	2.695E-07	0.0097	1.654E-10	0.0000	0.000E+00	0.0000	8.382E-08	0.0030	1.291E-09	0.0000	8.863E-10	0.0000	1.139E-07	0.0041

Total	2.598E-05	0.9366	9.147E-10	0.0000	0.000E+00	0.0000	9.763E-07	0.0352	1.230E-07	0.0044	7.686E-08	0.0028	5.799E-07	0.0209

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+01 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All pathways risk	All pathways fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.015E-05	0.3661
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.711E-05	0.6169
H-3	4.376E-26	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.337E-28	0.0000	9.779E-28	0.0000	4.498E-26	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.695E-07	0.0169
Total	4.376E-26	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.337E-28	0.0000	9.779E-28	0.0000	2.773E-05	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 3.000E+01 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Ac-227	5.642E-05	1.098E+01	1.758E-02	4.402E-02	1.077E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.181E+01
Cs-137	7.309E-05	2.271E+02	6.165E+01	3.781E+01	1.396E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.405E+02
H-3	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	5.381E-07	4.224E-01	7.875E-03	7.170E-03	1.027E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.401E-01
Ra-226	1.575E-06	4.889E+00	4.415E-02	1.017E-01	3.007E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.335E+00
Th-230	1.476E-04	1.152E+01	2.226E-01	2.803E-02	2.819E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.996E+01

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 3.000E+01 years

Radon Pathway	Radionuclides							
	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+01 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	4.744E-06	0.2887	3.603E-10	0.0000	2.150E-07	0.0131	3.444E-10	0.0000	8.623E-10	0.0001	2.111E-07	0.0128
Cs-137	9.927E-06	0.6042	2.456E-13	0.0000	2.548E-07	0.0155	6.917E-08	0.0042	4.242E-08	0.0026	1.566E-08	0.0010
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	1.395E-10	0.0000	4.964E-13	0.0000	4.363E-08	0.0027	8.134E-10	0.0000	7.406E-10	0.0000	1.061E-08	0.0006
Ra-226	6.615E-07	0.0403	1.336E-12	0.0000	7.549E-08	0.0046	6.818E-10	0.0000	1.570E-09	0.0001	4.644E-09	0.0003
Th-230	7.632E-09	0.0005	1.506E-10	0.0000	4.113E-08	0.0025	7.946E-10	0.0000	1.001E-10	0.0000	1.006E-07	0.0061
Total	1.534E-05	0.9336	5.129E-10	0.0000	6.301E-07	0.0383	7.181E-08	0.0044	4.569E-08	0.0028	3.426E-07	0.0209

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+01 years

Water Dependent Pathways

Radio-	Water		Fish		Plant		Meat		Milk		All Pathways**	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.172E-06	0.3147
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.031E-05	0.6274
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.593E-08	0.0034
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.439E-07	0.0453
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.504E-07	0.0092
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.643E-05	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 3.000E+01 years
Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+01 years
Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	4.744E-06	0.2887	3.603E-10	0.0000	0.000E+00	0.0000	2.150E-07	0.0131	3.444E-10	0.0000	8.623E-10	0.0001	2.111E-07	0.0128
Cs-137	9.927E-06	0.6042	2.456E-13	0.0000	0.000E+00	0.0000	2.548E-07	0.0155	6.917E-08	0.0042	4.242E-08	0.0026	1.566E-08	0.0010
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	6.693E-07	0.0407	1.524E-10	0.0000	0.000E+00	0.0000	1.602E-07	0.0098	2.290E-09	0.0001	2.411E-09	0.0001	1.159E-07	0.0071

Total	1.534E-05	0.9336	5.129E-10	0.0000	0.000E+00	0.0000	6.301E-07	0.0383	7.181E-08	0.0044	4.569E-08	0.0028	3.426E-07	0.0209

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+01 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All pathways risk	All pathways fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.172E-06	0.3147
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.031E-05	0.6274
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.503E-07	0.0578
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.643E-05	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 1.000E+02 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Ac-227	4.031E-06	7.844E-01	1.256E-03	3.145E-03	7.698E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.559E+00
Cs-137	9.553E-06	2.968E+01	8.059E+00	4.942E+00	1.824E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.451E+01
H-3	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	1.519E-06	1.187E+00	2.213E-02	2.019E-02	2.901E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.519E+00
Ra-226	2.353E-06	7.312E+00	6.615E-02	1.521E-01	4.494E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.979E+00
Th-230	9.945E-05	7.763E+00	1.500E-01	1.889E-02	1.899E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.692E+01

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 1.000E+02 years

Radon Pathway	Radionuclides							
	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+02 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	4.320E-07	0.1169	2.574E-11	0.0000	1.537E-08	0.0042	2.461E-11	0.0000	6.161E-11	0.0000	1.508E-08	0.0041
Cs-137	1.601E-06	0.4333	3.210E-14	0.0000	3.330E-08	0.0090	9.043E-09	0.0024	5.545E-09	0.0015	2.047E-09	0.0006
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	5.374E-10	0.0001	1.402E-12	0.0000	1.226E-07	0.0332	2.286E-09	0.0006	2.085E-09	0.0006	2.996E-08	0.0081
Ra-226	1.197E-06	0.3241	1.996E-12	0.0000	1.129E-07	0.0306	1.022E-09	0.0003	2.349E-09	0.0006	6.940E-09	0.0019
Th-230	7.085E-09	0.0019	1.014E-10	0.0000	2.771E-08	0.0075	5.354E-10	0.0001	6.742E-11	0.0000	6.779E-08	0.0183
Total	3.238E-06	0.8764	1.306E-10	0.0000	3.119E-07	0.0844	1.291E-08	0.0035	1.011E-08	0.0027	1.218E-07	0.0330

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+02 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All Pathways** risk	All Pathways** fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.625E-07	0.1252
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.651E-06	0.4468
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.575E-07	0.0426
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.321E-06	0.3574
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.033E-07	0.0280
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.695E-06	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 1.000E+02 years
Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+02 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground risk	Ground fract.	Inhalation risk	Inhalation fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	Soil risk	Soil fract.
Ac-227	4.320E-07	0.1169	2.574E-11	0.0000	0.000E+00	0.0000	1.537E-08	0.0042	2.461E-11	0.0000	6.161E-11	0.0000	1.508E-08	0.0041
Cs-137	1.601E-06	0.4333	3.210E-14	0.0000	0.000E+00	0.0000	3.330E-08	0.0090	9.043E-09	0.0024	5.545E-09	0.0015	2.047E-09	0.0006
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	1.205E-06	0.3261	1.048E-10	0.0000	0.000E+00	0.0000	2.632E-07	0.0712	3.842E-09	0.0010	4.502E-09	0.0012	1.047E-07	0.0283

Total	3.238E-06	0.8764	1.306E-10	0.0000	0.000E+00	0.0000	3.119E-07	0.0844	1.291E-08	0.0035	1.011E-08	0.0027	1.218E-07	0.0330

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+02 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All pathways risk	All pathways fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.625E-07	0.1252
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.651E-06	0.4468
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.581E-06	0.4280
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.695E-06	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 3.000E+02 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Ac-227	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Cs-137	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
H-3	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.753E-01	8.599E-05	0.000E+00	1.071E-04	3.259E-04	2.759E-01
Ra-226	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.820E-01	7.128E-05	0.000E+00	3.792E-04	3.083E-03	7.855E-01
Th-230	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 3.000E+02 years

Radon Pathway	Radionuclides							
	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+02 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+02 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All Pathways** risk	All Pathways** fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	2.197E-08	0.7059	8.882E-12	0.0003	0.000E+00	0.0000	1.107E-11	0.0004	3.367E-11	0.0011	2.203E-08	0.7077
Ra-226	9.045E-09	0.2906	1.101E-12	0.0000	0.000E+00	0.0000	5.856E-12	0.0002	4.762E-11	0.0015	9.099E-09	0.2923
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	3.102E-08	0.9965	9.982E-12	0.0003	0.000E+00	0.0000	1.692E-11	0.0005	8.128E-11	0.0026	3.113E-08	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 3.000E+02 years
Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+02 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground risk	Ground fract.	Inhalation risk	Inhalation fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	Soil risk	Soil fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+02 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All pathways risk	All pathways fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	3.102E-08	0.9965	9.982E-12	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	1.692E-11	0.0005	8.128E-11	0.0026	3.113E-08	1.0000
Total	3.102E-08	0.9965	9.982E-12	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	1.692E-11	0.0005	8.128E-11	0.0026	3.113E-08	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 1.000E+03 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Ac-227	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Cs-137	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
H-3	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.153E+01	3.607E-03	0.000E+00	4.500E-03	1.365E-02	1.155E+01
Ra-226	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.628E+01	1.486E-03	0.000E+00	7.928E-03	6.420E-02	1.635E+01
Th-230	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 1.000E+03 years

Radon Pathway	Radionuclides							
	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+03 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+03 years

Water Dependent Pathways

Radio-	Water		Fish		Plant		Meat		Milk		All Pathways**	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	9.203E-07	0.8276	3.726E-10	0.0003	0.000E+00	0.0000	4.648E-10	0.0004	1.410E-09	0.0013	9.225E-07	0.8297
Ra-226	1.883E-07	0.1693	2.294E-11	0.0000	0.000E+00	0.0000	1.224E-10	0.0001	9.914E-10	0.0009	1.894E-07	0.1703
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	1.109E-06	0.9970	3.955E-10	0.0004	0.000E+00	0.0000	5.872E-10	0.0005	2.401E-09	0.0022	1.112E-06	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 1.000E+03 years
Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+03 years
Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000						

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+03 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All pathways risk	All pathways fract.
Ac-227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	1.109E-06	0.9970	3.955E-10	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	5.872E-10	0.0005	2.401E-09	0.0022	1.112E-06	1.0000
Total	1.109E-06	0.9970	3.955E-10	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	5.872E-10	0.0005	2.401E-09	0.0022	1.112E-06	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

ATTACHMENT G-10

DOSE AND RISK CALCULATION

AND

OUTPUT DOSE AND RISK ASSESSMENTS SUMMARY REPORTS

FOR DISPOSAL PIT C UNDER FUTURE RESIDENTIAL FARMER SCENARIO

Table G-10-1: Results of Residual Dose Assessment for Disposal Pit C Under Future Residential Farmer Scenario

Nuclide	EPC (pCi/g)	Dose to Source Ratio ((mrem/yr)/(pCi/g))											
		Water Independent Pathways						Water Dependant Pathways					All Pathways
		Ground	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Cs-137	0.11	9.2E-01	5.9E-09	2.5E-02	2.6E-02	1.6E-02	1.5E-03	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	9.8E-01
H-3	49.84	0.0E+00	3.8E-11	1.7E-09	4.7E-10	4.9E-10	1.1E-12	3.9E-03	1.5E-08	0.0E+00	4.3E-05	2.6E-04	4.2E-03
Pb-210	0	1.8E-03	4.2E-06	8.8E-01	6.4E-02	5.8E-02	2.2E-01	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	1.2E+00
Ra-226	0	3.0E+00	2.0E-06	7.5E-01	2.9E-02	6.0E-02	5.7E-02	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	3.9E+00
Ra-228	0.35	2.4E+00	3.3E-05	5.8E-01	2.1E-02	4.7E-02	4.7E-02	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	3.1E+00
Th-230	0.2	3.2E-03	6.4E-05	7.8E-03	5.6E-04	1.2E-04	1.8E-02	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	2.9E-02
U-234	0.03	1.3E-04	2.6E-05	9.2E-03	9.7E-04	4.3E-03	9.0E-03	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	2.4E-02

	Dose(mrem/yr)											
	Water Independent Pathways						Water Dependant Pathways					All Pathways
	Ground	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Cs-137	1.0E-01	6.5E-10	2.7E-03	2.9E-03	1.8E-03	1.7E-04	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	1.1E-01
H-3	0.0E+00	1.9E-09	8.7E-08	2.3E-08	2.5E-08	5.7E-11	1.9E-01	7.7E-07	0.0E+00	2.1E-03	1.3E-02	2.1E-01
Pb-210	0.0E+00	0.0E+00	0.0E+00	0.0E+0	0.0E+0	0.0E+0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Ra-226	0.0E+00	0.0E+00	0.0E+00	0.0E+0	0.0E+0	0.0E+0	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Ra-228	8.6E-01	1.1E-05	2.0E-01	7.3E-03	1.6E-02	1.7E-02	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	1.1E+00
Th-230	6.4E-04	1.3E-05	1.6E-03	1.1E-04	2.4E-05	3.5E-03	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	5.9E-03
U-234	3.9E-06	7.8E-07	2.8E-04	2.9E-05	1.3E-04	2.7E-04	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	7.1E-04
										Cumulative Dose		**1.4E+00**

Table G-10-2: Results of Residual Risk Assessment for Disposal Pit C under Future Residential Farmer Scenario

Nuclide	EPC (pCi/g)	Risk to Source Ratio (1/(pCi/g))											
		Water Independent Pathways						Water Dependant Pathways					All Pathways
		Ground	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Cs-137	0.11	2E-05	6E-13	6E-07	6E-07	4E-07	3E-08	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	2.2E-05
H-3	49.84	0E+00	1E-13	8E-13	2E-13	2E-13	5E-16	2.1E-07	1.1E-12	0.0E+00	2.9E-09	1.8E-08	2.3E-07
Pb-210	0	4E-08	2E-10	1E-05	9E-07	8E-07	3E-06	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	1.8E-05
Ra-226	0	7E-05	2E-10	9E-06	3E-07	7E-07	7E-07	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	7.8E-05
Ra-228	0.35	5E-05	6E-10	2E-05	7E-07	1E-06	1E-06	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	7.6E-05
Th-230	0.2	6E-08	2E-10	5E-08	4E-09	9E-10	1E-07	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	2.3E-07
U-234	0.03	2E-09	2E-10	9E-08	1E-08	4E-08	9E-08	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	2.4E-07

	Risk (Unitless)											
	Water Independent Pathways						Water Dependant Pathways					All Pathways
	Ground	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Cs-137	2E-06	7E-14	6E-08	7E-08	4E-08	4E-09	0E+00	0E+00	0E+00	0E+00	0E+00	2E-06
H-3	0E+00	5E-12	4E-11	1E-11	1E-11	3E-14	1E-05	5E-11	0E+00	1E-07	9E-07	1E-05
Pb-210	0E+00	0E+00	0E00	0E+0	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
Ra-226	0E+00	0E+00	0E+0	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
Ra-228	2E-05	2E-10	6E-06	2E-07	5E-07	5E-07	0E+00	0E+00	0E+00	0E+00	0E+00	3E-05
Th-230	1E-08	4E-11	1E-08	7E-10	2E-10	2E-08	0E+00	0E+00	0E+00	0E+00	0E+00	5E-08
U-234	7E-11	5E-12	3E-09	3E-10	1E-09	3E-09	0E+00	0E+00	0E+00	0E+00	0E+00	7E-09
										Cumulative Risk		**4.1E-05**

Summary : Residual Dose and Risk Assessment for SEAD 12 Under Residential Receptor Scenar
File : C:\USERS\MRAHMAN\DOCUMENTS\OLD RESRAD FILES\SEAD 12 PIT C-RESIDENT.RAD

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Dose Conversion Factor (and Related) Parameter Summary
Dose Library: FGR 12 & FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation (mrem/yr)/(pCi/g)			
A-1	Ac-228 (Source: FGR 12)	5.978E+00	5.978E+00	DCF1(1)
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1(2)
A-1	Ba-137m (Source: FGR 12)	3.606E+00	3.606E+00	DCF1(3)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1(4)
A-1	Bi-212 (Source: FGR 12)	1.171E+00	1.171E+00	DCF1(5)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1(6)
A-1	Cs-137 (Source: FGR 12)	7.510E-04	7.510E-04	DCF1(7)
A-1	H-3 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1(8)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1(9)
A-1	Pb-212 (Source: FGR 12)	7.043E-01	7.043E-01	DCF1(10)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1(11)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1(12)
A-1	Po-212 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1(13)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1(14)
A-1	Po-216 (Source: FGR 12)	1.042E-04	1.042E-04	DCF1(15)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1(16)
A-1	Ra-224 (Source: FGR 12)	5.119E-02	5.119E-02	DCF1(17)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1(18)
A-1	Ra-228 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1(19)
A-1	Rn-220 (Source: FGR 12)	2.298E-03	2.298E-03	DCF1(20)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1(21)
A-1	Th-228 (Source: FGR 12)	7.940E-03	7.940E-03	DCF1(22)
A-1	Th-230 (Source: FGR 12)	1.209E-03	1.209E-03	DCF1(23)
A-1	Tl-208 (Source: FGR 12)	2.298E+01	2.298E+01	DCF1(24)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1(25)
A-1	U-234 (Source: FGR 12)	4.017E-04	4.017E-04	DCF1(26)
B-1	Dose conversion factors for inhalation mrem/pCi:			
B-1	Cs-137+D	3.190E-05	3.190E-05	DCF2(1)
B-1	H-3	6.400E-08	6.400E-08	DCF2(2)
B-1	Pb-210+D	2.320E-02	1.360E-02	DCF2(3)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2(4)
B-1	Ra-228+D	5.078E-03	4.770E-03	DCF2(5)
B-1	Th-228+D	3.454E-01	3.420E-01	DCF2(6)
B-1	Th-230	3.260E-01	3.260E-01	DCF2(7)
B-1	U-234	1.320E-01	1.320E-01	DCF2(8)
D-1	Dose conversion factors for ingestion mrem/pCi:			
D-1	Cs-137+D	5.000E-05	5.000E-05	DCF3(1)
D-1	H-3	6.400E-08	6.400E-08	DCF3(2)

D-1	Pb-210+D	7.276E-03	5.370E-03	DCF3(3)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3(4)
D-1	Ra-228+D	1.442E-03	1.440E-03	DCF3(5)
D-1	Th-228+D	8.086E-04	3.960E-04	DCF3(6)
D-1	Th-230	5.480E-04	5.480E-04	DCF3(7)
D-1	U-234	2.830E-04	2.830E-04	DCF3(8)

Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: FGR 12 & FGR 11

Menu		Parameter	Current Value#	Base Case*	Parameter Name
D-34	Food transfer factors:				
D-34	Cs-137+D	plant/soil concentration ratio dimensionless	4.000E-02	4.000E-02	RTF(11)
D-34	Cs-137+D	beef/livestock-intake ratio (pCi/kg)/(pCi/d)	3.000E-02	3.000E-02	RTF(12)
D-34	Cs-137+D	milk/livestock-intake ratio (pCi/L)/(pCi/d)	8.000E-03	8.000E-03	RTF(13)
D-34					
D-34	H-3	plant/soil concentration ratio dimensionless	4.800E+00	4.800E+00	RTF(21)
D-34	H-3	beef/livestock-intake ratio (pCi/kg)/(pCi/d)	1.200E-02	1.200E-02	RTF(22)
D-34	H-3	milk/livestock-intake ratio (pCi/L)/(pCi/d)	1.000E-02	1.000E-02	RTF(23)
D-34					
D-34	Pb-210+D	plant/soil concentration ratio dimensionless	1.000E-02	1.000E-02	RTF(31)
D-34	Pb-210+D	beef/livestock-intake ratio (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(32)
D-34	Pb-210+D	milk/livestock-intake ratio (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(33)
D-34					
D-34	Ra-226+D	plant/soil concentration ratio dimensionless	4.000E-02	4.000E-02	RTF(41)
D-34	Ra-226+D	beef/livestock-intake ratio (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(42)
D-34	Ra-226+D	milk/livestock-intake ratio (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(43)
D-34					
D-34	Ra-228+D	plant/soil concentration ratio dimensionless	4.000E-02	4.000E-02	RTF(51)
D-34	Ra-228+D	beef/livestock-intake ratio (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(52)
D-34	Ra-228+D	milk/livestock-intake ratio (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(53)
D-34					
D-34	Th-228+D	plant/soil concentration ratio dimensionless	1.000E-03	1.000E-03	RTF(61)
D-34	Th-228+D	beef/livestock-intake ratio (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(62)
D-34	Th-228+D	milk/livestock-intake ratio (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(63)
D-34					
D-34	Th-230	plant/soil concentration ratio dimensionless	1.000E-03	1.000E-03	RTF(71)
D-34	Th-230	beef/livestock-intake ratio (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(72)
D-34	Th-230	milk/livestock-intake ratio (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(73)
D-34					
D-34	U-234	plant/soil concentration ratio dimensionless	2.500E-03	2.500E-03	RTF(81)
D-34	U-234	beef/livestock-intake ratio (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(82)
D-34	U-234	milk/livestock-intake ratio (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(83)
D-5	Bioaccumulation factors fresh water L/kg:				
D-5	Cs-137+D	fish	2.000E+03	2.000E+03	BIOFAC(11)
D-5	Cs-137+D	crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(12)
D-5					
D-5	H-3	fish	1.000E+00	1.000E+00	BIOFAC(21)
D-5	H-3	crustacea and mollusks	1.000E+00	1.000E+00	BIOFAC(22)
D-5					
D-5	Pb-210+D	fish	3.000E+02	3.000E+02	BIOFAC(31)

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D-5   Pb-210+D   crustacea and mollusks                    1.000E+02  1.000E+02  BIOFAC(  32)
D-5
D-5   Ra-226+D   fish                                      5.000E+01  5.000E+01  BIOFAC(  41)
D-5   Ra-226+D   crustacea and mollusks                    2.500E+02  2.500E+02  BIOFAC(  42)
D-5
D-5   Ra-228+D   fish                                      5.000E+01  5.000E+01  BIOFAC(  51)
D-5   Ra-228+D   crustacea and mollusks                    2.500E+02  2.500E+02  BIOFAC(  52)
D-5
```

Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: FGR 12 & FGR 11

Menu		Parameter	Current Value#	Base Case*	Parameter Name
D-5	Th-228+D	fish	1.000E+02	1.000E+02	BIOFAC(61)
D-5	Th-228+D	crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(62)
D-5					
D-5	Th-230	fish	1.000E+02	1.000E+02	BIOFAC(71)
D-5	Th-230	crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(72)
D-5					
D-5	U-234	fish	1.000E+01	1.000E+01	BIOFAC(81)
D-5	U-234	crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(82)

#For DCF1(xxx) only factors are for infinite depth & area. See ETFG table in Ground Pathway of Detailed Report.
*Base Case means Default.Lib w/o Associate Nuclide contributions.

Summary : Residual Dose and Risk Assessment for SEAD 12 Under Residential Receptor Scenar
File : C:\USERS\MRAHMAN\DOCUMENTS\OLD RESRAD FILES\SEAD 12 PIT C-RESIDENT.RAD

Site-Specific Parameter Summary

Menu	Parameter		User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)		8.404E+03	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)		1.500E-01	2.000E+00	---	THICK0
R011	Fraction of contamination that is submerged		0.000E+00	0.000E+00	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)		9.200E+01	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)		2.500E+01	3.000E+01	---	BRDL
R011	Time since placement of material (yr)		0.000E+00	0.000E+00	---	TI
R011	Times for calculations (yr)		1.000E+00	1.000E+00	---	T(2)
R011	Times for calculations (yr)		1.700E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)		3.000E+00	1.000E+01	---	T(4)
R011	Times for calculations (yr)		1.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)		3.000E+01	1.000E+02	---	T(6)
R011	Times for calculations (yr)		1.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)		3.000E+02	1.000E+03	---	T(8)
R011	Times for calculations (yr)		1.000E+03	0.000E+00	---	T(9)
R011	Times for calculations (yr)		not used	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g):	Cs-137	1.000E+00	0.000E+00	---	S1(1)
R012	Initial principal radionuclide (pCi/g):	H-3	1.000E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g):	Pb-210	1.000E+00	0.000E+00	---	S1(3)
R012	Initial principal radionuclide (pCi/g):	Ra-226	1.000E+00	0.000E+00	---	S1(4)
R012	Initial principal radionuclide (pCi/g):	Ra-228	1.000E+00	0.000E+00	---	S1(5)
R012	Initial principal radionuclide (pCi/g):	Th-230	1.000E+00	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g):	U-234	1.000E+00	0.000E+00	---	S1(8)
R012	Concentration in groundwater (pCi/L):	Cs-137	not used	0.000E+00	---	W1(1)
R012	Concentration in groundwater (pCi/L):	H-3	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L):	Pb-210	not used	0.000E+00	---	W1(3)
R012	Concentration in groundwater (pCi/L):	Ra-226	not used	0.000E+00	---	W1(4)
R012	Concentration in groundwater (pCi/L):	Ra-228	not used	0.000E+00	---	W1(5)
R012	Concentration in groundwater (pCi/L):	Th-230	not used	0.000E+00	---	W1(7)
R012	Concentration in groundwater (pCi/L):	U-234	not used	0.000E+00	---	W1(8)
R013	Cover depth (m)		0.000E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)		not used	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)		not used	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)		1.280E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)		6.000E-04	1.000E-03	---	VCZ
R013	Contaminated zone total porosity		3.700E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity		6.000E-02	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)		2.900E+01	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter		7.750E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)		3.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)		6.600E+00	8.000E+00	---	HUMID

R013	Evapotranspiration coefficient	7.000E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	7.500E-01	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	0.000E+00	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	1.300E+07	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	1.000E-03	1.000E-03	---	EPS

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R014	Density of saturated zone (g/cm**3)	1.500E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	3.700E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	1.750E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	2.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	2.900E+02	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	1.100E-02	2.000E-02	---	HGWT
R014	Saturated zone b parameter	not used	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	0.000E+00	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	3.000E+00	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	ND	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	5.000E+01	2.500E+02	---	UW
R015	Number of unsaturated zone strata	1	1	---	NS
R015	Unsat. zone 1 thickness (m)	1.000E+00	4.000E+00	---	H(1)
R015	Unsat. zone 1 soil density (g/cm**3)	1.500E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1 total porosity	3.700E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1 effective porosity	1.750E-01	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1 field capacity	2.000E-01	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1 soil-specific b parameter	7.750E+00	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1 hydraulic conductivity (m/yr)	2.900E+01	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Cs-137				
R016	Contaminated zone (cm**3/g)	1.900E+03	4.600E+03	---	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	1.900E+03	4.600E+03	---	DCNUCU(11)
R016	Saturated zone (cm**3/g)	1.900E+03	4.600E+03	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.934E-04	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for H-3				
R016	Contaminated zone (cm**3/g)	6.000E-02	0.000E+00	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	6.000E-02	0.000E+00	---	DCNUCU(21)
R016	Saturated zone (cm**3/g)	6.000E-02	0.000E+00	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.353E+00	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for Pb-210				
R016	Contaminated zone (cm**3/g)	5.500E+02	1.000E+02	---	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	5.500E+02	1.000E+02	---	DCNUCU(31)
R016	Saturated zone (cm**3/g)	5.500E+02	1.000E+02	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.704E-03	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)

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R016  Distribution coefficients for Ra-226
R016    Contaminated zone (cm**3/g)          9.100E+03  7.000E+01          ---          DCNUCC( 4)
R016    Unsaturated zone 1 (cm**3/g)         9.100E+03  7.000E+01          ---          DCNUCU( 41)
R016    Saturated zone (cm**3/g)             9.100E+03  7.000E+01          ---          DCNUCS( 4)
R016    Leach rate (/yr)                     0.000E+00  0.000E+00       1.030E-04       ALEACH( 4)
R016    Solubility constant                  0.000E+00  0.000E+00       not used        SOLUBK( 4)
```

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Ra-228				
R016	Contaminated zone (cm**3/g)	9.100E+03	7.000E+01	---	DCNUCC(5)
R016	Unsaturated zone 1 (cm**3/g)	9.100E+03	7.000E+01	---	DCNUCU(51)
R016	Saturated zone (cm**3/g)	9.100E+03	7.000E+01	---	DCNUCS(5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.030E-04	ALEACH(5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(5)
R016	Distribution coefficients for Th-230				
R016	Contaminated zone (cm**3/g)	5.800E+03	6.000E+04	---	DCNUCC(7)
R016	Unsaturated zone 1 (cm**3/g)	5.800E+03	6.000E+04	---	DCNUCU(71)
R016	Saturated zone (cm**3/g)	5.800E+03	6.000E+04	---	DCNUCS(7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.616E-04	ALEACH(7)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(7)
R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	1.600E+03	5.000E+01	---	DCNUCC(8)
R016	Unsaturated zone 1 (cm**3/g)	1.600E+03	5.000E+01	---	DCNUCU(81)
R016	Saturated zone (cm**3/g)	1.600E+03	5.000E+01	---	DCNUCS(8)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.859E-04	ALEACH(8)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(8)
R016	Distribution coefficients for daughter Th-228				
R016	Contaminated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCC(6)
R016	Unsaturated zone 1 (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCU(61)
R016	Saturated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCS(6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.562E-05	ALEACH(6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(6)
R017	Inhalation rate (m**3/yr)	5.277E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	7.580E-07	1.000E-04	---	MLINH
R017	Exposure duration	3.000E+01	3.000E+01	---	ED
R017	Shielding factor inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor external gamma	4.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	6.550E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	8.000E-02	2.500E-01	---	FOTD
R017	Shape factor flag external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m) ring 1:	not used	5.000E+01	---	RAD_SHAPE(1)
R017	Outer annular radius (m) ring 2:	not used	7.071E+01	---	RAD_SHAPE(2)
R017	Outer annular radius (m) ring 3:	not used	0.000E+00	---	RAD_SHAPE(3)
R017	Outer annular radius (m) ring 4:	not used	0.000E+00	---	RAD_SHAPE(4)
R017	Outer annular radius (m) ring 5:	not used	0.000E+00	---	RAD_SHAPE(5)

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R017    Outer annular radius (m) ring  6:            not used   0.000E+00            ---              RAD_SHAPE( 6)
R017    Outer annular radius (m) ring  7:            not used   0.000E+00            ---              RAD_SHAPE( 7)
R017    Outer annular radius (m) ring  8:            not used   0.000E+00            ---              RAD_SHAPE( 8)
R017    Outer annular radius (m) ring  9:            not used   0.000E+00            ---              RAD_SHAPE( 9)
R017    Outer annular radius (m) ring 10:            not used   0.000E+00            ---              RAD_SHAPE(10)
R017    Outer annular radius (m) ring 11:            not used   0.000E+00            ---              RAD_SHAPE(11)
R017    Outer annular radius (m) ring 12:            not used   0.000E+00            ---              RAD_SHAPE(12)
```

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA(1)
R017	Ring 2	not used	2.732E-01	---	FRACA(2)
R017	Ring 3	not used	0.000E+00	---	FRACA(3)
R017	Ring 4	not used	0.000E+00	---	FRACA(4)
R017	Ring 5	not used	0.000E+00	---	FRACA(5)
R017	Ring 6	not used	0.000E+00	---	FRACA(6)
R017	Ring 7	not used	0.000E+00	---	FRACA(7)
R017	Ring 8	not used	0.000E+00	---	FRACA(8)
R017	Ring 9	not used	0.000E+00	---	FRACA(9)
R017	Ring 10	not used	0.000E+00	---	FRACA(10)
R017	Ring 11	not used	0.000E+00	---	FRACA(11)
R017	Ring 12	not used	0.000E+00	---	FRACA(12)
R018	Fruits vegetables and grain consumption (kg/yr)	1.479E+02	1.600E+02	---	DIET(1)
R018	Leafy vegetable consumption (kg/yr)	9.200E+00	1.400E+01	---	DIET(2)
R018	Milk consumption (L/yr)	1.164E+02	9.200E+01	---	DIET(3)
R018	Meat and poultry consumption (kg/yr)	4.600E+01	6.300E+01	---	DIET(4)
R018	Fish consumption (kg/yr)	5.300E+00	5.400E+00	---	DIET(5)
R018	Other seafood consumption (kg/yr)	9.000E-01	9.000E-01	---	DIET(6)
R018	Soil ingestion rate (g/yr)	4.380E+01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	5.100E+02	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	1.000E+00	1.000E+00	---	FDW
R018	Contamination fraction of household water	not used	1.000E+00	---	FHHW
R018	Contamination fraction of livestock water	1.000E+00	1.000E+00	---	FLW
R018	Contamination fraction of irrigation water	1.000E+00	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	5.000E-01	5.000E-01	---	FR9
R018	Contamination fraction of plant food	-1	-1	0.500E+00	FPLANT
R018	Contamination fraction of meat	-1	-1	0.420E+00	FMEAT
R018	Contamination fraction of milk	-1	-1	0.420E+00	FMILK
R019	Livestock fodder intake for meat (kg/day)	6.800E+01	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	5.500E+01	5.500E+01	---	LFI6
R019	Livestock water intake for meat (L/day)	5.000E+01	5.000E+01	---	LWI5
R019	Livestock water intake for milk (L/day)	1.600E+02	1.600E+02	---	LWI6
R019	Livestock soil intake (kg/day)	5.000E-01	5.000E-01	---	LSI
R019	Mass loading for foliar deposition (g/m**3)	1.000E-04	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	1.500E-01	1.500E-01	---	DM
R019	Depth of roots (m)	9.000E-01	9.000E-01	---	DROOT
R019	Drinking water fraction from ground water	1.000E+00	1.000E+00	---	FGWDW
R019	Household water fraction from ground water	not used	1.000E+00	---	FGWHH
R019	Livestock water fraction from ground water	1.000E+00	1.000E+00	---	FGWLW

R019	Irrigation fraction from ground water	1.000E+00	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	7.000E-01	7.000E-01	---	YV(1)
R19B	Wet weight crop yield for Leafy (kg/m**2)	1.500E+00	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	1.100E+00	1.100E+00	---	YV(3)
R19B	Growing Season for Non-Leafy (years)	1.700E-01	1.700E-01	---	TE(1)
R19B	Growing Season for Leafy (years)	2.500E-01	2.500E-01	---	TE(2)
R19B	Growing Season for Fodder (years)	8.000E-02	8.000E-02	---	TE(3)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R19B	Translocation Factor for Non-Leafy	1.000E-01	1.000E-01	---	TIV(1)
R19B	Translocation Factor for Leafy	1.000E+00	1.000E+00	---	TIV(2)
R19B	Translocation Factor for Fodder	1.000E+00	1.000E+00	---	TIV(3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	2.500E-01	2.500E-01	---	RDRY(1)
R19B	Dry Foliar Interception Fraction for Leafy	2.500E-01	2.500E-01	---	RDRY(2)
R19B	Dry Foliar Interception Fraction for Fodder	2.500E-01	2.500E-01	---	RDRY(3)
R19B	Wet Foliar Interception Fraction for Non-Leafy	2.500E-01	2.500E-01	---	RWET(1)
R19B	Wet Foliar Interception Fraction for Leafy	2.500E-01	2.500E-01	---	RWET(2)
R19B	Wet Foliar Interception Fraction for Fodder	2.500E-01	2.500E-01	---	RWET(3)
R19B	Weathering Removal Constant for Vegetation	2.000E+01	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm**3)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (1/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits non-leafy vegetables and grain	1.400E+01	1.400E+01	---	STOR_T(1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ

R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA(1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA(2)
TITL	Number of graphical time points	32	---	---	NPTS

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	1	---	---	KYMAX

Summary of Pathway Selections

Pathway	User Selection
1 -- external gamma	active
2 -- inhalation (w/o radon)	active
3 -- plant ingestion	active
4 -- meat ingestion	active
5 -- milk ingestion	active
6 -- aquatic foods	active
7 -- drinking water	active
8 -- soil ingestion	active
9 -- radon	suppressed
Find peak pathway doses	suppressed

Summary : Residual Dose and Risk Assessment for SEAD 12 Under Residential Receptor Scenar
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Contaminated Zone Dimensions		Initial Soil Concentrations pCi/g	
Area:	8404.00 square meters	Cs-137	1.000E+00
Thickness:	0.15 meters	H-3	1.000E+00
Cover Depth:	0.00 meters	Pb-210	1.000E+00
		Ra-226	1.000E+00
		Ra-228	1.000E+00
		Th-230	1.000E+00
		U-234	1.000E+00

Total Dose TDOSE(t) mrem/yr
Basic Radiation Dose Limit = 2.500E+01 mrem/yr
Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	1.700E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	8.953E+00	9.218E+00	9.262E+00	9.151E+00	7.484E+00	5.326E+00	3.661E+00	0.000E+00	0.000E+00
M(t):	3.581E-01	3.687E-01	3.705E-01	3.660E-01	2.994E-01	2.131E-01	1.465E-01	0.000E+00	0.000E+00

Maximum TDOSE(t): 9.262E+00 mrem/yr at t = 1.693 ñ 0.003 years

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.693E+00 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	9.156E-01	0.0989	5.941E-09	0.0000	0.000E+00	0.0000	2.465E-02	0.0027	2.604E-02	0.0028	1.597E-02	0.0017	1.515E-03	0.0002
H-3	0.000E+00	0.0000	3.757E-11	0.0000	0.000E+00	0.0000	1.744E-09	0.0000	4.697E-10	0.0000	4.942E-10	0.0000	1.143E-12	0.0000
Pb-210	1.817E-03	0.0002	4.234E-06	0.0000	0.000E+00	0.0000	8.795E-01	0.0950	6.372E-02	0.0069	5.831E-02	0.0063	2.161E-01	0.0233
Ra-226	2.959E+00	0.3194	1.982E-06	0.0000	0.000E+00	0.0000	7.503E-01	0.0810	2.887E-02	0.0031	5.971E-02	0.0064	5.735E-02	0.0062
Ra-228	2.447E+00	0.2643	3.262E-05	0.0000	0.000E+00	0.0000	5.842E-01	0.0631	2.085E-02	0.0023	4.664E-02	0.0050	4.748E-02	0.0051
Th-230	3.202E-03	0.0003	6.391E-05	0.0000	0.000E+00	0.0000	7.825E-03	0.0008	5.613E-04	0.0001	1.212E-04	0.0000	1.753E-02	0.0019
U-234	1.312E-04	0.0000	2.586E-05	0.0000	0.000E+00	0.0000	9.192E-03	0.0010	9.736E-04	0.0001	4.301E-03	0.0005	9.019E-03	0.0010
Total	6.327E+00	0.6831	1.286E-04	0.0000	0.000E+00	0.0000	2.256E+00	0.2435	1.410E-01	0.0152	1.850E-01	0.0200	3.490E-01	0.0377

Summary : Residual Dose and Risk Assessment for SEAD 12 Under Residential Receptor Scenar
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Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.693E+00 years

	Water Dependent Pathways													
	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.838E-01	0.1062
H-3	3.910E-03	0.0004	1.536E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.251E-05	0.0000	2.586E-04	0.0000	4.211E-03	0.0005
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.219E+00	0.1317
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.855E+00	0.4162
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.147E+00	0.3397
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.930E-02	0.0032
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.364E-02	0.0026
Total	3.910E-03	0.0004	1.536E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.251E-05	0.0000	2.586E-04	0.0000	9.262E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Residual Dose and Risk Assessment for SEAD 12 Under Residential Receptor Scenar
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Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	9.550E-01	0.1067	6.225E-09	0.0000	0.000E+00	0.0000	2.583E-02	0.0029	2.728E-02	0.0030	1.673E-02	0.0019	1.588E-03	0.0002
H-3	0.000E+00	0.0000	9.233E-06	0.0000	0.000E+00	0.0000	3.610E-04	0.0000	6.013E-05	0.0000	7.360E-05	0.0000	2.809E-07	0.0000
Pb-210	1.922E-03	0.0002	4.506E-06	0.0000	0.000E+00	0.0000	9.360E-01	0.1045	6.781E-02	0.0076	6.205E-02	0.0069	2.300E-01	0.0257
Ra-226	2.969E+00	0.3316	1.767E-06	0.0000	0.000E+00	0.0000	7.077E-01	0.0790	2.558E-02	0.0029	5.697E-02	0.0064	4.602E-02	0.0051
Ra-228	1.926E+00	0.2151	1.148E-05	0.0000	0.000E+00	0.0000	7.162E-01	0.0800	2.537E-02	0.0028	5.755E-02	0.0064	4.767E-02	0.0053
Th-230	1.034E-03	0.0001	6.437E-05	0.0000	0.000E+00	0.0000	7.345E-03	0.0008	5.454E-04	0.0001	7.928E-05	0.0000	1.761E-02	0.0020
U-234	1.314E-04	0.0000	2.606E-05	0.0000	0.000E+00	0.0000	9.264E-03	0.0010	9.811E-04	0.0001	4.335E-03	0.0005	9.090E-03	0.0010
Total	5.853E+00	0.6537	1.174E-04	0.0000	0.000E+00	0.0000	2.403E+00	0.2683	1.476E-01	0.0165	1.978E-01	0.0221	3.520E-01	0.0393

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years
Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.026E+00	0.1146
H-3	1.354E-05	0.0000	3.355E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.394E-07	0.0000	5.187E-04	0.0001
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.298E+00	0.1449
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.805E+00	0.4250
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.773E+00	0.3097
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.668E-02	0.0030
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.383E-02	0.0027
Total	1.354E-05	0.0000	3.355E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.394E-07	0.0000	8.953E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Residual Dose and Risk Assessment for SEAD 12 Under Residential Receptor Scenar
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Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years
Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	9.316E-01	0.1011	6.056E-09	0.0000	0.000E+00	0.0000	2.513E-02	0.0027	2.654E-02	0.0029	1.628E-02	0.0018	1.544E-03	0.0002
H-3	0.000E+00	0.0000	6.047E-09	0.0000	0.000E+00	0.0000	2.806E-07	0.0000	7.559E-08	0.0000	7.954E-08	0.0000	1.840E-10	0.0000
Pb-210	1.859E-03	0.0002	4.343E-06	0.0000	0.000E+00	0.0000	9.022E-01	0.0979	6.537E-02	0.0071	5.981E-02	0.0065	2.217E-01	0.0240
Ra-226	2.963E+00	0.3214	1.896E-06	0.0000	0.000E+00	0.0000	7.335E-01	0.0796	2.757E-02	0.0030	5.863E-02	0.0064	5.281E-02	0.0057
Ra-228	2.318E+00	0.2515	2.639E-05	0.0000	0.000E+00	0.0000	6.355E-01	0.0689	2.263E-02	0.0025	5.083E-02	0.0055	4.827E-02	0.0052
Th-230	2.316E-03	0.0003	6.410E-05	0.0000	0.000E+00	0.0000	7.624E-03	0.0008	5.544E-04	0.0001	1.038E-04	0.0000	1.756E-02	0.0019
U-234	1.313E-04	0.0000	2.594E-05	0.0000	0.000E+00	0.0000	9.222E-03	0.0010	9.767E-04	0.0001	4.315E-03	0.0005	9.048E-03	0.0010
Total	6.217E+00	0.6744	1.227E-04	0.0000	0.000E+00	0.0000	2.313E+00	0.2509	1.436E-01	0.0156	1.900E-01	0.0206	3.509E-01	0.0381

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years
Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.001E+00	0.1086
H-3	3.582E-03	0.0004	1.383E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.663E-05	0.0000	2.362E-04	0.0000	3.855E-03	0.0004
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.251E+00	0.1357
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.835E+00	0.4161
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.075E+00	0.3336
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.823E-02	0.0031
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.372E-02	0.0026
Total	3.582E-03	0.0004	1.383E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.663E-05	0.0000	2.362E-04	0.0000	9.218E+00	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.700E+00 years
Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	9.155E-01	0.0988	5.940E-09	0.0000	0.000E+00	0.0000	2.465E-02	0.0027	2.603E-02	0.0028	1.597E-02	0.0017	1.515E-03	0.0002
H-3	0.000E+00	0.0000	3.572E-11	0.0000	0.000E+00	0.0000	1.657E-09	0.0000	4.465E-10	0.0000	4.698E-10	0.0000	1.087E-12	0.0000
Pb-210	1.816E-03	0.0002	4.233E-06	0.0000	0.000E+00	0.0000	8.793E-01	0.0949	6.370E-02	0.0069	5.829E-02	0.0063	2.160E-01	0.0233
Ra-226	2.959E+00	0.3194	1.983E-06	0.0000	0.000E+00	0.0000	7.505E-01	0.0810	2.888E-02	0.0031	5.972E-02	0.0064	5.740E-02	0.0062
Ra-228	2.448E+00	0.2643	3.267E-05	0.0000	0.000E+00	0.0000	5.837E-01	0.0630	2.084E-02	0.0022	4.660E-02	0.0050	4.747E-02	0.0051
Th-230	3.211E-03	0.0003	6.391E-05	0.0000	0.000E+00	0.0000	7.827E-03	0.0008	5.614E-04	0.0001	1.214E-04	0.0000	1.753E-02	0.0019
U-234	1.312E-04	0.0000	2.586E-05	0.0000	0.000E+00	0.0000	9.192E-03	0.0010	9.735E-04	0.0001	4.301E-03	0.0005	9.019E-03	0.0010
Total	6.327E+00	0.6832	1.287E-04	0.0000	0.000E+00	0.0000	2.255E+00	0.2435	1.410E-01	0.0152	1.850E-01	0.0200	3.490E-01	0.0377

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.700E+00 years
Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.837E-01	0.1062
H-3	3.909E-03	0.0004	1.536E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.250E-05	0.0000	2.585E-04	0.0000	4.210E-03	0.0005
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.219E+00	0.1316
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.855E+00	0.4162
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.147E+00	0.3398
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.931E-02	0.0032
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.364E-02	0.0026
Total	3.909E-03	0.0004	1.536E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.250E-05	0.0000	2.585E-04	0.0000	9.262E+00	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years
Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	8.863E-01	0.0969	5.730E-09	0.0000	0.000E+00	0.0000	2.378E-02	0.0026	2.511E-02	0.0027	1.540E-02	0.0017	1.461E-03	0.0002
H-3	0.000E+00	0.0000	2.594E-15	0.0000	0.000E+00	0.0000	1.204E-13	0.0000	3.242E-14	0.0000	3.411E-14	0.0000	7.892E-17	0.0000
Pb-210	1.740E-03	0.0002	4.035E-06	0.0000	0.000E+00	0.0000	8.381E-01	0.0916	6.073E-02	0.0066	5.557E-02	0.0061	2.059E-01	0.0225
Ra-226	2.951E+00	0.3224	2.138E-06	0.0000	0.000E+00	0.0000	7.806E-01	0.0853	3.122E-02	0.0034	6.166E-02	0.0067	6.556E-02	0.0072
Ra-228	2.488E+00	0.2719	3.833E-05	0.0000	0.000E+00	0.0000	4.980E-01	0.0544	1.784E-02	0.0019	3.964E-02	0.0043	4.438E-02	0.0049
Th-230	4.867E-03	0.0005	6.356E-05	0.0000	0.000E+00	0.0000	8.214E-03	0.0009	5.752E-04	0.0001	1.548E-04	0.0000	1.747E-02	0.0019
U-234	1.311E-04	0.0000	2.570E-05	0.0000	0.000E+00	0.0000	9.137E-03	0.0010	9.677E-04	0.0001	4.275E-03	0.0005	8.965E-03	0.0010
Total	6.332E+00	0.6920	1.338E-04	0.0000	0.000E+00	0.0000	2.158E+00	0.2358	1.364E-01	0.0149	1.767E-01	0.0193	3.438E-01	0.0376

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years
Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.521E-01	0.1040
H-3	3.643E-03	0.0004	1.431E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.961E-05	0.0000	2.410E-04	0.0000	3.924E-03	0.0004
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.162E+00	0.1270
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.890E+00	0.4251
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.088E+00	0.3375
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.134E-02	0.0034
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.350E-02	0.0026
Total	3.643E-03	0.0004	1.431E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.961E-05	0.0000	2.410E-04	0.0000	9.151E+00	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+01 years
Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	7.443E-01	0.0995	4.720E-09	0.0000	0.000E+00	0.0000	1.959E-02	0.0026	2.069E-02	0.0028	1.269E-02	0.0017	1.204E-03	0.0002
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	1.379E-03	0.0002	3.116E-06	0.0000	0.000E+00	0.0000	6.473E-01	0.0865	4.690E-02	0.0063	4.292E-02	0.0057	1.591E-01	0.0213
Ra-226	2.907E+00	0.3884	2.830E-06	0.0000	0.000E+00	0.0000	9.136E-01	0.1221	4.166E-02	0.0056	7.016E-02	0.0094	1.023E-01	0.0137
Ra-228	1.432E+00	0.1914	2.574E-05	0.0000	0.000E+00	0.0000	2.094E-01	0.0280	7.564E-03	0.0010	1.657E-02	0.0022	2.224E-02	0.0030
Th-230	1.364E-02	0.0018	6.169E-05	0.0000	0.000E+00	0.0000	1.051E-02	0.0014	6.680E-04	0.0001	3.479E-04	0.0000	1.720E-02	0.0023
U-234	1.310E-04	0.0000	2.487E-05	0.0000	0.000E+00	0.0000	8.841E-03	0.0012	9.364E-04	0.0001	4.137E-03	0.0006	8.676E-03	0.0012
Total	5.099E+00	0.6813	1.183E-04	0.0000	0.000E+00	0.0000	1.809E+00	0.2418	1.184E-01	0.0158	1.468E-01	0.0196	3.107E-01	0.0415

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+01 years
Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.985E-01	0.1067
H-3	3.123E-21	0.0000	1.393E-26	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.047E-23	0.0000	2.112E-22	0.0000	3.385E-21	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.976E-01	0.1199
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.035E+00	0.5391
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.688E+00	0.2255
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.243E-02	0.0057
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.275E-02	0.0030
Total	3.123E-21	0.0000	1.393E-26	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.047E-23	0.0000	2.112E-22	0.0000	7.484E+00	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years
Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	4.504E-01	0.0846	2.698E-09	0.0000	0.000E+00	0.0000	1.120E-02	0.0021	1.183E-02	0.0022	7.252E-03	0.0014	6.881E-04	0.0001
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	7.084E-04	0.0001	1.483E-06	0.0000	0.000E+00	0.0000	3.080E-01	0.0578	2.231E-02	0.0042	2.042E-02	0.0038	7.567E-02	0.0142
Ra-226	2.776E+00	0.5213	3.861E-06	0.0000	0.000E+00	0.0000	1.097E+00	0.2060	5.726E-02	0.0108	8.144E-02	0.0153	1.588E-01	0.0298
Ra-228	1.308E-01	0.0246	2.291E-06	0.0000	0.000E+00	0.0000	1.722E-02	0.0032	6.229E-04	0.0001	1.360E-03	0.0003	1.893E-03	0.0004
Th-230	3.727E-02	0.0070	5.638E-05	0.0000	0.000E+00	0.0000	1.810E-02	0.0034	1.032E-03	0.0002	9.567E-04	0.0002	1.684E-02	0.0032
U-234	1.332E-04	0.0000	2.254E-05	0.0000	0.000E+00	0.0000	8.011E-03	0.0015	8.483E-04	0.0002	3.747E-03	0.0007	7.861E-03	0.0015
Total	3.396E+00	0.6375	8.655E-05	0.0000	0.000E+00	0.0000	1.460E+00	0.2741	9.391E-02	0.0176	1.152E-01	0.0216	2.618E-01	0.0491

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years
Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.814E-01	0.0904
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.271E-01	0.0802
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.171E+00	0.7831
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.519E-01	0.0285
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.425E-02	0.0139
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.062E-02	0.0039
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.326E+00	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years
Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	7.319E-02	0.0200	3.523E-10	0.0000	0.000E+00	0.0000	1.462E-03	0.0004	1.544E-03	0.0004	9.470E-04	0.0003	8.984E-05	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	6.708E-05	0.0000	1.017E-07	0.0000	0.000E+00	0.0000	2.113E-02	0.0058	1.531E-03	0.0004	1.401E-03	0.0004	5.193E-03	0.0014
Ra-226	2.228E+00	0.6084	3.372E-06	0.0000	0.000E+00	0.0000	8.942E-01	0.2442	5.021E-02	0.0137	6.499E-02	0.0178	1.470E-01	0.0402
Ra-228	2.331E-05	0.0000	3.355E-10	0.0000	0.000E+00	0.0000	2.520E-06	0.0000	9.118E-08	0.0000	1.990E-07	0.0000	2.772E-07	0.0000
Th-230	9.913E-02	0.0271	3.804E-05	0.0000	0.000E+00	0.0000	3.789E-02	0.0103	2.110E-03	0.0006	2.524E-03	0.0007	1.542E-02	0.0042
U-234	1.618E-04	0.0000	1.475E-05	0.0000	0.000E+00	0.0000	5.252E-03	0.0014	5.554E-04	0.0002	2.450E-03	0.0007	5.146E-03	0.0014
Total	2.400E+00	0.6555	5.627E-05	0.0000	0.000E+00	0.0000	9.600E-01	0.2622	5.595E-02	0.0153	7.231E-02	0.0198	1.729E-01	0.0472

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years
Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.723E-02	0.0211
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.933E-02	0.0080
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.384E+00	0.9243
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.640E-05	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.571E-01	0.0429
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.358E-02	0.0037
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.661E+00	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years
Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years
Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years
Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

Total Dose Contributions TDOSE(ipt) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years
Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

*Sum of all water independent and dependent pathways.

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(jt) At Time in Years (mrem/yr)/(pCi/g) 0.000E+00	1.000E+00	1.700E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Cs-137+D	Cs-137+D	1.000E+00	1.026E+00	1.001E+00	9.837E-01	9.521E-01	7.985E-01	4.814E-01	7.723E-02	0.000E+00	0.000E+00
0H-3	H-3	1.000E+00	5.187E-04	3.855E-03	4.210E-03	3.924E-03	3.385E-21	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0Pb-210+D	Pb-210+D	1.000E+00	1.298E+00	1.251E+00	1.219E+00	1.162E+00	8.976E-01	4.271E-01	2.933E-02	0.000E+00	0.000E+00
0Ra-226+D	Ra-226+D	1.000E+00	3.782E+00	3.772E+00	3.765E+00	3.752E+00	3.683E+00	3.479E+00	2.688E+00	0.000E+00	0.000E+00
Ra-226+D	Pb-210+D	1.000E+00	2.334E-02	6.327E-02	8.990E-02	1.373E-01	3.520E-01	6.921E-01	6.963E-01	0.000E+00	0.000E+00
Ra-226+D	-DSR(j)		3.805E+00	3.835E+00	3.855E+00	3.890E+00	4.035E+00	4.171E+00	3.384E+00	0.000E+00	0.000E+00
0Ra-228+D	Ra-228+D	1.000E+00	2.366E+00	2.092E+00	1.919E+00	1.636E+00	6.911E-01	5.874E-02	9.909E-06	0.000E+00	0.000E+00
Ra-228+D	Th-228+D	1.000E+00	4.071E-01	9.831E-01	1.227E+00	1.452E+00	9.969E-01	9.318E-02	1.649E-05	0.000E+00	0.000E+00
Ra-228+D	-DSR(j)		2.773E+00	3.075E+00	3.147E+00	3.088E+00	1.688E+00	1.519E-01	2.640E-05	0.000E+00	0.000E+00
0Th-230	Th-230	1.000E+00	2.587E-02	2.576E-02	2.569E-02	2.555E-02	2.481E-02	2.269E-02	1.537E-02	0.000E+00	0.000E+00
Th-230	Ra-226+D	1.000E+00	8.078E-04	2.439E-03	3.577E-03	5.680E-03	1.677E-02	4.622E-02	1.192E-01	0.000E+00	0.000E+00
Th-230	Pb-210+D	1.000E+00	3.620E-06	2.251E-05	4.565E-05	1.093E-04	8.547E-04	5.349E-03	2.255E-02	0.000E+00	0.000E+00
Th-230	-DSR(j)		2.668E-02	2.823E-02	2.931E-02	3.134E-02	4.243E-02	7.425E-02	1.571E-01	0.000E+00	0.000E+00
0U-234	U-234	1.000E+00	2.383E-02	2.372E-02	2.364E-02	2.350E-02	2.274E-02	2.061E-02	1.350E-02	0.000E+00	0.000E+00
U-234	Th-230	1.000E+00	1.201E-07	3.521E-07	5.128E-07	8.087E-07	2.344E-06	6.193E-06	1.362E-05	0.000E+00	0.000E+00
U-234	Ra-226+D	1.000E+00	2.403E-09	1.699E-08	3.589E-08	8.986E-08	7.920E-07	6.328E-06	5.349E-05	0.000E+00	0.000E+00
U-234	Pb-210+D	1.000E+00	8.578E-12	1.132E-10	3.231E-10	1.200E-09	2.793E-08	5.278E-07	8.164E-06	0.000E+00	0.000E+00
U-234	-DSR(j)		2.383E-02	2.372E-02	2.364E-02	2.350E-02	2.275E-02	2.062E-02	1.358E-02	0.000E+00	0.000E+00

The DSR includes contributions from associated (half-life ó 180 days) daughters.

Single Radionuclide Soil Guidelines G(it) in pCi/g
Basic Radiation Dose Limit = 2.500E+01 mrem/yr

Nuclide (i)	t= 0.000E+00	1.000E+00	1.700E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Cs-137	2.436E+01	2.497E+01	2.542E+01	2.626E+01	3.131E+01	5.194E+01	3.237E+02	*8.704E+13	*8.704E+13
H-3	4.820E+04	6.485E+03	5.939E+03	6.372E+03	*9.597E+15	*9.597E+15	*9.597E+15	*9.597E+15	*9.597E+15
Pb-210	1.926E+01	1.999E+01	2.051E+01	2.151E+01	2.785E+01	5.854E+01	8.525E+02	*7.634E+13	*7.634E+13
Ra-226	6.570E+00	6.518E+00	6.485E+00	6.427E+00	6.196E+00	5.993E+00	7.388E+00	*9.885E+11	*9.885E+11
Ra-228	9.015E+00	8.130E+00	7.944E+00	8.095E+00	1.481E+01	1.646E+02	9.470E+05	*2.726E+14	*2.726E+14
Th-230	9.370E+02	8.857E+02	8.529E+02	7.977E+02	5.892E+02	3.367E+02	1.591E+02	*2.018E+10	*2.018E+10
U-234	1.049E+03	1.054E+03	1.057E+03	1.064E+03	1.099E+03	1.212E+03	1.841E+03	*6.247E+09	*6.247E+09

*At specific activity limit

Summary : Residual Dose and Risk Assessment for SEAD 12 Under Residential Receptor Scenar
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Summed Dose/Source Ratios DSR(it) in (mrem/yr)/(pCi/g)
and Single Radionuclide Soil Guidelines G(it) in pCi/g
at tmin = time of minimum single radionuclide soil guideline
and at tmax = time of maximum total dose = 1.693 ñ 0.003 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(itmin)	G(itmin) (pCi/g)	DSR(itmax)	G(itmax) (pCi/g)
Cs-137	1.000E+00	0.000E+00	1.026E+00	2.436E+01	9.838E-01	2.541E+01
H-3	1.000E+00	1.379 ñ 0.003	4.257E-03	5.873E+03	4.211E-03	5.937E+03
Pb-210	1.000E+00	0.000E+00	1.298E+00	1.926E+01	1.219E+00	2.050E+01
Ra-226	1.000E+00	28.88 ñ 0.06	4.172E+00	5.993E+00	3.855E+00	6.485E+00
Ra-228	1.000E+00	1.967 ñ 0.004	3.152E+00	7.931E+00	3.147E+00	7.945E+00
Th-230	1.000E+00	140.0 ñ 0.3	1.716E-01	1.457E+02	2.930E-02	8.532E+02
U-234	1.000E+00	0.000E+00	2.383E-02	1.049E+03	2.364E-02	1.057E+03

Summary : Residual Dose and Risk Assessment for SEAD 12 Under Residential Receptor Scenar
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Individual Nuclide Dose Summed Over All Pathways
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(jt) mrem/yr t= 0.000E+00	1.000E+00	1.700E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Cs-137	Cs-137	1.000E+00	1.026E+00	1.001E+00	9.837E-01	9.521E-01	7.985E-01	4.814E-01	7.723E-02	0.000E+00	0.000E+00
0H-3	H-3	1.000E+00	5.187E-04	3.855E-03	4.210E-03	3.924E-03	3.385E-21	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0Pb-210	Pb-210	1.000E+00	1.298E+00	1.251E+00	1.219E+00	1.162E+00	8.976E-01	4.271E-01	2.933E-02	0.000E+00	0.000E+00
Pb-210	Ra-226	1.000E+00	2.334E-02	6.327E-02	8.990E-02	1.373E-01	3.520E-01	6.921E-01	6.963E-01	0.000E+00	0.000E+00
Pb-210	Th-230	1.000E+00	3.620E-06	2.251E-05	4.565E-05	1.093E-04	8.547E-04	5.349E-03	2.255E-02	0.000E+00	0.000E+00
Pb-210	U-234	1.000E+00	8.578E-12	1.132E-10	3.231E-10	1.200E-09	2.793E-08	5.278E-07	8.164E-06	0.000E+00	0.000E+00
Pb-210	-DOSE(j)		1.321E+00	1.314E+00	1.309E+00	1.300E+00	1.250E+00	1.125E+00	7.482E-01	0.000E+00	0.000E+00
0Ra-226	Ra-226	1.000E+00	3.782E+00	3.772E+00	3.765E+00	3.752E+00	3.683E+00	3.479E+00	2.688E+00	0.000E+00	0.000E+00
Ra-226	Th-230	1.000E+00	8.078E-04	2.439E-03	3.577E-03	5.680E-03	1.677E-02	4.622E-02	1.192E-01	0.000E+00	0.000E+00
Ra-226	U-234	1.000E+00	2.403E-09	1.699E-08	3.589E-08	8.986E-08	7.920E-07	6.328E-06	5.349E-05	0.000E+00	0.000E+00
Ra-226	-DOSE(j)		3.783E+00	3.774E+00	3.769E+00	3.758E+00	3.700E+00	3.525E+00	2.807E+00	0.000E+00	0.000E+00
0Ra-228	Ra-228	1.000E+00	2.366E+00	2.092E+00	1.919E+00	1.636E+00	6.911E-01	5.874E-02	9.909E-06	0.000E+00	0.000E+00
0Th-228	Ra-228	1.000E+00	4.071E-01	9.831E-01	1.227E+00	1.452E+00	9.969E-01	9.318E-02	1.649E-05	0.000E+00	0.000E+00
0Th-230	Th-230	1.000E+00	2.587E-02	2.576E-02	2.569E-02	2.555E-02	2.481E-02	2.269E-02	1.537E-02	0.000E+00	0.000E+00
Th-230	U-234	1.000E+00	1.201E-07	3.521E-07	5.128E-07	8.087E-07	2.344E-06	6.193E-06	1.362E-05	0.000E+00	0.000E+00
Th-230	-DOSE(j)		2.587E-02	2.576E-02	2.569E-02	2.555E-02	2.481E-02	2.269E-02	1.538E-02	0.000E+00	0.000E+00
U-234	U-234	1.000E+00	2.383E-02	2.372E-02	2.364E-02	2.350E-02	2.274E-02	2.061E-02	1.350E-02	0.000E+00	0.000E+00

THF(i) is the thread fraction of the parent nuclide.

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

0Nuclide (j)	Parent (i)	THF(i)	S(jt) pCi/g t= 0.000E+00	1.000E+00	1.700E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Cs-137	Cs-137	1.000E+00	1.000E+00	9.767E-01	9.607E-01	9.317E-01	7.898E-01	4.927E-01	9.444E-02	8.422E-04	5.642E-11
0H-3	H-3	1.000E+00	1.000E+00	6.576E-04	3.895E-06	2.843E-10	1.511E-32	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0Pb-210	Pb-210	1.000E+00	1.000E+00	9.677E-01	9.458E-01	9.063E-01	7.205E-01	3.740E-01	3.768E-02	5.349E-05	5.767E-15
Pb-210	Ra-226	1.000E+00	0.000E+00	3.057E-02	5.137E-02	8.874E-02	2.643E-01	5.880E-01	8.772E-01	8.205E-01	5.638E-01
Pb-210	Th-230	1.000E+00	0.000E+00	6.658E-06	1.909E-05	5.861E-05	6.039E-04	4.445E-03	2.820E-02	1.006E-01	2.841E-01
Pb-210	U-234	1.000E+00	0.000E+00	2.003E-11	9.783E-11	5.318E-10	1.859E-08	4.296E-07	1.014E-05	1.208E-04	1.148E-03
Pb-210	-S(j):		1.000E+00	9.983E-01	9.972E-01	9.951E-01	9.853E-01	9.664E-01	9.431E-01	9.213E-01	8.490E-01
0Ra-226	Ra-226	1.000E+00	1.000E+00	9.995E-01	9.991E-01	9.984E-01	9.947E-01	9.840E-01	9.478E-01	8.514E-01	5.849E-01
Ra-226	Th-230	1.000E+00	0.000E+00	4.331E-04	7.360E-04	1.298E-03	4.317E-03	1.286E-02	4.182E-02	1.169E-01	3.059E-01
Ra-226	U-234	1.000E+00	0.000E+00	1.949E-09	5.631E-09	1.753E-08	1.941E-07	1.732E-06	1.868E-05	1.542E-04	1.272E-03
Ra-226	-S(j):		1.000E+00	9.999E-01	9.998E-01	9.997E-01	9.990E-01	9.969E-01	9.896E-01	9.685E-01	8.922E-01
0Ra-228	Ra-228	1.000E+00	1.000E+00	8.863E-01	8.146E-01	6.963E-01	2.992E-01	2.680E-02	5.757E-06	1.908E-16	0.000E+00
0Th-228	Ra-228	1.000E+00	0.000E+00	2.853E-01	4.114E-01	5.383E-01	4.086E-01	4.014E-02	8.631E-06	2.861E-16	0.000E+00
0Th-230	Th-230	1.000E+00	1.000E+00	9.998E-01	9.997E-01	9.995E-01	9.983E-01	9.949E-01	9.831E-01	9.501E-01	8.431E-01
Th-230	U-234	1.000E+00	0.000E+00	8.998E-06	1.529E-05	2.697E-05	8.968E-05	2.670E-04	8.667E-04	2.411E-03	6.203E-03
Th-230	-S(j):		1.000E+00	9.998E-01	9.997E-01	9.995E-01	9.984E-01	9.952E-01	9.839E-01	9.525E-01	8.493E-01
0U-234	U-234	1.000E+00	1.000E+00	9.994E-01	9.990E-01	9.982E-01	9.941E-01	9.825E-01	9.428E-01	8.381E-01	5.551E-01

THF(i) is the thread fraction of the parent nuclide.
RESCALC.EXE execution time = 0.50 seconds

Intrisk : Residual Dose and Risk Assessment for SEAD 12 Under Residential Receptor Scenar
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Cancer Risk Slope Factors Summary Table
Risk Library: FGR 13 Morbidity

Menu	Parameter	Current Value	Base Case*	Parameter Name
Sf-1	Ground external radiation slope factors, 1/yr per (pCi/g):			
Sf-1	Cs-137+D	2.55E-06	5.32E-10	SLPF(1,1)
Sf-1	H-3	0.00E+00	0.00E+00	SLPF(2,1)
Sf-1	Pb-210+D	4.21E-09	1.41E-09	SLPF(3,1)
Sf-1	Ra-226+D	8.49E-06	2.29E-08	SLPF(4,1)
Sf-1	Ra-228+D	4.53E-06	0.00E+00	SLPF(5,1)
Sf-1	Th-228+D	7.76E-06	5.59E-09	SLPF(6,1)
Sf-1	Th-230	8.19E-10	8.19E-10	SLPF(7,1)
Sf-1	U-234	2.52E-10	2.52E-10	SLPF(8,1)
Sf-2	Inhalation, slope factors, 1/(pCi):			
Sf-2	Cs-137+D	1.12E-10	1.12E-10	SLPF(1,2)
Sf-2	H-3	8.51E-13	8.51E-13	SLPF(2,2)
Sf-2	Pb-210+D	3.08E-08	1.58E-08	SLPF(3,2)
Sf-2	Ra-226+D	2.83E-08	2.82E-08	SLPF(4,2)
Sf-2	Ra-228+D	4.37E-08	4.37E-08	SLPF(5,2)
Sf-2	Th-228+D	1.44E-07	1.32E-07	SLPF(6,2)
Sf-2	Th-230	3.40E-08	3.40E-08	SLPF(7,2)
Sf-2	U-234	2.78E-08	2.78E-08	SLPF(8,2)
Sf-3	Food ingestion, slope factors, 1/(pCi):			
Sf-3	Cs-137+D	3.74E-11	3.74E-11	SLPF(1,3)
Sf-3	H-3	1.44E-13	1.44E-13	SLPF(2,3)
Sf-3	Pb-210+D	3.44E-09	1.18E-09	SLPF(3,3)
Sf-3	Ra-226+D	5.15E-10	5.14E-10	SLPF(4,3)
Sf-3	Ra-228+D	1.43E-09	1.43E-09	SLPF(5,3)
Sf-3	Th-228+D	4.22E-10	1.48E-10	SLPF(6,3)
Sf-3	Th-230	1.19E-10	1.19E-10	SLPF(7,3)
Sf-3	U-234	9.55E-11	9.55E-11	SLPF(8,3)
Sf-3	Water ingestion, slope factors, 1/(pCi):			
Sf-3	Cs-137+D	3.04E-11	3.04E-11	SLPF(1,4)
Sf-3	H-3	1.12E-13	1.12E-13	SLPF(2,4)
Sf-3	Pb-210+D	2.66E-09	8.81E-10	SLPF(3,4)
Sf-3	Ra-226+D	3.86E-10	3.85E-10	SLPF(4,4)
Sf-3	Ra-228+D	1.04E-09	1.04E-09	SLPF(5,4)
Sf-3	Th-228+D	2.99E-10	1.07E-10	SLPF(6,4)
Sf-3	Th-230	9.10E-11	9.10E-11	SLPF(7,4)
Sf-3	U-234	7.07E-11	7.07E-11	SLPF(8,4)
Sf-3	Soil ingestion, slope factors, 1/(pCi):			

Sf-3	Cs-137+D	3.74E-11	3.74E-11	SLPF(1,5)
Sf-3	H-3	1.44E-13	1.44E-13	SLPF(2,5)
Sf-3	Pb-210+D	3.44E-09	1.18E-09	SLPF(3,5)
Sf-3	Ra-226+D	5.15E-10	5.14E-10	SLPF(4,5)
Sf-3	Ra-228+D	1.43E-09	1.43E-09	SLPF(5,5)
Sf-3	Th-228+D	4.22E-10	1.48E-10	SLPF(6,5)
Sf-3	Th-230	1.19E-10	1.19E-10	SLPF(7,5)
Sf-3	U-234	9.55E-11	9.55E-11	SLPF(8,5)

Cancer Risk Slope Factors Summary Table (continued)
Risk Library: FGR 13 Morbidity

Menu	Parameter	Current Value	Base Case*	Parameter Name
Sf-Rn	Radon Inhalation slope factors, 1/(pCi):			
Sf-Rn	Rn-222	1.80E-12	1.80E-12	SLPFRN(1,1)
Sf-Rn	Po-218	3.70E-12	3.70E-12	SLPFRN(1,2)
Sf-Rn	Pb-214	6.20E-12	6.20E-12	SLPFRN(1,3)
Sf-Rn	Bi-214	1.50E-11	1.50E-11	SLPFRN(1,4)
Sf-Rn	Rn-220	1.90E-13	1.90E-13	SLPFRN(2,1)
Sf-Rn	Po-216	3.00E-15	3.00E-15	SLPFRN(2,2)
Sf-Rn	Pb-212	3.90E-11	3.90E-11	SLPFRN(2,3)
Sf-Rn	Bi-212	3.70E-11	3.70E-11	SLPFRN(2,4)
Sf-Rn	Radon K factors, (mrem/WLM):			
Sf-Rn	Rn-222 Indoor	7.60E+02	7.60E+02	KFACTR(1,1)
Sf-Rn	Rn-222 Outdoor	5.70E+02	5.70E+02	KFACTR(1,2)
Sf-Rn	Rn-220 Indoor	1.50E+02	1.50E+02	KFACTR(2,1)
Sf-Rn	Rn-220 Outdoor	2.50E+02	2.50E+02	KFACTR(2,2)

*Base Case means Default.Lib w/o Associate Nuclide contributions.

Risk Slope and Environmental Transport Factors for the Ground Pathway

Nuclide (i)	Slope(i)*	ETFG(i,t) At Time in Years (dimensionless)								
	t=	0.000E+00	1.000E+00	1.700E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ac-228	4.530E-06	2.718E-01	2.714E-01	2.711E-01	2.706E-01	2.678E-01	2.589E-01	2.170E-01	0.000E+00	0.000E+00
At-218	3.570E-09	3.302E-01	3.302E-01	3.302E-01	3.303E-01	3.305E-01	3.310E-01	3.303E-01	0.000E+00	0.000E+00
Ba-137m	2.690E-06	2.834E-01	2.830E-01	2.828E-01	2.823E-01	2.797E-01	2.713E-01	2.302E-01	0.000E+00	0.000E+00
Bi-210	2.760E-09	3.110E-01	3.108E-01	3.106E-01	3.104E-01	3.087E-01	3.033E-01	2.719E-01	0.000E+00	0.000E+00
Bi-212	8.870E-07	2.741E-01	2.737E-01	2.734E-01	2.729E-01	2.700E-01	2.611E-01	2.188E-01	0.000E+00	0.000E+00
Bi-214	7.480E-06	2.613E-01	2.609E-01	2.606E-01	2.600E-01	2.570E-01	2.476E-01	2.049E-01	0.000E+00	0.000E+00
Cs-137	5.320E-10	3.191E-01	3.190E-01	3.189E-01	3.187E-01	3.175E-01	3.136E-01	2.883E-01	0.000E+00	0.000E+00
H-3	0.000E+00	3.420E-01	3.420E-01	3.420E-01	3.420E-01	3.420E-01	3.420E-01	3.420E-01	3.420E-01	3.420E-01
Pb-210	1.410E-09	3.342E-01	3.342E-01	3.342E-01	3.342E-01	3.343E-01	3.345E-01	3.346E-01	0.000E+00	0.000E+00
Pb-212	5.090E-07	3.079E-01	3.077E-01	3.075E-01	3.072E-01	3.055E-01	2.997E-01	2.663E-01	0.000E+00	0.000E+00
Pb-214	9.820E-07	2.973E-01	2.970E-01	2.968E-01	2.964E-01	2.941E-01	2.870E-01	2.491E-01	0.000E+00	0.000E+00
Po-210	3.950E-11	2.786E-01	2.782E-01	2.780E-01	2.775E-01	2.747E-01	2.660E-01	2.241E-01	0.000E+00	0.000E+00
Po-212	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Po-214	3.860E-10	2.769E-01	2.766E-01	2.763E-01	2.758E-01	2.731E-01	2.644E-01	2.229E-01	0.000E+00	0.000E+00
Po-216	7.870E-11	2.772E-01	2.768E-01	2.765E-01	2.760E-01	2.732E-01	2.645E-01	2.228E-01	0.000E+00	0.000E+00
Po-218	4.260E-11	2.770E-01	2.766E-01	2.764E-01	2.759E-01	2.731E-01	2.644E-01	2.226E-01	0.000E+00	0.000E+00
Ra-224	3.720E-08	3.058E-01	3.056E-01	3.054E-01	3.051E-01	3.032E-01	2.970E-01	2.619E-01	0.000E+00	0.000E+00
Ra-226	2.290E-08	3.096E-01	3.094E-01	3.092E-01	3.089E-01	3.072E-01	3.017E-01	2.690E-01	0.000E+00	0.000E+00
Ra-228	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Rn-220	1.700E-09	2.857E-01	2.853E-01	2.851E-01	2.846E-01	2.820E-01	2.738E-01	2.331E-01	0.000E+00	0.000E+00
Rn-222	1.740E-09	2.868E-01	2.864E-01	2.862E-01	2.857E-01	2.832E-01	2.751E-01	2.346E-01	0.000E+00	0.000E+00
Th-228	5.590E-09	3.173E-01	3.172E-01	3.170E-01	3.168E-01	3.156E-01	3.115E-01	2.844E-01	0.000E+00	0.000E+00
Th-230	8.190E-10	3.233E-01	3.232E-01	3.232E-01	3.230E-01	3.224E-01	3.200E-01	3.010E-01	0.000E+00	0.000E+00
Tl-208	1.760E-05	2.436E-01	2.432E-01	2.429E-01	2.423E-01	2.391E-01	2.295E-01	1.873E-01	0.000E+00	0.000E+00
Tl-210	0.000E+00	3.420E-01	3.420E-01	3.420E-01	3.420E-01	3.420E-01	3.420E-01	3.420E-01	3.420E-01	3.420E-01
U-234	2.520E-10	3.272E-01	3.271E-01	3.271E-01	3.270E-01	3.265E-01	3.247E-01	3.097E-01	0.000E+00	0.000E+00

* - Units are 1/yr per (pCi/g) at infinite depth and area. Multiplication by ETFG(i,t) converts to site conditions.

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 0.000E+00 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Cs-137	1.979E-04	5.237E+02	5.530E+02	3.392E+02	3.219E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.448E+03
H-3	1.058E+03	3.742E+04	3.649E+03	5.629E+03	3.219E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.673E+04
Pb-210	1.979E-04	1.310E+02	9.489E+00	8.685E+00	3.219E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.814E+02
Ra-226	1.979E-04	5.237E+02	1.843E+01	4.240E+01	3.219E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.168E+02
Ra-228	1.979E-04	5.237E+02	1.843E+01	4.240E+01	3.219E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.168E+02
Th-228	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	1.979E-04	1.317E+01	9.889E-01	1.246E-01	3.219E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.647E+01
U-234	1.979E-04	3.280E+01	3.474E+00	1.535E+01	3.219E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.382E+01

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 0.000E+00 years

Radon Pathway	Radionuclides							
	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 0.000E+00 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	2.164E-05	0.1181	6.648E-13	0.0000	5.876E-07	0.0032	6.204E-07	0.0034	3.806E-07	0.0021	3.612E-08	0.0002
H-3	0.000E+00	0.0000	2.701E-08	0.0001	1.616E-07	0.0009	1.576E-08	0.0001	2.432E-08	0.0001	1.391E-10	0.0000
Pb-210	4.022E-08	0.0002	1.826E-10	0.0000	1.353E-05	0.0738	9.801E-07	0.0053	8.971E-07	0.0049	3.325E-06	0.0181
Ra-226	6.762E-05	0.3689	1.678E-10	0.0000	8.088E-06	0.0441	2.846E-07	0.0016	6.548E-07	0.0036	4.971E-07	0.0027
Ra-228	3.694E-05	0.2015	2.597E-10	0.0000	2.251E-05	0.1228	7.924E-07	0.0043	1.823E-06	0.0099	1.384E-06	0.0076
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	7.943E-09	0.0000	2.018E-10	0.0000	4.701E-08	0.0003	3.530E-09	0.0000	4.447E-10	0.0000	1.149E-07	0.0006
U-234	2.473E-09	0.0000	1.650E-10	0.0000	9.399E-08	0.0005	9.953E-09	0.0001	4.399E-08	0.0002	9.223E-08	0.0005

Total	1.262E-04	0.6888	2.799E-08	0.0002	4.502E-05	0.2457	2.707E-06	0.0148	3.824E-06	0.0209	5.450E-06	0.0297

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 0.000E+00 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All Pathways** risk	All Pathways** fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.326E-05	0.1269
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.289E-07	0.0012
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.877E-05	0.1024
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.714E-05	0.4209
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.345E-05	0.3462
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.741E-07	0.0009
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.428E-07	0.0013
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.833E-04	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 0.000E+00 years
Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 0.000E+00 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	2.164E-05	0.1181	6.648E-13	0.0000	0.000E+00	0.0000	5.876E-07	0.0032	6.204E-07	0.0034	3.806E-07	0.0021	3.612E-08	0.0002
H-3	0.000E+00	0.0000	2.701E-08	0.0001	0.000E+00	0.0000	1.616E-07	0.0009	1.576E-08	0.0001	2.432E-08	0.0001	1.391E-10	0.0000
Pb-210	4.022E-08	0.0002	1.826E-10	0.0000	0.000E+00	0.0000	1.353E-05	0.0738	9.801E-07	0.0053	8.971E-07	0.0049	3.325E-06	0.0181
Ra-226	6.762E-05	0.3689	1.678E-10	0.0000	0.000E+00	0.0000	8.088E-06	0.0441	2.846E-07	0.0016	6.548E-07	0.0036	4.971E-07	0.0027
Ra-228	3.694E-05	0.2015	2.597E-10	0.0000	0.000E+00	0.0000	2.251E-05	0.1228	7.924E-07	0.0043	1.823E-06	0.0099	1.384E-06	0.0076
Th-230	7.943E-09	0.0000	2.018E-10	0.0000	0.000E+00	0.0000	4.701E-08	0.0003	3.530E-09	0.0000	4.447E-10	0.0000	1.149E-07	0.0006
U-234	2.473E-09	0.0000	1.650E-10	0.0000	0.000E+00	0.0000	9.399E-08	0.0005	9.953E-09	0.0001	4.399E-08	0.0002	9.223E-08	0.0005
Total	1.262E-04	0.6888	2.799E-08	0.0002	0.000E+00	0.0000	4.502E-05	0.2457	2.707E-06	0.0148	3.824E-06	0.0209	5.450E-06	0.0297

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 0.000E+00 years

Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.326E-05	0.1269
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.289E-07	0.0012
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.877E-05	0.1024
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.714E-05	0.4209
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.345E-05	0.3462
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.741E-07	0.0009
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.428E-07	0.0013
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.833E-04	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 1.000E+00 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Cs-137	1.925E-04	5.096E+02	5.382E+02	3.301E+02	3.132E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.409E+03
H-3	6.930E-01	3.216E+01	8.663E+00	9.114E+00	2.108E-02	1.016E+04	2.516E-02	0.000E+00	0.000E+00	6.295E+02	1.084E+04
Pb-210	1.967E-04	1.307E+02	9.474E+00	8.655E+00	3.201E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.809E+02
Ra-226	1.970E-04	5.217E+02	1.836E+01	4.224E+01	3.206E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.143E+02
Ra-228	1.747E-04	4.624E+02	1.628E+01	3.744E+01	2.842E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.446E+02
Th-228	5.622E-05	9.635E+00	6.175E-01	7.581E-02	9.147E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.948E+01
Th-230	1.970E-04	1.311E+01	9.850E-01	1.241E-01	3.206E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.628E+01
U-234	1.970E-04	3.266E+01	3.459E+00	1.528E+01	3.205E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.345E+01

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 1.000E+00 years

Radon Pathway	Radionuclides							
	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+00 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	2.111E-05	0.1100	6.467E-13	0.0000	5.717E-07	0.0030	6.039E-07	0.0031	3.703E-07	0.0019	3.514E-08	0.0002
H-3	0.000E+00	0.0000	1.769E-11	0.0000	1.389E-10	0.0000	3.742E-11	0.0000	3.937E-11	0.0000	9.108E-14	0.0000
Pb-210	4.013E-08	0.0002	1.815E-10	0.0000	1.350E-05	0.0704	9.786E-07	0.0051	8.940E-07	0.0047	3.306E-06	0.0172
Ra-226	6.751E-05	0.3518	1.671E-10	0.0000	8.056E-06	0.0420	2.836E-07	0.0015	6.522E-07	0.0034	4.951E-07	0.0026
Ra-228	3.269E-05	0.1704	2.292E-10	0.0000	1.988E-05	0.1036	6.998E-07	0.0036	1.609E-06	0.0084	1.222E-06	0.0064
Th-228	1.670E-05	0.0870	2.429E-10	0.0000	1.221E-07	0.0006	7.824E-09	0.0000	9.606E-10	0.0000	1.159E-07	0.0006
Th-230	7.940E-09	0.0000	2.010E-10	0.0000	4.682E-08	0.0002	3.517E-09	0.0000	4.429E-10	0.0000	1.145E-07	0.0006
U-234	2.471E-09	0.0000	1.643E-10	0.0000	9.357E-08	0.0005	9.910E-09	0.0001	4.379E-08	0.0002	9.181E-08	0.0005

Total	1.381E-04	0.7194	1.204E-09	0.0000	4.227E-05	0.2203	2.587E-06	0.0135	3.571E-06	0.0186	5.380E-06	0.0280

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+00 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All Pathways** risk	All Pathways** fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.269E-05	0.1182
H-3	3.413E-08	0.0002	1.087E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.720E-09	0.0000	3.708E-08	0.0002
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.872E-05	0.0976
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.700E-05	0.4012
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.610E-05	0.2923
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.694E-05	0.0883
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.734E-07	0.0009
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.417E-07	0.0013
Total	3.413E-08	0.0002	1.087E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.720E-09	0.0000	1.919E-04	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 1.000E+00 years
Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+00 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground risk	Ground fract.	Inhalation risk	Inhalation fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	Soil risk	Soil fract.
Cs-137	2.111E-05	0.1100	6.467E-13	0.0000	0.000E+00	0.0000	5.717E-07	0.0030	6.039E-07	0.0031	3.703E-07	0.0019	3.514E-08	0.0002
H-3	0.000E+00	0.0000	1.769E-11	0.0000	0.000E+00	0.0000	1.389E-10	0.0000	3.742E-11	0.0000	3.937E-11	0.0000	9.108E-14	0.0000
Pb-210	3.890E-08	0.0002	1.760E-10	0.0000	0.000E+00	0.0000	1.304E-05	0.0680	9.451E-07	0.0049	8.648E-07	0.0045	3.205E-06	0.0167
Ra-226	6.748E-05	0.3516	1.726E-10	0.0000	0.000E+00	0.0000	8.510E-06	0.0443	3.170E-07	0.0017	6.812E-07	0.0035	5.961E-07	0.0031
Ra-228	4.939E-05	0.2574	4.722E-10	0.0000	0.000E+00	0.0000	2.000E-05	0.1042	7.076E-07	0.0037	1.610E-06	0.0084	1.338E-06	0.0070
Th-230	3.718E-08	0.0002	2.010E-10	0.0000	0.000E+00	0.0000	5.029E-08	0.0003	3.634E-09	0.0000	7.169E-10	0.0000	1.147E-07	0.0006
U-234	2.472E-09	0.0000	1.643E-10	0.0000	0.000E+00	0.0000	9.357E-08	0.0005	9.910E-09	0.0001	4.379E-08	0.0002	9.181E-08	0.0005
Total	1.381E-04	0.7194	1.204E-09	0.0000	0.000E+00	0.0000	4.227E-05	0.2203	2.587E-06	0.0135	3.571E-06	0.0186	5.380E-06	0.0280

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+00 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All pathways risk	All pathways fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.269E-05	0.1182
H-3	3.413E-08	0.0002	1.087E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.720E-09	0.0000	3.708E-08	0.0002
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.810E-05	0.0943
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.758E-05	0.4043
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.304E-05	0.3806
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.067E-07	0.0011
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.417E-07	0.0013
Total	3.413E-08	0.0002	1.087E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.720E-09	0.0000	1.919E-04	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

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Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 1.700E+00 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Cs-137	1.888E-04	4.998E+02	5.279E+02	3.237E+02	3.072E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.382E+03
H-3	4.093E-03	1.899E-01	5.117E-02	5.384E-02	1.245E-04	6.252E+04	2.455E-01	0.000E+00	6.782E+02	4.135E+03	6.733E+04
Pb-210	1.960E-04	1.302E+02	9.437E+00	8.621E+00	3.188E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.801E+02
Ra-226	1.965E-04	5.202E+02	1.831E+01	4.211E+01	3.197E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.126E+02
Ra-228	1.601E-04	4.238E+02	1.492E+01	3.431E+01	2.604E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.991E+02
Th-228	8.085E-05	1.078E+01	7.125E-01	8.794E-02	1.316E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.474E+01
Th-230	1.965E-04	1.308E+01	9.822E-01	1.237E-01	3.197E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.615E+01
U-234	1.963E-04	3.255E+01	3.448E+00	1.523E+01	3.194E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.318E+01

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 1.700E+00 years

Radon Pathway	Radionuclides							
	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.700E+00 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	2.074E-05	0.1068	6.343E-13	0.0000	5.608E-07	0.0029	5.923E-07	0.0030	3.632E-07	0.0019	3.446E-08	0.0002
H-3	0.000E+00	0.0000	1.045E-13	0.0000	8.205E-13	0.0000	2.210E-13	0.0000	2.326E-13	0.0000	5.380E-16	0.0000
Pb-210	4.007E-08	0.0002	1.808E-10	0.0000	1.345E-05	0.0692	9.747E-07	0.0050	8.905E-07	0.0046	3.293E-06	0.0169
Ra-226	6.743E-05	0.3470	1.666E-10	0.0000	8.033E-06	0.0413	2.828E-07	0.0015	6.503E-07	0.0033	4.937E-07	0.0025
Ra-228	3.001E-05	0.1545	2.101E-10	0.0000	1.822E-05	0.0938	6.413E-07	0.0033	1.475E-06	0.0076	1.120E-06	0.0058
Th-228	2.405E-05	0.1238	3.493E-10	0.0000	1.366E-07	0.0007	9.029E-09	0.0000	1.114E-09	0.0000	1.667E-07	0.0009
Th-230	7.938E-09	0.0000	2.004E-10	0.0000	4.668E-08	0.0002	3.506E-09	0.0000	4.416E-10	0.0000	1.141E-07	0.0006
U-234	2.470E-09	0.0000	1.637E-10	0.0000	9.327E-08	0.0005	9.878E-09	0.0001	4.364E-08	0.0002	9.151E-08	0.0005

Total	1.423E-04	0.7323	1.272E-09	0.0000	4.054E-05	0.2086	2.514E-06	0.0129	3.424E-06	0.0176	5.313E-06	0.0273

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.700E+00 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All Pathways** risk	All Pathways** fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.229E-05	0.1147
H-3	2.101E-07	0.0011	1.061E-12	0.0000	0.000E+00	0.0000	2.930E-09	0.0000	1.786E-08	0.0001	2.309E-07	0.0012
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.865E-05	0.0960
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.689E-05	0.3957
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.147E-05	0.2649
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.437E-05	0.1254
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.729E-07	0.0009
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.409E-07	0.0012
Total	2.101E-07	0.0011	1.061E-12	0.0000	0.000E+00	0.0000	2.930E-09	0.0000	1.786E-08	0.0001	1.943E-04	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 1.700E+00 years
Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.700E+00 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	2.074E-05	0.1068	6.343E-13	0.0000	0.000E+00	0.0000	5.608E-07	0.0029	5.923E-07	0.0030	3.632E-07	0.0019	3.446E-08	0.0002
H-3	0.000E+00	0.0000	1.045E-13	0.0000	0.000E+00	0.0000	8.205E-13	0.0000	2.210E-13	0.0000	2.326E-13	0.0000	5.380E-16	0.0000
Pb-210	3.801E-08	0.0002	1.715E-10	0.0000	0.000E+00	0.0000	1.271E-05	0.0654	9.210E-07	0.0047	8.428E-07	0.0043	3.124E-06	0.0161
Ra-226	6.738E-05	0.3468	1.758E-10	0.0000	0.000E+00	0.0000	8.763E-06	0.0451	3.362E-07	0.0017	6.975E-07	0.0036	6.630E-07	0.0034
Ra-228	5.407E-05	0.2782	5.594E-10	0.0000	0.000E+00	0.0000	1.835E-05	0.0945	6.504E-07	0.0033	1.476E-06	0.0076	1.286E-06	0.0066
Th-230	5.758E-08	0.0003	2.005E-10	0.0000	0.000E+00	0.0000	5.276E-08	0.0003	3.722E-09	0.0000	9.236E-10	0.0000	1.145E-07	0.0006
U-234	2.471E-09	0.0000	1.637E-10	0.0000	0.000E+00	0.0000	9.327E-08	0.0005	9.878E-09	0.0001	4.364E-08	0.0002	9.152E-08	0.0005
Total	1.423E-04	0.7323	1.272E-09	0.0000	0.000E+00	0.0000	4.054E-05	0.2086	2.514E-06	0.0129	3.424E-06	0.0176	5.313E-06	0.0273

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.700E+00 years

Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.229E-05	0.1147
H-3	2.101E-07	0.0011	1.061E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.930E-09	0.0000	1.786E-08	0.0001	2.309E-07	0.0012
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.764E-05	0.0908
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.784E-05	0.4006
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.583E-05	0.3903
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.297E-07	0.0012
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.409E-07	0.0012
Total	2.101E-07	0.0011	1.061E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.930E-09	0.0000	1.786E-08	0.0001	1.943E-04	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 3.000E+00 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Cs-137	1.821E-04	4.822E+02	5.093E+02	3.123E+02	2.963E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.333E+03
H-3	2.972E-07	1.379E-05	3.716E-06	3.909E-06	9.043E-09	5.845E+04	2.297E-01	0.000E+00	6.357E+02	3.866E+03	6.295E+04
Pb-210	1.945E-04	1.293E+02	9.368E+00	8.558E+00	3.165E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.788E+02
Ra-226	1.954E-04	5.174E+02	1.821E+01	4.189E+01	3.180E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.093E+02
Ra-228	1.361E-04	3.604E+02	1.269E+01	2.918E+01	2.215E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.244E+02
Th-228	1.052E-04	1.160E+01	7.882E-01	9.775E-02	1.712E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.960E+01
Th-230	1.954E-04	1.301E+01	9.768E-01	1.230E-01	3.179E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.590E+01
U-234	1.951E-04	3.236E+01	3.427E+00	1.514E+01	3.175E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.268E+01

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil and water-dependent water, fish, plant, meat, milk pathways

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of Radon and its Decay Products as pCi/yr at t= 3.000E+00 years

Radon Pathway	Radionuclides							
	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p) and Fraction of Total Risk at t= 3.000E+00 years

Radio-Nuclide	Ground		Water Independent Pathways (Inhalation excludes radon) Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	2.008E-05	0.1040	6.119E-13	0.0000	5.410E-07	0.0028	5.714E-07	0.0030	3.504E-07	0.0018	3.325E-08	0.0002
H-3	0.000E+00	0.0000	7.588E-18	0.0000	5.958E-17	0.0000	1.605E-17	0.0000	1.689E-17	0.0000	3.907E-20	0.0000
Pb-210	3.997E-08	0.0002	1.795E-10	0.0000	1.335E-05	0.0692	9.676E-07	0.0050	8.840E-07	0.0046	3.269E-06	0.0169
Ra-226	6.729E-05	0.3486	1.657E-10	0.0000	7.989E-06	0.0414	2.813E-07	0.0015	6.469E-07	0.0034	4.910E-07	0.0025
Ra-228	2.561E-05	0.1327	1.787E-10	0.0000	1.549E-05	0.0802	5.454E-07	0.0028	1.254E-06	0.0065	9.520E-07	0.0049
Th-228	3.140E-05	0.1627	4.547E-10	0.0000	1.470E-07	0.0008	9.989E-09	0.0001	1.239E-09	0.0000	2.170E-07	0.0011
Th-230	7.933E-09	0.0000	1.993E-10	0.0000	4.643E-08	0.0002	3.487E-09	0.0000	4.392E-10	0.0000	1.135E-07	0.0006
U-234	2.468E-09	0.0000	1.627E-10	0.0000	9.271E-08	0.0005	9.819E-09	0.0001	4.338E-08	0.0002	9.097E-08	0.0005

Total	1.444E-04	0.7482	1.341E-09	0.0000	3.766E-05	0.1951	2.389E-06	0.0124	3.181E-06	0.0165	5.167E-06	0.0268

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+00 years

Water Dependent Pathways

Radio-	Water		Fish		Plant		Meat		Milk		All Pathways**	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.158E-05	0.1118
H-3	1.964E-07	0.0010	9.922E-13	0.0000	0.000E+00	0.0000	2.746E-09	0.0000	1.670E-08	0.0001	2.158E-07	0.0011
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.851E-05	0.0959
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.670E-05	0.3973
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.385E-05	0.2272
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.178E-05	0.1646
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.720E-07	0.0009
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.395E-07	0.0012
Total	1.964E-07	0.0010	9.922E-13	0.0000	0.000E+00	0.0000	2.746E-09	0.0000	1.670E-08	0.0001	1.930E-04	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 3.000E+00 years
Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+00 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground risk	Ground fract.	Inhalation risk	Inhalation fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	Soil risk	Soil fract.
Cs-137	2.008E-05	0.1040	6.119E-13	0.0000	0.000E+00	0.0000	5.410E-07	0.0028	5.714E-07	0.0030	3.504E-07	0.0018	3.325E-08	0.0002
H-3	0.000E+00	0.0000	7.588E-18	0.0000	0.000E+00	0.0000	5.958E-17	0.0000	1.605E-17	0.0000	1.689E-17	0.0000	3.907E-20	0.0000
Pb-210	3.640E-08	0.0002	1.635E-10	0.0000	0.000E+00	0.0000	1.212E-05	0.0628	8.780E-07	0.0045	8.034E-07	0.0042	2.978E-06	0.0154
Ra-226	6.720E-05	0.3481	1.815E-10	0.0000	0.000E+00	0.0000	9.211E-06	0.0477	3.705E-07	0.0019	7.265E-07	0.0038	7.819E-07	0.0041
Ra-228	5.701E-05	0.2953	6.333E-10	0.0000	0.000E+00	0.0000	1.564E-05	0.0810	5.554E-07	0.0029	1.255E-06	0.0065	1.169E-06	0.0061
Th-230	9.532E-08	0.0005	1.995E-10	0.0000	0.000E+00	0.0000	5.752E-08	0.0003	3.900E-09	0.0000	1.319E-09	0.0000	1.143E-07	0.0006
U-234	2.469E-09	0.0000	1.628E-10	0.0000	0.000E+00	0.0000	9.271E-08	0.0005	9.819E-09	0.0001	4.338E-08	0.0002	9.097E-08	0.0005
Total	1.444E-04	0.7482	1.341E-09	0.0000	0.000E+00	0.0000	3.766E-05	0.1951	2.389E-06	0.0124	3.181E-06	0.0165	5.167E-06	0.0268

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+00 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All pathways risk	All pathways fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.158E-05	0.1118
H-3	1.964E-07	0.0010	9.922E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.746E-09	0.0000	1.670E-08	0.0001	2.158E-07	0.0011
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.681E-05	0.0871
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.829E-05	0.4056
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.563E-05	0.3918
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.726E-07	0.0014
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.395E-07	0.0012
Total	1.964E-07	0.0010	9.922E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.746E-09	0.0000	1.670E-08	0.0001	1.930E-04	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 1.000E+01 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Cs-137	1.500E-04	3.972E+02	4.195E+02	2.573E+02	2.441E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.098E+03
H-3	1.535E-29	7.124E-28	1.919E-28	2.019E-28	0.000E+00	3.579E-13	1.596E-18	0.000E+00	5.783E-15	2.420E-14	3.879E-13
Pb-210	1.872E-04	1.244E+02	9.013E+00	8.234E+00	3.045E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.721E+02
Ra-226	1.897E-04	5.023E+02	1.768E+01	4.067E+01	3.087E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.916E+02
Ra-228	5.684E-05	1.505E+02	5.298E+00	1.218E+01	9.248E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.772E+02
Th-228	7.761E-05	7.083E+00	4.975E-01	6.202E-02	1.263E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.027E+01
Th-230	1.896E-04	1.262E+01	9.481E-01	1.194E-01	3.086E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.455E+01
U-234	1.888E-04	3.131E+01	3.316E+00	1.465E+01	3.072E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.001E+01

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil and water-dependent water, fish, plant, meat, milk pathways

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of Radon and its Decay Products as pCi/yr at t= 1.000E+01 years

Radon Pathway	Radionuclides							
	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p) and Fraction of Total Risk at t= 1.000E+01 years

Radio-Nuclide	Ground		Water Independent Pathways (Inhalation excludes radon) Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	1.687E-05	0.1093	5.041E-13	0.0000	4.456E-07	0.0029	4.707E-07	0.0031	2.886E-07	0.0019	2.739E-08	0.0002
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	3.944E-08	0.0003	1.727E-10	0.0000	1.284E-05	0.0833	9.310E-07	0.0060	8.505E-07	0.0055	3.145E-06	0.0204
Ra-226	6.649E-05	0.4311	1.609E-10	0.0000	7.757E-06	0.0503	2.731E-07	0.0018	6.281E-07	0.0041	4.768E-07	0.0031
Ra-228	1.089E-05	0.0706	7.460E-11	0.0000	6.469E-06	0.0419	2.277E-07	0.0015	5.237E-07	0.0034	3.975E-07	0.0026
Th-228	2.354E-05	0.1526	3.353E-10	0.0000	8.976E-08	0.0006	6.304E-09	0.0000	7.859E-10	0.0000	1.600E-07	0.0010
Th-230	7.908E-09	0.0001	1.934E-10	0.0000	4.506E-08	0.0003	3.385E-09	0.0000	4.263E-10	0.0000	1.102E-07	0.0007
U-234	2.454E-09	0.0000	1.575E-10	0.0000	8.971E-08	0.0006	9.502E-09	0.0001	4.198E-08	0.0003	8.802E-08	0.0006

Total	1.178E-04	0.7640	1.095E-09	0.0000	2.774E-05	0.1799	1.922E-06	0.0125	2.334E-06	0.0151	4.405E-06	0.0286

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+01 years

Water Dependent Pathways

Radio-	Water		Fish		Plant		Meat		Milk		All Pathways**	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.810E-05	0.1173
H-3	1.203E-24	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.498E-26	0.0000	1.046E-25	0.0000	1.332E-24	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.781E-05	0.1155
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.563E-05	0.4903
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.851E-05	0.1200
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.380E-05	0.1543
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.671E-07	0.0011
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.318E-07	0.0015
Total	1.203E-24	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.498E-26	0.0000	1.046E-25	0.0000	1.542E-04	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 1.000E+01 years
Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+01 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground risk	Ground fract.	Inhalation risk	Inhalation fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	Soil risk	Soil fract.
Cs-137	1.687E-05	0.1093	5.041E-13	0.0000	0.000E+00	0.0000	4.456E-07	0.0029	4.707E-07	0.0031	2.886E-07	0.0019	2.739E-08	0.0002
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	2.884E-08	0.0002	1.263E-10	0.0000	0.000E+00	0.0000	9.360E-06	0.0607	6.782E-07	0.0044	6.205E-07	0.0040	2.300E-06	0.0149
Ra-226	6.621E-05	0.4293	2.065E-10	0.0000	0.000E+00	0.0000	1.120E-05	0.0726	5.242E-07	0.0034	8.548E-07	0.0055	1.318E-06	0.0085
Ra-228	3.443E-05	0.2232	4.099E-10	0.0000	0.000E+00	0.0000	6.558E-06	0.0425	2.340E-07	0.0015	5.245E-07	0.0034	5.576E-07	0.0036
Th-230	2.953E-07	0.0019	1.942E-10	0.0000	0.000E+00	0.0000	8.650E-08	0.0006	5.135E-09	0.0000	3.654E-09	0.0000	1.141E-07	0.0007
U-234	2.467E-09	0.0000	1.575E-10	0.0000	0.000E+00	0.0000	8.972E-08	0.0006	9.502E-09	0.0001	4.198E-08	0.0003	8.803E-08	0.0006
Total	1.178E-04	0.7640	1.095E-09	0.0000	0.000E+00	0.0000	2.774E-05	0.1799	1.922E-06	0.0125	2.334E-06	0.0151	4.405E-06	0.0286

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+01 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All pathways risk	All pathways fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.810E-05	0.1173
H-3	1.203E-24	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.498E-26	0.0000	1.046E-25	0.0000	1.332E-24	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.299E-05	0.0842
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.011E-05	0.5194
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.231E-05	0.2743
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.049E-07	0.0033
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.319E-07	0.0015
Total	1.203E-24	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.498E-26	0.0000	1.046E-25	0.0000	1.542E-04	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 3.000E+01 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Cs-137	8.578E-05	2.271E+02	2.399E+02	1.471E+02	1.396E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.280E+02
H-3	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	1.683E-04	1.118E+02	8.104E+00	7.403E+00	2.738E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.547E+02
Ra-226	1.736E-04	4.595E+02	1.618E+01	3.721E+01	2.824E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.412E+02
Ra-228	4.666E-06	1.235E+01	4.349E-01	1.000E+00	7.591E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.455E+01
Th-228	6.989E-06	6.226E-01	4.393E-02	5.480E-03	1.137E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.809E+00
Th-230	1.733E-04	1.153E+01	8.663E-01	1.091E-01	2.819E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.070E+01
U-234	1.711E-04	2.837E+01	3.005E+00	1.327E+01	2.783E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.248E+01

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 3.000E+01 years

Radon Pathway	Radionuclides							
	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+01 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	1.021E-05	0.0986	2.882E-13	0.0000	2.548E-07	0.0025	2.691E-07	0.0026	1.650E-07	0.0016	1.566E-08	0.0002
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	3.825E-08	0.0004	1.552E-10	0.0000	1.155E-05	0.1116	8.371E-07	0.0081	7.647E-07	0.0074	2.828E-06	0.0273
Ra-226	6.404E-05	0.6187	1.472E-10	0.0000	7.096E-06	0.0686	2.498E-07	0.0024	5.746E-07	0.0056	4.361E-07	0.0042
Ra-228	9.426E-07	0.0091	6.123E-12	0.0000	5.310E-07	0.0051	1.869E-08	0.0002	4.299E-08	0.0004	3.263E-08	0.0003
Th-228	2.226E-06	0.0215	3.020E-11	0.0000	7.890E-09	0.0001	5.567E-10	0.0000	6.945E-11	0.0000	1.441E-08	0.0001
Th-230	7.824E-09	0.0001	1.767E-10	0.0000	4.117E-08	0.0004	3.093E-09	0.0000	3.895E-10	0.0000	1.006E-07	0.0010
U-234	2.412E-09	0.0000	1.427E-10	0.0000	8.127E-08	0.0008	8.608E-09	0.0001	3.803E-08	0.0004	7.974E-08	0.0008

Total	7.747E-05	0.7484	6.585E-10	0.0000	1.956E-05	0.1890	1.387E-06	0.0134	1.586E-06	0.0153	3.507E-06	0.0339

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+01 years

Water Dependent Pathways

Radio-	Water		Fish		Plant		Meat		Milk		All Pathways**	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.091E-05	0.1054
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.602E-05	0.1547
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.240E-05	0.6995
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.568E-06	0.0151
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.249E-06	0.0217
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.533E-07	0.0015
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.102E-07	0.0020
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.035E-04	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 3.000E+01 years
Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+01 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground risk	Ground fract.	Inhalation risk	Inhalation fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	Soil risk	Soil fract.
Cs-137	1.021E-05	0.0986	2.882E-13	0.0000	0.000E+00	0.0000	2.548E-07	0.0025	2.691E-07	0.0026	1.650E-07	0.0016	1.566E-08	0.0002
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	1.480E-08	0.0001	6.008E-11	0.0000	0.000E+00	0.0000	4.454E-06	0.0430	3.227E-07	0.0031	2.953E-07	0.0029	1.094E-06	0.0106
Ra-226	6.324E-05	0.6110	2.398E-10	0.0000	0.000E+00	0.0000	1.405E-05	0.1357	7.571E-07	0.0073	1.033E-06	0.0100	2.151E-06	0.0208
Ra-228	3.169E-06	0.0306	3.632E-11	0.0000	0.000E+00	0.0000	5.389E-07	0.0052	1.925E-08	0.0002	4.306E-08	0.0004	4.704E-08	0.0005
Th-230	8.341E-07	0.0081	1.793E-10	0.0000	0.000E+00	0.0000	1.860E-07	0.0018	1.018E-08	0.0001	1.132E-08	0.0001	1.193E-07	0.0012
U-234	2.525E-09	0.0000	1.427E-10	0.0000	0.000E+00	0.0000	8.130E-08	0.0008	8.610E-09	0.0001	3.803E-08	0.0004	7.977E-08	0.0008
Total	7.747E-05	0.7484	6.585E-10	0.0000	0.000E+00	0.0000	1.956E-05	0.1890	1.387E-06	0.0134	1.586E-06	0.0153	3.507E-06	0.0339

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+01 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All pathways risk	All pathways fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.091E-05	0.1054
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.181E-06	0.0597
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.123E-05	0.7847
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.817E-06	0.0369
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.161E-06	0.0112
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.104E-07	0.0020
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.035E-04	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 1.000E+02 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Cs-137	1.121E-05	2.968E+01	3.136E+01	1.923E+01	1.824E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.209E+01
H-3	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	1.120E-04	7.440E+01	5.393E+00	4.926E+00	1.822E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.029E+02
Ra-226	1.175E-04	3.111E+02	1.095E+01	2.519E+01	1.912E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.663E+02
Ra-228	6.835E-10	1.810E-03	6.372E-05	1.465E-04	1.112E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.131E-03
Th-228	1.025E-09	9.127E-05	6.440E-06	8.033E-07	1.667E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.652E-04
Th-230	1.168E-04	7.776E+00	5.841E-01	7.355E-02	1.901E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.744E+01
U-234	1.119E-04	1.856E+01	1.966E+00	8.685E+00	1.821E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.743E+01

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil and water-dependent water, fish, plant, meat, milk pathways

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of Radon and its Decay Products as pCi/yr at t= 1.000E+02 years

Radon Pathway	Radionuclides							
	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p) and Fraction of Total Risk at t= 1.000E+02 years

Radio-Nuclide	Ground		Water Independent Pathways (Inhalation excludes radon) Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	1.660E-06	0.0233	3.767E-14	0.0000	3.331E-08	0.0005	3.518E-08	0.0005	2.157E-08	0.0003	2.047E-09	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	3.483E-08	0.0005	1.033E-10	0.0000	7.685E-06	0.1078	5.571E-07	0.0078	5.088E-07	0.0071	1.882E-06	0.0264
Ra-226	5.297E-05	0.7430	9.964E-11	0.0000	4.804E-06	0.0674	1.691E-07	0.0024	3.889E-07	0.0055	2.952E-07	0.0041
Ra-228	1.698E-10	0.0000	8.971E-16	0.0000	7.779E-11	0.0000	2.739E-12	0.0000	6.299E-12	0.0000	4.780E-12	0.0000
Th-228	3.952E-10	0.0000	4.427E-15	0.0000	1.157E-12	0.0000	8.161E-14	0.0000	1.018E-14	0.0000	2.113E-12	0.0000
Th-230	7.277E-09	0.0001	1.191E-10	0.0000	2.776E-08	0.0004	2.085E-09	0.0000	2.626E-10	0.0000	6.785E-08	0.0010
U-234	2.208E-09	0.0000	9.335E-11	0.0000	5.318E-08	0.0007	5.633E-09	0.0001	2.488E-08	0.0003	5.218E-08	0.0007

Total	5.468E-05	0.7669	4.155E-10	0.0000	1.260E-05	0.1768	7.691E-07	0.0108	9.445E-07	0.0132	2.299E-06	0.0322

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+02 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All Pathways** risk	All Pathways** fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.752E-06	0.0246
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.067E-05	0.1496
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.863E-05	0.8224
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.614E-10	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.985E-10	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.054E-07	0.0015
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.382E-07	0.0019
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.129E-05	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 1.000E+02 years
Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+02 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground risk	Ground fract.	Inhalation risk	Inhalation fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	Soil risk	Soil fract.
Cs-137	1.660E-06	0.0233	3.767E-14	0.0000	0.000E+00	0.0000	3.331E-08	0.0005	3.518E-08	0.0005	2.157E-08	0.0003	2.047E-09	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	1.392E-09	0.0000	4.127E-12	0.0000	0.000E+00	0.0000	3.060E-07	0.0043	2.217E-08	0.0003	2.028E-08	0.0003	7.517E-08	0.0011
Ra-226	5.077E-05	0.7121	1.915E-10	0.0000	0.000E+00	0.0000	1.175E-05	0.1648	6.802E-07	0.0095	8.458E-07	0.0119	2.033E-06	0.0285
Ra-228	5.649E-10	0.0000	5.324E-15	0.0000	0.000E+00	0.0000	7.895E-11	0.0000	2.821E-12	0.0000	6.309E-12	0.0000	6.893E-12	0.0000
Th-230	2.247E-06	0.0315	1.263E-10	0.0000	0.000E+00	0.0000	4.608E-07	0.0065	2.591E-08	0.0004	3.192E-08	0.0004	1.365E-07	0.0019
U-234	3.214E-09	0.0000	9.346E-11	0.0000	0.000E+00	0.0000	5.338E-08	0.0007	5.644E-09	0.0001	2.490E-08	0.0003	5.226E-08	0.0007
Total	5.468E-05	0.7669	4.155E-10	0.0000	0.000E+00	0.0000	1.260E-05	0.1768	7.691E-07	0.0108	9.445E-07	0.0132	2.299E-06	0.0322

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+02 years

Water Dependent Pathways

Radio-Nuclide	Water risk	Water fract.	Fish risk	Fish fract.	Radon risk	Radon fract.	Plant risk	Plant fract.	Meat risk	Meat fract.	Milk risk	Milk fract.	All pathways risk	All pathways fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.752E-06	0.0246
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.250E-07	0.0060
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.607E-05	0.9268
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.599E-10	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.902E-06	0.0407
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.395E-07	0.0020
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.129E-05	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 3.000E+02 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Cs-137	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
H-3	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ra-226	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ra-228	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-228	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil and water-dependent water, fish, plant, meat, milk pathways

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of Radon and its Decay Products as pCi/yr at t= 3.000E+02 years

Radon Pathway	Radionuclides							
	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p) and Fraction of Total Risk at t= 3.000E+02 years

Radio-Nuclide	Ground		Water Independent Pathways (Inhalation excludes radon) Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+02 years

Water Dependent Pathways

Radio-	Water		Fish		Plant		Meat		Milk		All Pathways**	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 3.000E+02 years
Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+02 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+02 years

Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 1.000E+03 years

Radio-Nuclide	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total Ingestion*
	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	
Cs-137	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
H-3	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ra-226	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ra-228	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-228	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 1.000E+03 years

Radon Pathway	Radionuclides							
	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+03 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+03 years

Water Dependent Pathways

Radio-	Water		Fish		Plant		Meat		Milk		All Pathways**	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 1.000E+03 years
Radionuclides

Radon Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+03 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+03 years

Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Table G-11-1: Results of Dose Assessment for Groundwater Exposure

Nuclide	EPC (pCi/L)	X	IR (L/day)	X	EF (days/year)	X	DCF (mrem/pCi)	=	Dose (mrem/yr)
Residential Farmer									
Ac-227	0.05	x	1.4	x	350	x	1.48E-02	=	0.36
Future Park Worker									
Ac-227	0.05	x	1	x	175	x	1.48E-02	=	0.13
Future Recreational Receptor									
Ac-227	0.05	x	1	x	14	x	1.48E-02	=	0.01

Table G-11-2: Results of Risk Assessment for Groundwater Exposure

Nuclide	EPC (pCi/L)	X	IR (L/day)	X	EF (days/year)	X	ED (years)	X	RC (Risk/pCi)	=	Risk
Residential Farmer											
Ac-227	0.05	x	1.4	x	350	x	30	x	4.86E-10	=	4E-07
Future Park Worker											
Ac-227	0.05	x	1	x	175	x	25	x	4.86E-10	=	1E-07
Future Recreational Receptor											
Ac-227	0.05	x	1	x	14	x	5	x	4.86E-10	=	2E-09

Table G-12-1: Results of Dose Assessment for Onsite Surface Water Exposure

Nuclide	EPC (pCi/L)	X	IR (L/day)	X	EF (days/year)	X	DCF (mrem/pCi)	=	Dose (mrem/yr)
Residential Farmer									
Ac-227	0.28	x	0.05	x	350	x	1.48E-02	=	0.07

Table G-12-2: Results of Risk Assessment for Onsite Surface Water Exposure

Nuclide	EPC (pCi/L)	X	IR (L/day)	X	EF (days/year)	X	ED (years)	X	RC (Risk/pCi)	=	Risk
Residential Farmer											
Ac-227	0.05	x	0.05	x	350	x	30	x	4.86E-10	=	1E-08

Table G-13-1: Results of Dose Assessment to Residenital Farmer Scenario for Onsite Sediment Pathway

Nuclide	EPC (pCi/g)	X	IR (mg/day)	X	CF (g/mg)	X	EF (days/year)	X	DCF (mrem/pCi)	=	Dose (mrem/yr)
Cs-137	0.10	x	12	x	1.00E-03	x	45	x	5.00E-05	=	0.00
Pm-147	15.39	x	12	x	1.00E-03	x	45	x	1.05E-06	=	0.00
U-234	0.12	x	12	x	1.00E-03	x	45	x	2.83E-04	=	0.00
U-238	0.15	x	12	x	1.00E-03	x	45	x	2.69E-04	=	0.00
									Total Dose		**0.00**

Table G-13-2: Results of Risk Assessment to Residenital Farmer Scenario for Onsite Sediment Pathway

Nuclide	EPC (pCi/g)	X	IR (mg/day)	X	CF (g/mg)	X	EF (days/year)	X	ED (years)	X	RC (Risk/pCi)	=	Risk
Cs-137	0.10	x	12	x	1.00E-03	x	45	x	30	x	3.04E-11	=	5.1E-11
Pm-147	15.39	x	12	x	1.00E-03	x	45	x	30	x	4.88E-12	=	1.2E-09
U-234	0.12	x	12	x	1.00E-03	x	45	x	30	x	7.07E-11	=	1.4E-10
U-238	0.15	x	12	x	1.00E-03	x	45	x	30	x	8.71E-11	=	2.0E-10
											Total Risk		**1E-09**

Table G-14-1: Results of Dose Assessment to Wader Scenario for Offsite Sediment Pathway

Nuclide	EPC (pCi/g)	X	IR (mg/day)	X	CF (g/mg)	X	EF (days/year)	X	DCF (mrem/pCi)	=	Dose (mrem/yr)
Ra-228	0.30	x	20	x	1.00E-03	x	14	x	1.44E-03	=	0.00
Th-230	1.98	x	20	x	1.00E-03	x	14	x	5.48E-04	=	0.00
U-234	0.63	x	20	x	1.00E-03	x	14	x	2.83E-04	=	0.00
U-238	0.54	x	20	x	1.00E-03	x	14	x	2.69E-04	=	0.00
									Total Dose		**0.00**

Table G-14-2: Results of Risk Assessment to Wader Scenario for Offsite Sediment Pathway

Nuclide	EPC (pCi/g)	X	IR (mg/day)	X	CF (g/mg)	X	EF (days/year)	X	ED (years)	X	RC (Risk/pCi)	=	Risk
Ra-228	0.30	x	20	x	1.00E-03	x	14	x	5	x	2.28E-09	=	9.7E-10
Th-230	1.98	x	20	x	1.00E-03	x	14	x	5	x	2.02E-10	=	5.6E-10
U-234	0.63	x	20	x	1.00E-03	x	14	x	5	x	1.58E-10	=	1.4E-10
U-238	0.54	x	20	x	1.00E-03	x	14	x	5	x	2.10E-10	=	1.6E-10
											Total Risk		**2E-09**

ATTACHMENT H

Instrument Quality Control Records and Certificates of Calibration

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CABRERA SERVICES

HP INSTRUMENT QC FIELD LOG

units: cpm or µrem/hr
(circle one)

Make	Model	S/N	Probe	S/N	Cal Date
Ludlum	2241-2	217852	44-9	PR229893	6/18/09
Bkg Count Time	**Source #1 Count Time**	**Source #2 Count Time**	**Source #1 ID**	**Source #2 ID**	**Cal Due Date**
1	1	N/A	1495	NA	6/18/10

Date(s)										
Initial QC's	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**Init.**
Bkgd	37	47	41	49	49	31	35	38	39	29	LC
Source #1	1918	1859	1837	1934	1838	1837	1937	1923	1790	1967	LC
Source #2				N					A		

Daily QC's

Date	Bkgd	Source #1 (TC-99) α/β/γ	Source #2 ( ) α/β/γ	Battery OK?	Comments	Init.
7/9/09	42	1887		(Yes) / No		LC
7/13/09	46	1910		(Yes) / No		LC
7/14/09	40	1893		(Yes) / No		LC
7/15/09	40	1692		(Yes) / No		LC
7/16/09	41	1760		(Yes) / No		LC
7/20/09	43	1828	N	(Yes) / No		LC
7/21/09	40	1776		(Yes) / No		LC
7/22/09	41	1807		(Yes) / No		LC
7/23/09	44	1790		(Yes) / No		LC
7/27/09	42	1811	A	(Yes) / No		LC
7/28/09	44	1797		(Yes) / No		LC
7/29/09	37	1800		(Yes) / No		LC/PR
7/30/09	33	2048		(Yes) / No		LC/PR
8/3/09	46	1677		(Yes) / No		LC
8/4/09	44	1795		(Yes) / No		LC
8/5/09	33	1701		(Yes) / No		LC
8/6/09	41	1892		(Yes) / No		LC

Project#:_____ Project Name:_____

ABRERA SERVICES
RADIOLOGICAL • ENVIRONMENTAL • REMEDIATION

HP INSTRUMEN QC FIELD LOG

units: cpm or m/hr
(circle one)

Daily QC's						
Date	Bkgd	Source #1 ( ) α/β/γ	Source #2 ( ) α/β/γ	Battery OK?	Comments	Init.
8/10/09	46	1697		(Yes) / No		AC
8/11/09	38	1673		(Yes) / No		AC
8/12/09	44	1729		(Yes) / No		AC
8/13/09	40	1825		(Yes) / No		AC
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		

Project#:_____Project Name:_____

Designer and Manufacturer of Scientific and Industrial Instruments

CERTIFICATE OF CALIBRATION

LUDLUM MEASUREMENTS, INC.
POST OFFICE BOX 810 PH. 325-235-5494
501 OAK STREET FAX NO. 325-235-4672
SWEETWATER, TEXAS 79556, U.S.A.

CUSTOMER CABRERA SERVICES ORDER NO. 20135420/339001

Mfg. Ludlum Measurements, Inc. Model 2241-2 Serial No. 217852

Mfg. Ludlum Measurements, Inc. Model 44-9 Serial No. PR 229893

Cal. Date 18-Jun-09 Cal Due Date 18-Jun-10 Cal Interval 1 Year Meterface 44-9

Check mark applies to applicable instr. and/or detector IAW mfg. spec. T. 74 °F RH 45 % Alt 698.8 mm Hg

☐ New Instrument Instrument Received ☐ Within Toler. +-10% ☐ 10-20% ☐ Out of Tol. ☐ Requiring Repair ☑ Other-See comments

☑ Mechanical ck. ☐ Meter Zeroed ☐ Background Subtract ☐ Input Sens. Linearity

☑ F/S Resp. ck ☑ Reset ck. ☐ Window Operation

☐ Audio ck. ☑ Alarm Setting ck. ☑ Batt. ck. (Min. Volt) 2.2 VDC

☑ Calibrated in accordance with LMI SOP 14.8 rev 12/05/89. ☑ Calibrated in accordance with LMI SOP 14.9 rev 02/07/97.

Instrument Volt Set Comments V Input Sens. Comments mV Det. Oper. Comments V at mV Threshold Dial Ratio = mV

COMMENTS:

	Det 1	Det 2
Deadtime:	80 µSec	00 µSec
Cal Constant:	100 e-2	100 e-2
R Alarm:	50 kC/m	50 kcpm
R Alert:	20 kC/m	20 kcpm
High voltage:	900 v	900 v
Firmware:	P-06 10	

EFF:FOR TC-99 #5279 act.28,800dpm ct.6905cpm -Bg60 ct.6845cpm 24% 4Pi

No Asfounds due to no setups

Gamma Calibration: GM detectors positioned perpendicular to source except for M 44-9 in which the front of probe faces source.

RANGE/MULTIPLIER	REFERENCE CAL. POINT	INSTRUMENT REC'D "AS FOUND READING"	INSTRUMENT METER READING*
AUTO			
AUTO			

*Uncertainty within ± 10% C.F. within ± 20% All Range(s) Calibrated Electronically

	REFERENCE CAL. POINT	INSTRUMENT RECEIVED	INSTRUMENT METER READING*
Ratemeter Readout	800K cpm		800 Kcpm
	200K cpm		200
	80K cpm		80
	20K cpm		20
	8K cpm		8
	2K cpm		2
	800 cpm		800cpm
	200 cpm		200

	REFERENCE CAL. POINT	INSTRUMENT RECEIVED	INSTRUMENT METER READING*
Scaler Readout	800K cpm		801150
	200K cpm		20125
	80K cpm		8030
	20K cpm		2000
	8K cpm		800
	2K cpm		200
	800 cpm		80
	200 cpm		20

Ludlum Measurements, Inc. certifies that the above instrument has been calibrated by standards traceable to the National Institute of Standards and Technology, or to the calibration facilities of other International Standards Organization members, or have been derived from accepted values of natural physical constants or have been derived by the ratio type of calibration techniques. The calibration system conforms to the requirements of ANSI/NCSL Z540-1-1994 and ANSI N323-1978. State of Texas Calibration License No. LO-1963

Reference Instruments and/or Sources: ☐ S-394/1122 ☐ 1131 ☐ 781 ☐ 059 ☐ 280 ☐ 60646

Cs-137 Gamma S/N ☐ 1162 ☑ G112 ☐ M565 ☐ 5105 ☐ T1008 ☐ T679 ☐ E552 ☑ E551 ☐ 720 ☐ 734 ☐ 1618 ☐ Neutron Am-241 Be S/N T-304

☐ Alpha S/N ☐ Beta S/N ☐ Other

☑ m 500 S/N 189506 ☐ Oscilloscope S/N ☑ Multimeter S/N 93870637

Calibrated By: Duane Jackson Date 18-Jun09

Reviewed By: Richard Haun Date 18 June 09

This certificate shall not be reproduced except in full, without the written approval of Ludlum Measurements, Inc.

Designer and Manufacturer
of
Scientific and Industrial
Instruments

LUDLUM MEASUREMENTS, INC.
POST OFFICE BOX 810 PH. 325-235-5494
501 OAK STREET FAX NO. 325-235-4672
SWEETWATER, TEXAS 79556, U.S.A.

CONVERSION CHART

Customer CABRERA SERVICES Date 18-Jun-09 Order #. 20135420/339001

Model 2241-2 Serial No. 217852 Detector Model 44-9 Serial No. PR229893

Source Cs-137 194.6 mCi Cs-137 20 mCi High Voltage 900 V

Count time Parameters Input Sensitivity 35 mV

Reference Point	"As Found" Readings (CPM): with Deadtime	"As Found" Readings (CPM): w/o Deadtime	After Adjustment Readings (CPM): with Deadtime	After Adjustment Readings (CPM): w/o Deadtime
150 mR/hr			565 Kcpm	Digital
50 mR/hr			176	
15 mR/hr			50.5	
5 mR/hr			16.5	
1.5 mR/hr			5.24	
1.0 mR/hr			3.24	

Signature: Timothy Jackson Date 18-Jun 09

CABRERA SERVICES

HP INSTRUMENT QC FIELD LOG

units: cpm or µrem/hr
(circle one)

Make	Model	S/N	Probe	S/N	Cal Date
Ludlum	2241-3	142299	44-9	PR171184	2/19/09
Bkg Count Time	**Source #1 Count Time**	**Source #2 Count Time**	**Source #1 ID**	**Source #2 ID**	**Cal Due Date**
1 min	1 min	NA	99Tc 1495	N/A	2/19/10

Date(s)										
Intial QC's	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**Init.**
Bkgd	26	37	43	31	36	25	33	36	36	39	LC
Source #1	1608	1550	1571	1550	1538	1521	1572	1502	1561	1567	LC
Source #2											

Daily QC's

Date	Bkgd	Source #1 (Tc-99) α/β/γ	Source #2 ( ) α/β/γ	Battery OK?	Comments	Init.
7/9/09	37	1574		(Yes) / No		LC
7/13/09	29	1542		(Yes) / No		LC
7/14/09	32	1540		(Yes) / No		LC
7/15/09	38	1506		(Yes) / No	cracked glass on display	LC
7/16/09	30	1532		(Yes) / No		LC
7/20/09	31	1544	N	(Yes) / No		LC
7/21/09	34	1512		(Yes) / No		LC
7/22/09	36	1545		(Yes) / No		LC
7/23/09	38	1568		(Yes) / No		LC
7/27/09	35	1530		(Yes) / No		LC
7/28/09	33	1543	A	(Yes) / No		LC
7/29/09	32	1516		(Yes) / No		PR/LC
7/30/09	35	1681		(Yes) / No		LC/PR
8/3/09	28	1586		(Yes) / No		LC/PR
8/4/09	37	1446		(Yes) / No		LC
8/5/09	31	1479		(Yes) / No		LC
8/6/09	41	1662		(Yes) / No		LC

Project#:_____ Project Name:_____

CABRERA SERVICES

HP INSTRUMENT QC FIELD LOG

units: cpm or µrem/h
(circle one)

Daily QC's						
Date	**Bkgd**	**Source #1 ( ) α/β/γ**	**Source #2 ( ) α/β/γ**	**Battery OK?**	**Comments**	**Init.**
8/10/09	35	1410		(Yes) / No		LC
8/11/09	39	1745		(Yes) / No		LC
8/12/09	40	1469		(Yes) / No		LC
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
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				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		

Project#:_____Project Name:_____

MJW Technical Services
243 Root St.
Suite 100
Olean, New York 14760
Voice: (716) 372-5300
Fax: (716) 372-5307

Certificate Of Calibration

This Certificate will be accompanied by Calibration Charts or Readings where Applicable

Customer

Customer Name: Cabrera Services Inc

Address: 473 Silver Lane
East Hartford, CT 06118

Contact Name: Chuck Mikaitis

Customer PO/ CC. Number: 09-1268

Work Order Number: 2009-1047

Instrument

Manufacturer: Ludlum Measurements

Model: 2241-3 Serial Number: 142299

Detector Manufacturer: Ludlum Measurements

Det. Model: 44-9 Serial Number: PR171184

Calibration Method: Electronic

Instrument Received: ☑ Within Tolerance ☐ Out of Tolerance ☐ Repairs required ☐ Other (See Comments)

☑ Geotropism ☑ Meter Zero ☑ Mech. Ck. ☐ HV Readout ☑ Battery Check ☑ Reset

☑ Audio ☐ Window Status ☑ FS Response ☐ Linearity ☐ Background Subtract ☐ Alarm Set

Temperature: 70.7 F Humidity: 27 % Pressure: 713.7 mm Hg Altitude: 1450 ft

Instrument Calibration

Multiplier\Range	Calibration Point	Instrument Response	
		Before Calibration	After Calibration
Ratemeter Mode	200 cpm	199 cpm	199 cpm
Ratemeter Mode	800 cpm	799 cpm	799 cpm
Ratemeter Mode	2 Kcpm	1.99 Kcpm	1.99 Kcpm
Ratemeter Mode	8 Kcpm	8 Kcpm	8 Kcpm
Ratemeter Mode	20 Kcpm	19.9 Kcpm	19.9 Kcpm
Ratemeter Mode	80 Kcpm	80 Kcpm	80 Kcpm
Ratemeter Mode	200 Kcpm	199 Kcpm	199 Kcpm
Ratemeter Mode	800 Kcpm	800 Kcpm	800 Kcpm
Scaler Mode	200 cpm	200 cpm	200 cpm
Scaler Mode	800 cpm	801 cpm	801 cpm
Scaler Mode	2 Kcpm	1.997 Kcpm	1.997 Kcpm
Scaler Mode	8 Kcpm	8.003 Kcpm	8.003 Kcpm
Scaler Mode	20 Kcpm	19.973 Kcpm	19.973 Kcpm
Scaler Mode	80 Kcpm	80.025 Kcpm	80.025 Kcpm
Scaler Mode	200 Kcpm	199.726 Kcpm	199.726 Kcpm
Scaler Mode	800 Kcpm	800.137 Kcpm	800.137 Kcpm

Reference instruments and / or Sources

Pulser: 500-2	220100		
C-14	C7-804	SrY-90	C7-661
Th-230	C7-644	Tc-99	C7-641

Comments

Voltage: 900 Input Sensitivity: 35

4pi efficiencies for detector model 44-9 #PR171184 @ 0.25"

Th230 9.1%

Tc99 9.7%

SrY90 21.5%

C14 3.0%

Limited Use:

Detector selections 2, 3, and 4 are not calibrated

Statement of Certification

MJW Technical Sevices, Inc certifies that the above instrument has been calibrated by standards traceable to the National Institute of Standards and Technology, or to the calibration facilities of other International Standards organization members, or have been derived from accepted values of natural physical constants or have been derived by the ratio type of calibration techniques. The calibration system conforms to the requirements of ISO/IEC 17025 and ANSI N323. The Instrument listed above was inspected prior to shipment and it met all the manufacturer's published operating specifications. (MJW technical Services is not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated By: K J Rafferty

Reviewed By: [signature] Date 2-20-09

Calibration Date: 02/19/2009

Calibration Due: 02/19/2010

ABRERA SERVICES
RADIOLOGICAL / ENVIRONMENTAL REMEDIATION

HP INSTRUMEI QC FIELD LOG

units: cpm or m/hr
(circle one)

Make	Model	S/N	Probe	S/N	Cal Date
Ludlum	2221	81308	44-20	PR202073	7/6/2009
Bkg Count Time	**Source #1 Count Time**	**Source #2 Count Time**	**Source #1 ID**	**Source #2 ID**	**Cal Due Date**
1 min	1 min	N/A	1142	N/A	**7/6/2010**

Date(s)	7/9/2009									
Intial QC's	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**Init.**
Bkgd	**15456**	15575	15415	15327	15489	15389	15545	15366	15484	15413	LC
Source #1	**40456**	40457	40233	40333	40288	40681	40592	40624	40221	40302	LC
Source #2											

Daily QC's

Date	Bkgd	Source #1 (Co-60) α/β/γ	Source #2 ( ) α/β/γ	Battery OK?	Comments	Init.
7/9/09	15461	40135		(Yes) / No		LC
7/13/09	15031	40214		(Yes) / No		LC
7/14/09	15241	40467		(Yes) / No		LC
7/15/09				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		

Project#:_____ Project Name:_____

Certificate of Calibration

Voltage Plateau Form

ERG
Environmental Restoration Group, Inc.
8809 Washington St. NE, Suite 150
Albuquerque, NM 87113
(505) 298-4224

Detector Mfg.: Ludlum Model: 44-20 Serial No.: PR202073

Counter Mfg.: Ludlum Model: 2221 Serial No.: 81308

This calibration conforms to the requirements and acceptable calibration conditions of ANSI N323A - 1997.
NMRCB Registration No. 481-3 • Calibration of Radiation Detection Instruments & Devices

Counter Threshold Setting: 10 mV Cable Length: ☐ 39 inch, ☐ 5 foot, ☑ Other: Curly

Detector geometry to source: ☐ Face, ☑ Side, ☐ Below, ☐ Other:

Distance to source: ☐ Contact, ☑ 6-Inches, ☐ Other: 1/2"

Alpha Source : ☐ Th230 @ 12,900 dpm (2/18/09) sn: 4098-03 ☐ Other:

Beta Source: ☐ Tc99 @ 17,300 dpm (2/18/09) sn: 4099-03 ☐ Other:

Gamma Source : ☑ Cs-137 @ 5.32µCi (2/18/09) sn: 4097-03 ☐ Other: Am-241 1 µCi

Count Time: 1 Minute

High Voltage	Gross Source Counts	Background Counts
700	167787	
800	190683	
900	195320	
950	195874	
1000	196750	27002
1050	197713	
1100	197074	
1150	196789	
1200	200923	

Comments: Recommended Operating High Voltage: 1000 volts

Calibrated By: [signature] Calibration Date: 7-6-09

Calibration Due: 7-6-10

Reviewed By: [signature] Date: 7/6/09

Certificate of Calibration

Ratemeter / Scaler Certificate of Calibration

ERG
Environmental Restoration Group, Inc.
8809 Washington St. NE, Suite 150
Albuquerque, NM 87113
(505) 298-4224

Manufacturer: Ludlum Model: 2221 Serial No.: 81308

All Ranges Calibrated Electronically; Ludlum Pulser Generator Serial No.: ☐ 97743 ☑ 201932

This calibration conforms to the requirements and acceptable calibration conditions of ANSI N323A - 1997.
NMRCB Registration No. 481-3 • Calibration of Radiation Detection Instruments & Devices

☑ Mechanical ck. ☑ Meter Zeroed ☑ Geotropism ck. ☑ F/S Response ck. ☑ Audio ck.

☑ THR/WIN ck. High Voltage ck.: ☑ 500v ☑ 1000v ☑ 1500v ☑ Battery ck. (min 4.4 vdc)

Threshold Setting: 10 mV

Instrument found within tolerance (+/- 10%) ☑ Yes ☐ No

Reference Calibration Point	Instrument "As Found Reading"	Instrument Meter Reading
400 Kcpm	400 Kcpm	400 Kcpm
100 Kcpm	100 Kcpm	100 Kcpm
40 Kcpm	40 Kcpm	40 Kcpm
10 Kcpm	10 Kcpm	10 Kcpm
4 Kcpm	4 Kcpm	4 Kcpm
1 Kcpm	1 Kcpm	1 Kcpm
400 cpm	400 cpm	400 cpm
100 cpm	100 cpm	100 cpm

Reference Calibration Point	Instrument "As Found Reading"	Log Scale Count Rate	Integrated Counts (1-minute count)
400 Kcpm	400 Kcpm	400 Kcpm	398600
40 Kcpm	40 Kcpm	40 Kcpm	39863
4 Kcpm	4 Kcpm	4 Kcpm	3986
400 cpm	400 cpm	400 cpm	398

Calibrated By: _____ Calibration Date: 7-6-09

Calibration Due: 7-6-10

Reviewed By: _____ Date: 7/6/09

CABRERA SERVICES
RADIOLOGICAL • ENVIRONMENTAL REMEDIATION

HP INSTRUME(QC FIELD LOG

units: cpm o(2m/hr
(circle one)

Make	Model	S/N	Probe	S/N	Cal Date
Ludlum	2221	149940	44-20	PR269986	8/6/2009
Bkg Count Time	**Source #1 Count Time**	**Source #2 Count Time**	**Source #1 ID**	**Source #2 ID**	**Cal Due Date**
1 min	1 min	N/A	1142	N/A	**8/6/2010**

Date(s)	8/10/2009										
Intial QC's	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**Init.**
Bkgd	15154	15491	16636	16399	16392	15991	16270	16394	16458	15139	AC
Source #1	40684	40318	40098	39678	40009	39816	39962	40106	39981	39996	AC
Source #2	N									A	

Daily QC's

Date	Bkgd	Source #1 (Co-60) α/β/γ	Source #2 ( ) α/β/γ	Battery OK?	Comments	Init.
8/10/09	15340	39857		(Yes) / No		AC
8/11/09	15081	40608		(Yes) / No		AC
8/12/09	16091	40089		Yes / No		
				Yes / No		
				Yes / No		
			N	Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
			A	Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		

Project#:_____ Project Name:_____

Certificate of Calibration

Ratemeter / Scaler Certificate of Calibration

ERG
Environmental Restoration Group, Inc.
8809 Washington St. NE, Suite 150
Albuquerque, NM 87113
(505) 298-4224

Manufacturer: Ludlum Model: 2221 Serial No.: 149940

All Ranges Calibrated Electronically; Ludlum Pulser Generator Serial No.: ☐ 97743 ☑ 201932

This calibration conforms to the requirements and acceptable calibration conditions of ANSI N323A - 1997
NMRCB Registration No. 481-3 • Calibration of Radiation Detection Instruments & Devices

☑ Mechanical ck. ☑ Meter Zeroed ☑ Geotropism ck. ☑ F/S Response ck. ☑ Audio ck.

☑ THR/WIN ck. High Voltage ck.: ☑ 500v ☑ 1000v ☑ 1500v ☑ Battery ck. (min 4.4 vdc)

Threshold Setting: 10 mV

Instrument found within tolerance (+/- 10%) ☑ Yes ☐ No

Reference Calibration Point	Instrument "As Found Reading"	Instrument Meter Reading
400 Kcpm	400 Kcpm	400 Kcpm
100 Kcpm	100 Kcpm	100 Kcpm
40 Kcpm	40 Kcpm	40 Kcpm
10 Kcpm	10 Kcpm	10 Kcpm
4 Kcpm	4 Kcpm	4 Kcpm
1 Kcpm	1 Kcpm	1 Kcpm
400 cpm	400 cpm	400 cpm
100 cpm	100 cpm	100 cpm

Reference Calibration Point	Instrument "As Found Reading"	Log Scale Count Rate	Integrated Counts (1-minute count)
400 Kcpm	400 Kcpm	400 Kcpm	398685
40 Kcpm	40 Kcpm	40 Kcpm	39878
4 Kcpm	4 Kcpm	4 Kcpm	3988
400 cpm	400 cpm	400 cpm	399

Calibrated By: [signature] Calibration Date: 8-6-09

Calibration Due: 8-6-10

Reviewed By: [signature] Date: 8/6/09

Certificate of Calibration

Voltage Plateau Form

ERG
Environmental Restoration Group, Inc.
8809 Washington St. NE, Suite 150
Albuquerque, NM 87113
(505) 298-4224

Detector Mfg.: Ludlum Model: 44-20 Serial No.: PR269986

Counter Mfg.: Ludlum Model: 2221 Serial No.: 149940

This calibration conforms to the requirements and acceptable calibration conditions of ANSI N323A - 1997.
NMRCB Registration No. 481-3 - Calibration of Radiation Detection Instruments & Devices

Counter Threshold Setting: 10 mV Cable Length: ☐ 39 inch, ☐ 5 foot, ☑ Other: Curly CURLY

Detector geometry to source: ☐ Face, ☑ Side, ☐ Below, ☐ Other:

Distance to source: ☐ Contact, ☑ 6-Inches, ☐ Other: 15 cm

Alpha Source : ☐ Th230 @ 12,900 dpm (2/18/09) sn: 4098-03 ☐ Other:

Beta Source: ☐ Tc99 @ 17,300 dpm (2/18/09) sn: 4099-03 ☐ Other:

Gamma Source : ☑ Cs-137 @ 5.32µCi (2/18/09) sn: 4097-03 ☐ Other: Am-241 1 µCi

Count Time: 1 Minute

High Voltage	Gross Source Counts	Background Counts
700	160107	
800	185136	
900	190382	
950	192064	
1000	192396	
1050	194292	
1100	193406	24288
1150	193127	
1200	194383	

Comments: Recommended Operating High Voltage: 1100 volts

Calibrated By: Calibration Date: 8-6-09

Calibration Due: 8-6-10

Reviewed By: Date: 8/6/09

ABRERA SERVICES
RADIOLOGICAL • ENVIRONMENTAL • REMEDIATION

HP INSTRUMEN QC FIELD LOG

units: cpm o(:m/hr
(circle one)

Make	Model	S/N	Probe	S/N	Cal Date
Ludlum	2221	216473	44-20	PR262403	5/22/2010
Bkg Count Time	**Source #1 Count Time**	**Source #2 Count Time**	**Source #1 ID**	**Source #2 ID**	**Cal Due Date**
1 min	1 min	N/A	1142	N/A	**7/6/2010**

Date(s)	7/9/2009										
Intial QC's	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**Init.**
Bkgd	**15385**	15449	15015	15250	15332	15197	15219	15580	15366	15289	LC
Source #1	**45086**	45120	44425	44132	44920	44535	44842	44998	44592	44834	LC
Source #2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Daily QC's

Date	Bkgd	Source #1 (Co-60) α/β/γ	Source #2 ( ) α/β/γ	Battery OK?	Comments	Init.
7/9/09	15135	44765		(Yes) / No		LC
7/13/09	15305	44242		(Yes) / No		LC
7/14/09	15335	44365		(Yes) / No		LC
7/15/09	15719	39220		(Yes) / No	changed batteries	LC
7/16/09	15231	44212		(Yes) / No		LC
7/20/09	16339	46424		(Yes) / No	changed cord	LC
7/21/09	16121	45872		(Yes) / No		LC
7/22/09	15975	46325		(Yes) / No		LC
7/23/09	16237	45929		(Yes) / No		LC
7/27/09	15539	41927		(Yes) / No		LC
7/28/09	16789	43462		(Yes) / No		LC
7/29/09	15107	42188		(Yes) / No		LC/PR
7/30/09	15113	41867		(Yes) / No		LC/PR
8/3/09	15407	39728		(Yes) / No		LC
8/4/09	16031	41973		(Yes) / No		LC
8/5/09	15324	41510		(Yes) / No		LC
8/6/09	15672	44688		(Yes) / No		LC

Project#:_____ Project Name:_____

ABRERA SERVICES
RADIOLOGICAL · ENVIRONMENTAL · REMEDIATION

HP INSTRUMEI QC FIELD LOG

units: cpm o(m/hr
(circle one)

Daily QC's

Date	Bkgd	Source #1 ( ) α/β/γ	Source #2 ( ) α/β/γ	Battery OK?	Comments	Init.
8/10/09	17730	42726		(Yes) / No		LC
8/11/09	15049	41514		(Yes) / No		LC
8/12/09	15595	39618		(Yes) / No	Broken Glass on display	LC
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		

Project#:_____ Project Name:_____

MJW Technical Services
243 Root St.
Suite 100
Clean, New York 14760
Voice: (716) 372-5300
Fax: (716) 372-5307

Certificate Of Calibration

This Certificate will be accompanied by Calibration Charts or Readings where Applicable

Customer	Instrument
Customer Name: Cabrera Services Inc	Manufacturer: Ludlum Measurements
Address: 473 Silver Lane East Hartford, CT 06118	Model: 2221 Serial Number: 216473 Detector Manufacturer: Ludlum Measurements
Contact Name: Chuck Mikaitis	Det. Model: 44-20 Serial Number: PR262403
Customer PO/ CC. Number: 09-1360 / Work Order Number: 2009-1232	Calibration Method: Electronic

Instrument Received: ☑ Within Tolerance ☐ Out of Tolerance ☐ Repairs required ☐ Other (See Comments)

☑ Geotropism ☑ Meter Zero ☑ Mech. Ck. ☑ HV Readout ☑ Battery Check ☑ Reset

☑ Audio ☐ Window Status ☑ FS Response ☐ Linearity ☐ Background Subtract ☐ Alarm Set

Temperature: 72.2 F Humidity: 43 % Pressure: 729.0 mm Hg Altitude: 1450 ft

Instrument Calibration

Multiplier\Range	Calibration Point	Instrument Response	
		Before Calibration	After Calibration
X 1	100 cpm	100 cpm	100 cpm
X 1	400 cpm	400 cpm	400 cpm
X 10	1 kcpm	1.5 kcpm	1.5 kcpm
X 10	4 kcpm	4 kcpm	4 kcpm
X 100	10 kcpm	10.5 kcpm	10.5 kcpm
X 100	40 kcpm	40 kcpm	40 kcpm
X 1K	100 kcpm	105 kcpm	105 kcpm
X 1K	400 kcpm	400 kcpm	400 kcpm
Digital Ratemeter	40 cpm	40 cpm	40 cpm
Digital Ratemeter	400 cpm	398 cpm	398 cpm
Digital Ratemeter	4 kcpm	3.975 kcpm	3.975 kcpm
Digital Ratemeter	40 kcpm	39.856 kcpm	39.856 kcpm
Digital Ratemeter	400 kcpm	398.678 kcpm	398.678 kcpm
Digital Scaler	40 cpm	40 cpm	40 cpm
Digital Scaler	400 cpm	399 cpm	399 cpm
Digital Scaler	4 kcpm	3.987 kcpm	3.987 kcpm
Digital Scaler	40 kcpm	39.878 kcpm	39.878 kcpm
Digital Scaler	400 kcpm	398.779 kcpm	398.779 kcpm
Log Scale	50 cpm	50 cpm	50 cpm
Log Scale	500 cpm	500 cpm	500 cpm
Log Scale	5 kcpm	5 kcpm	5 kcpm
Log Scale	50 kcpm	50 kcpm	50 kcpm
Log Scale	500 kcpm	450 kcpm	450 kcpm

Reference instruments and / or Sources

Scaler: 2200	34451	Pulser: 500-2	220099
Am241	C7-660		

Comments

Inst. Voltage:	900 V	Isotope	Efficiency	Distance
Input Sensitivity:	10 mV	Am241	12.1%	0 inch

Ref. Voltage 1: 500 V
Inst. Voltage 1: 500 V
Ref. Voltage 2: 1500 V
Inst. Voltage 2: 1496 V

Model 2221 currently set for gross counts
Detector connected with a 60" cable
Model 44-20 energy resolution = 13%, acceptable detector energy resolution is <13% when using in "windowed" configuration

Statement of Certification

MJW Technical Sevices, Inc certifies that the above instrument has been calibrated by standards traceable to the National Institute of Standards and Technology, or to the calibration facilities of other International Standards organization members, or have been derived from accepted values of natural physical constants or have been derived by the ratio type of calibration techniques. The calibration system conforms to the requirements of ISO/IEC 17025 and ANSI N323. The instrument listed above was inspected prior to shipment and it met all the manufacturer's published operating specifications. (MJW technical Services is not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated By: _____ Reviewed By: _____ Date 05/24/2009

Calibration Date: 05/22/2009 Calibration Due: 05/22/2010

CABRERA SERVICES

HP INSTRUMENT QC FIELD LOG

units: cpm or µrem/h
(circle one)

Make	Model	S/N	Probe	S/N	Cal Date
Ludlum	2360	145481	43-89	PR154732	11/12/2008
Bkg Count Time	**Source #1 Count Time**	**Source #2 Count Time**	**Source #1 ID**	**Source #2 ID**	**Cal Due Date**
1	1	1	4006-02	1495	11/12/2009

Date(s)

Intial QC's	1	2	3	4	5	6	7	8	9	10	Init.
Bkgd	1/147	1/138	1/147	1/129	0/151	1/135	1/126	1/152	0/127	1/120	AC
Source #1	4228	4271	4240	4089	4184	4218	4149	4221	4216	4159	AC
Source #2	1090	1052	1061	1089	1037	1086	1059	1030	1023	1073	AC

Daily QC's

Date	Bkgd	Source #1 (Th-230) α/β/γ	Source #2 (Tc-99) α/β/γ	Battery OK?	Comments	Init.
7/15/09	2/172	4191	1019	(Yes) / No		AC
7/16/09	1/154	4202	1049	(Yes) / No		AC
7/20/09	1/141	4125	1033	(Yes) / No		AC
7/21/09	1/150	4189	1056	(Yes) / No		AC
7/22/09	1/149	4197	1063	(Yes) / No		AC
7/23/09	1/151	4214	1032	(Yes) / No		AC
7/27/09	1/147	4146	1090	(Yes) / No		AC
7/28/09	2/135	4189	1015	(Yes) / No		AC
7/29/09	2/153	4152	1063	(Yes) / No		AC
7/30/09	1/150	4187	1114	(Yes) / No		AC/PR
8/3/09	1/153	4280	1122	(Yes) / No		AC/PR
8/4/09	2/146	4135	1085	(Yes) / No		AC
8/5/09	1/158	4258	1052	(Yes) / No		AC
8/6/09	1/150	4025 ~~1094~~ AC	4/1094	(Yes) / No		AC
8/10/09	1/154	4147	1100	(Yes) / No		AC
8/11/09	1/170	4040	1041	(Yes) / No		
8/12/09	1/128	4111	1052	(Yes) / No		

Project#:_____ Project Name:_____

CABRERA SERVICES

HP INSTRUMENT QC FIELD LOG

units: cpm or µrem/hr
(circle one)

Daily QC's						
Date	**Bkgd**	**Source #1 ( ) α/β/γ**	**Source #2 ( ) α/β/γ**	**Battery OK?**	**Comments**	**Init.**
8/13/09	0/123	4045	1049	Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
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				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		

Project#:_____ Project Name:_____

MJW Technical Services
243 Root St.
Suite 100
Olean, New York 14760
Voice: (716) 372-5300
Fax: (716) 372-5307

Certificate Of Calibration

This Certificate will be accompanied by Calibration Charts or Readings where Applicable

Customer	Instrument
Customer Name: Cabrera Services Inc	Manufacturer: Ludlum Measurements
Address: 473 Silver Lane East Hartford, CT 06118	Model: 2360 Serial Number: 145481 Detector Manufacturer: Ludlum Measurements
Contact Name: Chuck Mikaitis	Det. Model: 43-89 Serial Number: PR154732
Customer PO/ CC. Number: 09-1154 / Work Order Number: 2008-590	Meterface: 202-855 Calibration Method: Electronic

Instrument Received: ☑ Within Toler. +-10% ☐ Within 10-20% ☐ Out of Tol. ☐ Requiring Repair ☐ Other (See Comments)

☑ Geotropism ☑ Meter Zero ☑ Mech. Ck. ☑ HV Readout ☑ Battery Check ☑ Reset

☑ Audio ☑ Window Status ☐ FS Response ☐ Linearity ☐ Background Subtract ☑ Alarm Set

Temperature: 70.9 F Humidity: 37 % Pressure: 731.5 mm Hg Altitude: 1450 ft

Instrument Calibration

Multiplier\Range	Calibration Point	Instrument Response	
		Before Calibration	After Calibration
X 1	100 cpm	96 cpm	96 cpm
X 1	400 cpm	397 cpm	397 cpm
X 10	1 Kcpm	0.96 Kcpm	0.96 Kcpm
X 10	4 Kcpm	3.98 Kcpm	3.98 Kcpm
X 100	10 Kcpm	9.5 Kcpm	9.5 Kcpm
X 100	40 Kcpm	39.8 Kcpm	39.8 Kcpm
X 1K	100 Kcpm	96 Kcpm	96 Kcpm
X 1K	400 Kcpm	398 Kcpm	398 Kcpm
Digital Scaler	40 cpm	40 cpm	40 cpm
Digital Scaler	400 cpm	398 cpm	398 cpm
Digital Scaler	4 Kcpm	3.984 Kcpm	3.984 Kcpm
Digital Scaler	40 Kcpm	39.847 Kcpm	39.847 Kcpm
Digital Scaler	400 Kcpm	398.47 Kcpm	398.47 Kcpm

Reference instruments and / or Sources

Pulser: 500-2	220100		
Pu-239	C7-640	Th-230	C7-643
C-14	C7-804	SrY-90	C7-638
Tc-99	C7-642		

Comments

Inst. Voltage: 836 V

Alpha threshold: 126 mV
Beta threshold: 3.4 mV
Beta window: 33.4 mV

4pi efficiencies on contact
C14 = 0.4%
Sr90 = 15.6%
Tc99 = 6.1%
Th230 = 17%

Alpha crosstalk in the Beta channel is <10%
Beta crosstalk in the Alpha channel is <1%

Statement of Certification

MJW Technical Sevices, Inc certifies that the above instrument has been calibrated by standards traceable to the National Institute of Standards and Technology, or to the calibration facilities of other International Standards organization members, or have been derived from accepted values of natural physical constants or have been derived by the ratio type of calibration techniques. The calibration system conforms to the requirements of ISO/IEC 17025 and ANSI N323. The Instrument listed above was inspected prior to shipment and it met all the manufacturer's published operating specifications. (MJW technical Services is not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated By: K Rakya

Reviewed By: [signature] Date 11-13-08

Calibration Date: 11/12/2008 Calibration Due: 11/12/2009

CABRERA SERVICES

HP INSTRUMENT QC FIELD LOG

units: cpm or µrem/hr
(circle one)

Make	Model	S/N	Probe	S/N	Cal Date
Ludlum	2929	163827	43-10-1	PR171322	9/2/2008
Bkg Count Time	**Source #1 Count Time**	**Source #2 Count Time**	**Source #1 ID**	**Source #2 ID**	**Cal Due Date**
2	2	2	4006-02	1495	9/2/2009

Date(s)	7/14/09										
Intial QC's	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**Init.**
Bkgd	0/97	0/105	1/89	0/78	0/98	1/95	1/83	0/106	0/93	0/97	LC
Source #1	18996	18957	19185	19249	18901	19134	18972	19167	19108	18991	LC
Source #2	5016	5030	5075	5085	5086	5039	5102	4967	5170	5044	LC

Daily QC's

Date	Bkgd	Source #1 (Th-230) α/β/γ	Source #2 (TC-99) α/β/γ	Battery OK?	Comments	Init.
7/15/09	0/93	19124	5078	(Yes) / No		LC
7/16/09	0/85	19243	5067	(Yes) / No		LC
7/20/09	0/90	19134	5057	(Yes) / No		LC
7/21/09	0/88	19241	5045	(Yes) / No		LC
7/22/09	1/91	19212	5058	(Yes) / No		LC
7/23/09	1/89	19216	5071	(Yes) / No		LC
7/27/09	0/105	19386	5061	(Yes) / No		LC
7/28/09	0/90	19239	5069	(Yes) / No		LC
7/29/09	0/99	19363	5018	(Yes) / No		LC/PR
7/30/09	1/102	19240	5074	(Yes) / No		LC/PR
8/3/09	1/113	19154	5031	(Yes) / No		LC/PR
8/4/09	0/84	19334	5108	(Yes) / No		LC
8/5/09	0/99	19412	4937	(Yes) / No		LC
8/6/09	1/90	19201	5052	(Yes) / No		LC
8/10/09	1/110	19340	5144	(Yes) / No		LC
8/11/09	0/95	19364	5117	(Yes) / No		LC
8/12	0/101	19378	4974	(Yes) / No		LC

Project#:_____ Project Name:_____

CABRERA SERVICES

HP INSTRUMENT QC FIELD LOG

units: cpm or µrem/hr
(circle one)

Daily QC's						
Date	**Bkgd**	**Source #1 ( ) α/β/γ**	**Source #2 ( ) α/β/γ**	**Battery OK?**	**Comments**	**Init.**
8/13/09	1/111	19345	5091	Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
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				Yes / No		
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				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		

Project#:_____ Project Name:_____

MJW Technical Services
243 Root St.
Suite 100
Olean, New York 14760
Voice: (716) 372-5300
Fax: (716) 372-5307

Certificate Of Calibration

This Certificate will be accompanied by Calibration Charts or Readings where Applicable

Customer

Customer Name: Cabrera Services Inc

Address: 473 Silver Lane
East Hartford, CT 06118

Contact Name: Chuck Mikaitis

Customer PO/
CC. Number: 09-1057

Work Order
Number: 2008-749

Instrument

Manufacturer: Ludlum Measurements

Model: 2929 Serial Number: 163827

Detector Manufacturer: Ludlum Measurements

Det. Model: 43-10-1 Serial Number: PR171322

Meterface: Calibration Method: Electronic

Instrument Received: ☑ Within Toler. +-10% ☐ Within 10-20% ☐ Out of Tol. ☐ Requiring Repair ☐ Other (See Comments)

☐ Geotropism ☐ Meter Zero ☑ Mech. Ck. ☑ HV Readout ☐ Battery Check ☐ Reset

☑ Audio ☐ Window Status ☐ FS Response ☐ Linearity ☐ Background Subtract ☐ Alarm Set

Temperature: 72.9 F Humidity: 50 % Pressure: 726.4 mm Hg Altitude: 1450 ft

Instrument Calibration

Multiplier\Range	Calibration Point	Instrument Response	
		Before Calibration	After Calibration
Alpha	40 cpm	40 cpm	40 cpm
Alpha	400 cpm	398 cpm	398 cpm
Alpha	4000 cpm	3980 cpm	3980 cpm
Alpha	40000 cpm	39801 cpm	39801 cpm
Alpha	400000 cpm	398002 cpm	398002 cpm
Beta-Gamma	40 cpm	40 cpm	40 cpm
Beta-Gamma	400 cpm	398 cpm	398 cpm
Beta-Gamma	4000 cpm	3979 cpm	3979 cpm
Beta-Gamma	40000 cpm	39794 cpm	39794 cpm
Beta-Gamma	400000 cpm	398892 cpm	398892 cpm

Reference instruments and / or Sources

Pulser: 500-2	220099	Oscilloscope: TDS1002	C062886
Pu-239	C7-635	Th-230	C7-643
C-14	C7-804	SrY-90	C7-638
Tc-99	C7-642		

Comments

Ref. Voltage1: 500 V Ref. Voltage2: 1500 V

Inst. Voltage1: 500 V Inst. Voltage 2: 1500 V

Amplifier gain: 25

Window status: Beta threshold - 4 mV
Beta window - 50 mV
Alpha threshold - 175 mV

Instrument Voltage set @ 820V = 3.30 on High Voltage dial

Alpha background is 0 cpm, Beta background is 44 cpm

Alpha crosstalk in the Beta channel is <10% with insert in place

Beta crosstalk in the Alpha channel is <1% with insert in place

4 pi Efficiency

Pu239 = 40.9%

C14 = 2.90% (2pi = 10.8%)

SrY90 = 34.4%

Th230 = 39.7%

Tc99 = 16.0% (2pi = 31.9%)

Statement of Certification

MJW Technical Sevices, Inc certifies that the above instrument has been calibrated by standards traceable to the National Institute of Standards and Technology, or to the calibration facilities of other International Standards organization members, or have been derived from accepted values of natural physical constants or have been derived by the ratio type of calibration techniques. The calibration system conforms to the requirements of ANS/NCSL Z540-1-1994 and ANSI N323. The instrument listed above was inspected prior to shipment and it met all the manufacturer's published operating specifications. (MJW technical Services is not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated By: [signature]

Reviewed By: [signature] Date 9-2-08

Calibration Date: 08/28/2008

Calibration Due: 08/28/2009

CABRERA SERVICES
RADIOLOGICAL ENVIRONMENTAL REMEDIATION

HP INSTRUMENT QC FIELD LOG

units: cpm or µ /hr (circle one)

Make	Model	S/N	Probe	S/N	Cal Date
Ludlum	44-20	PR233064	2221	123457	04/08/09
Bkg Count Time	**Source #1 Count Time**	**Source #2 Count Time**	**Source #1 ID**	**Source #2 ID**	**Cal Due Date**
1 min	1 min	N/A	1142	N/A	04/08/10

Date(s) 7/28/09

Intial QC's	1	2	3	4	5	6	7	8	9	10	Init.
Bkgd	132	102	111	131	128	113	129	120	110	137	LC
Source #1	755	731	775	694	732	755	691	771	791	745	LC
Source #2	N/A										

Daily QC's

Date	Bkgd	Source #1 (Co-60) α/β/γ	Source #2 (N/A) α/β/γ	Battery OK?	Comments	Init.
7/29/09	115	702		(Yes) / No		LC
~~7/3~~ 7/30/09	127	652		(Yes) / No		LC
8/3/09	119	753		(Yes) / No		LC
8/4/09	116	748		(Yes) / No		LC
8/5/09	119	704		(Yes) / No		LC
8/6/09	132	672		Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		

Project#:_____ [redacted] me:_____

CABRERA SERVICES
RADIOLOGICAL · ENVIRONMENTAL · REMEDIATION

HP INSTRUMENT QC FIELD LOG

units: cpm or µl /hr
(circle one)

Channel 1

Make	Model	S/N	Probe	S/N	Cal Date
Ludlum	44-20	PR202073	2221	81308	07/06/09
Bkg Count Time	**Source #1 Count Time**	**Source #2 Count Time**	**Source #1 ID**	**Source #2 ID**	**Cal Due Date**
1min	1min	N/A	1142	N/A	07/06/2016

Date(s): 07/28/2009

Intial QC's	1	2	3	4	5	6	7	8	9	10	Init.
Bkgd	102	132	112	120	126	142	106	141	114	158	LC
Source #1	790	841	851	855	888	815	800	790	832	817	LC
Source #2	N/A										

Daily QC's

Date	Bkgd	Source #1 (Co60) α/β/γ	Source #2 (N/A) α/β/γ	Battery OK?	Comments	Init.
7/29/09	111	858		(Yes) / No		LC
7/30/09	146	676		(Yes) / No		LC
8/3/09	135	791		(Yes) / No		LC
8/4/09	121	769		(Yes) / No		LC
8/5/09	129	790		(Yes) / No		LC
8/6/09	116	726		Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		

Project#:_____ Project Name:_____

LABRERA SERVICES
RADIOLOGICAL / ENVIRONMENTAL / REMEDIATION

HP INSTRUMENT QC FIELD LOG

units: (cpm) or µ /hr
(circle one)

Make	Model	S/N	Probe	S/N	Cal Date
Ludlum	44-20	PR209983	2221	138377	05/01/09
Bkg Count Time	**Source #1 Count Time**	**Source #2 Count Time**	**Source #1 ID**	**Source #2 ID**	**Cal Due Date**
1 min	1 min	N/A	1142	N/A	05/01/10

Date(s): 07/28/2009

Intial QC's	1	2	3	4	5	6	7	8	9	10	Init.
Bkgd	116	121	110	133	99	137	125	106	116	122	LC
Source #1	681	729	696	701	753	693	777	724	725	718	LC
Source #2	N/A										

Daily QC's

Date	Bkgd	Source #1 (Co-60) α/β/γ	Source #2 (N/A) α/β/γ	Battery OK?	Comments	Init.
7/29/09	126	689		(Yes) / No		LC
7/30/09	117	778		(Yes) / No		LC
8/3/09	122	742		(Yes) / No		LC
8/4/09	133	718		(Yes) / No		LC
8/5/09	113	701		(Yes) / No		LC
8/6/09	136	703		Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		

Project#:_____ Project Name:_____

CABRERA SERVICES
RADIOLOGICAL · ENVIRONMENTAL · REMEDIATION

HP INSTRUMENT QC FIELD LOG

units: cpm or [illegible]/hr
(circle one)

Channel 1

Make	Model	S/N	Probe	S/N	Cal Date
Ludlum	44-20	PR202073 ~~073008-31~~	2221	81308	07/06/2009
Bkg Count Time	**Source #1 Count Time**	**Source #2 Count Time**	**Source #1 ID**	**Source #2 ID**	**Cal Due Date**
1 min	1 min	N/A	1142	N/A	07/06/2010

Date(s)	07/27/2009										
Intial QC's	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**Init.**
Bkgd	99	107	89	105	103	116	84	111	120	100	LC
Source #1	687	724	683	701	639	669	716	656	655	710	LC
Source #2	N/A										

Daily QC's

Date	Bkgd	Source #1 (Co-60) α/β/γ	Source #2 (N/A) α/β/γ	Battery OK?	Comments	Init.
7/27/09	96	640		Yes / No		LC
7/28/09	107	773		Yes / No		LC
				Yes / No		
				Yes / No		
				Yes / No		
	N			Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
		A		Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		

Project#:_____ Project Name:_____

CABRERA SERVICES
RADIOLOGICAL · ENVIRONMENTAL · REMEDIATION

HP INSTRUMENT QC FIELD LOG

units: (cpm) or (n/hr
(circle one)

Channel 2

Make	Model	S/N	Probe	S/N	Cal Date
Ludlum	44-20	PR269983	2221	138377	05/01/2009
Bkg Count Time	**Source #1 Count Time**	**Source #2 Count Time**	**Source #1 ID**	**Source #2 ID**	**Cal Due Date**
1 min	1 min	N/A	1142	N/A	05/01/2010

Date(s): 07/27/2009

Intial QC's	1	2	3	4	5	6	7	8	9	10	Init.
Bkgd	124	114	117	112	136	102	104	118	105	95	LC
Source #1	725	728	764	776	799	739	791	754	685	744	LC
Source #2	N/A										

Daily QC's

Date	Bkgd	Source #1 (Co-60) α/β/γ	Source #2 (N/A) α/β/γ	Battery OK?	Comments	Init.
7/27/09	124	733		(Yes) / No		LC
7/28/09	115	727		(Yes) / No		LC
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
	N			Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
		A		Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		

Project#:_____ Project Name:_____

CABRERA SERVICES
RADIOLOGICAL · ENVIRONMENTAL · REMEDIATION

HP INSTRUMENT QC FIELD LOG

units: (cpm) or ( ) n/hr
(circle one)

Channel 3

Make	Model	S/N	Probe	S/N	Cal Date
Ludlum	44-20	PR233064	2221	125457	04/08/2009
Bkg Count Time	**Source #1 Count Time**	**Source #2 Count Time**	**Source #1 ID**	**Source #2 ID**	**Cal Due Date**
1 min	1 min	N/A	1142	N/A	04/08/2010

Date(s): 07/27/2009

Initial QC's	1	2	3	4	5	6	7	8	9	10	Init.
Bkgd	118	125	110	137	114	121	101	94	119	125	LC
Source #1	727	705	770	779	784	773	810	786	704	715	LC
Source #2	N/A										

Daily QC's

Date	Bkgd	Source #1 (Co-60) α/(β)/γ	Source #2 (N/A) α/β/γ	Battery OK?	Comments	Init.
7/27/09	120	770		(Yes) / No		LC
7/28/09	117	714		(Yes) / No		LC
				Yes / No		
				Yes / No		
				Yes / No		
		N		Yes / No		
				Yes / No		
				Yes / No		
			A	Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		

Project#:_____ Project Name:_____

CABRERA SERVICES

HP INSTRUMENT QC FIELD LOG

units: cpm or µrem/hr
(circle one)

Make	Model	S/N	Probe	S/N	Cal Date
Ludlum	19	144766	N/A	N/A	4/30/09
Bkg Count Time	**Source #1 Count Time**	**Source #2 Count Time**	**Source #1 ID**	**Source #2 ID**	**Cal Due Date**
1	1	N/A	1142	N/A	4/30/10

Date(s)	7/9/09										
Initial QC's	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**Init.**
Bkgd	5	5	6	7	5	6	6	5	8	7	
Source #1	190	200	180	210	200	200	180	200	210	190	LC
Source #2		N							A		

Daily QC's

Date	Bkgd	Source #1 (Co-60) α/β/γ	Source #2 ( ) α/β/γ	Battery OK?	Comments	Init.
7/9/09	5	200		(Yes) / No		LC
7/13/09	6	210		(Yes) / No		LC
7/14/09	7	210		(Yes) / No		LC
7/15/09	6	200		(Yes) / No		LC
7/16/09	7	200	N	(Yes) / No		LC
7/20/09	6	190		(Yes) / No		LC
7/21/09	6	200		(Yes) / No		LC
7/22/09	7	200		(Yes) / No		LC
7/23/09	7	190		(Yes) / No		LC
7/27/09	6	200	A	(Yes) / No		LC
7/28/09	7	200		(Yes) / No		LC
7/29/09	6	200		(Yes) / No		LC/FR
7/30/09	7	200		(Yes) / No		LC/FR
8/3/09	7	210		(Yes) / No		LC
8/4/09	6	200		(Yes) / No		LC
8/5/09	7	190		(Yes) / No		LC
8/6/09	7	200		(Yes) / No		LC

Project#:_____ Project Name:_____

CABRERA SERVICES

HP INSTRUMENT QC FIELD LOG

units: cpm or µrem/hr
(circle one)

Daily QC's						
Date	**Bkgd**	**Source #1 ( ) α/β/γ**	**Source #2 ( ) α/β/γ**	**Battery OK?**	**Comments**	**Init.**
8/10/09	7	220		(Yes) / No		LC
8/11/09	7	200		(Yes) / No		LC
8/12/09	7	200		(Yes) / No		LC
8/13/09	7	210		(Yes) / No		LC
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		
				Yes / No		

Project#:_____ Project Name:_____

Designer and Manufacturer of Scientific and Industrial Instruments

CERTIFICATE OF CALIBRATION

LUDLUM MEASUREMENTS, INC.
POST OFFICE BOX 810 PH. 325-235-5494
501 OAK STREET FAX NO. 325-235-4672
SWEETWATER, TEXAS 79556, U.S.A.

CUSTOMER ERG (ENVIRONMENTAL RESTORATION) ORDER NO. 20132799/337383

Mfg. Ludlum Measurements, Inc. Model 19 Serial No. 144766

Mfg. Model Serial No.

Cal. Date 30 APR 09 Cal Due Date 30 APR 10 Cal. Interval 1 Year Meterface 202-016

Check mark ☑ applies to applicable instr. and/or detector IAW mfg. spec. T. 74 °F RH 56 % Alt 699.8 mm Hg

☐ New Instrument Instrument Received ☐ Within Toler. +-10% ☑ 10-20% ☐ Out of Tol. ☐ Requiring Repair ☐ Other-See comments

☑ Mechanical ck. ☑ Meter Zeroed ☐ Background Subtract ☐ Input Sens. Linearity
☑ F/S Resp. ck ☑ Reset ck. ☐ Window Operation ☐ Geotropism
☑ Audio ck. ☐ Alarm Setting ck. ☑ Batt. ck. (Min. Volt) 2.2 VDC
☐ Calibrated in accordance with LMI SOP 14.8 rev 12/05/89. ☑ Calibrated in accordance with LMI SOP 14.9 rev 02/07/97.

Instrument Volt Set 670 V Input Sens. 33 mV Det. Oper. V at mV Threshold Dial Ratio = mV

☐ HV Readout (2 points) Ref./Inst. / V Ref./Inst. / V

COMMENTS:

Gamma Calibration: GM detectors positioned perpendicular to source except for M 44-9 in which the front of probe faces source.

RANGE/MULTIPLIER	REFERENCE CAL. POINT	INSTRUMENT REC'D "AS FOUND READING"	INSTRUMENT METER READING*
5000	4000 uR/hr	4200	4000
5000	1000 uR/hr	1100	1000
500	400 uR/hr = 76600 cpm	420	400
500	100 uR/hr	110	100
250	200 uR/hr = 38000 cpm	220	200
250	100 uR/hr	120	100
50	7660 cpm	39	40
50	1910 cpm	10	10
25	3800 cpm	19.5	20
25	950 cpm	5	5

*Uncertainty within ± 10% C.F. within ± 20% 50, 25 Range(s) Calibrated Electronically

	REFERENCE CAL. POINT	INSTRUMENT RECEIVED	INSTRUMENT METER READING*		REFERENCE CAL. POINT	INSTRUMENT RECEIVED	INSTRUMENT METER READING*
gital adout				Log Scale			

lum Measurements, Inc. certifies that the above instrument has been calibrated by standards traceable to the National Institute of Standards and Technology, or to the calibration facilities of er International Standards Organization members, or have been derived from accepted values of natural physical constants or have been derived by the ratio type of calibration techniques. calibration system conforms to the requirements of ANSI/NCSL Z540-1-1994 and ANSI N323-1978 State of Texas Calibration License No. LO-1963

eference Instruments and/or Sources: ☐ S-394/1122 ☐ 1131 ☐ 781 ☐ 059 ☑ 280 ☐ 60646
-137 Gamma S/N ☐ 1162 ☐ G112 ☐ M565 ☐ 5105 ☐ T1008 ☐ T879 ☐ E552 ☐ E551 ☐ 720 ☐ 734 ☐ 1616 ☐ Neutron Am-241 Be S/N T-304

☐ Alpha S/N ☐ Beta S/N ☐ Other

☑ m 500 S/N 251106 ☐ Oscilloscope S/N ☑ Multimeter S/N 69101832

alibrated By: Robert J Lepor Date 30 APR 09

eviewed By: Rhonda Hann Date 4 May 09

is certificate shall not be reproduced except in full, without the written approval of Ludlum Measurements, Inc
ORM C22A 10/15/2008

AC Inst. Only ☐ Passed Dielectric (Hi-Pot) and Continuity Test ☐ Failed:

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APPENDIX E

CHAIN OF CUSTODY

Columbia Analytical Services (CAS)

GEL Laboratories

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Columbia Analytical Services (CAS)

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ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

CAS/Rochester
1 Mustard St., suite 250
Rochester, NY 14609
ph.: 585-288-5380
fax: 585-288-8475
e-mail: mperry@rochester.caslab.com

Serial or COC #:
Possible Hazards: Unknown
Sample Disposal: Lab Disposal

PROJECT & CLIENT INFORMATION		Project State
PROJECT REFERENCE/NAME: SEAD-12 RA	PROJECT NO.: 746762-02000	NY
LAB PROJECT MANAGER: Mike Perry	P.O. NUMBER: 746762-02000-00	CONTRACT/Quote NO.: 746762-02000-00
CLIENT (SITE) PM: Jeff Adams/Brendan Baranek-Olmstead	CLIENT PHONE: 617-285-6821(BBO)	CLIENT FAX: 617-946-9777
CLIENT NAME: Parsons	CLIENT EMAIL: Brendan.Baranek-Olmstead@parsons.com	
CLIENT ADDRESS: 100 High Street, Boston, MA 02110		
Samplers Signature & Initials:		

PAGE 1 OF 2

Final Report Type (Circle at least one): ASP2000
Category B
EDD 5 calendar days
TAT/ DATE DUE 15 ____Per QAP/Quote
EXPEDITED REPORT (circle one)
FAX EMAIL POST Other
TAT/ DATE DUE

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

SAMPLED ON DATE	SAMPLED ON TIME	SAMPLE IDENTIFICATION	LABORATORY SAMPLE ID	SAMPLE TYPE	FIELD FILTERED	MATRIX	TCL VOCs - Method 8260B	TCL SVOCs - Method 8270C	Pesticide - Method 8081A	PCBs - Method 8082	TAL Metals - Method 6010B/7471A	Cyanide - Method 9012	REMARKS
							8	8	8	8			
							NUMBER OF CONTAINERS SUBMITTED						
7/29/2009	1040	S12EXFL-B-2-01		G		S	1	1	1	1			1. Please run a straight sample analysis (without dilution) for every sample. 2. Please select one project sample for QA/QC analysis.
7/29/2009	940	S12EXFL-C-2-01		G		S	1	1	1	1			
7/29/2009	1020	S12EXFL-E-1-01		G		S	1	1	1	1			
7/29/2009	1110	S12EXPR-B-1-01		G		S	1	1	1	1			
7/29/2009	1310	S12EXFL-J-4-01		G		S	1	1	1	1			
7/29/2009	1210	S12EXFL-K-3-01		G		S	1	1	1	1			
7/29/2009	1030	S12EXPR-E-1-01		G		S	1	1	1	1			Preservative
7/29/2009	1100	S12EXPR-A-2-01		G		S	1	1	1	1			
7/29/2009	950	S12EXPR-C-1-01		G		S	1	1	1	1			
7/29/2009	930	S12EXPR-C-2-01		G		S	1	1	1	1			8 Ice
7/29/2009	1010	S12EXPR-D-1-01		G		S	1	1	1	1			

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
Ben McMillan	7/29	15 30				Brian Mack	7/29/09	1730
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
Brian Mack	7/29/09	1531	Rachel Jones	7/29/09	1730			

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT YES NO	CUSTODY SEAL NO.	LABORATORY REMARKS:
			NO		

R0904203
Parsons Engineering Science
SEAD-12

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

CAS/Rochester
1 Mustard St., suite 250
Rochester, NY 14609
ph.:585-288-5380
fax: 585-288-8475
e-mail: mperry@rochester.caslab.com

Serial or COC #:
Possible Hazards: Unknown
Sample Disposal: Lab Disposal

PROJECT & CLIENT INFORMATION		Project State
PROJECT REFERENCE/NAME: SEAD-12 RA	PROJECT NO.: 746762-02000	NY
LAB PROJECT MANAGER: Mike Perry	P.O. NUMBER: 746762-02000-00	CONTRACT/Quote NO.: 746762-02000-00
CLIENT (SITE) PM: Jeff Adams/Brendan Baranek-Olmstead	CLIENT PHONE: 617-285-6821(BBO)	CLIENT FAX: 617-946-9777
CLIENT NAME: Parsons	CLIENT EMAIL: Brendan.Baranek-Olmstead@parsons.com	
CLIENT ADDRESS: 100 High Street, Boston, MA 02110		
Samplers Signature & Initials:		

PAGE 2 OF 2

Final Report Type (Circle at least one): ASP2000
Category B
EDD 5 calendar days
TAT/ DATE DUE 15 ____Per
QAP/Quote
EXPEDITED REPORT (circle one)
FAX EMAIL POST Other
TAT/ DATE DUE

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

SAMPLED ON DATE	SAMPLED ON TIME	SAMPLE IDENTIFICATION	LABORATORY SAMPLE ID	SAMPLE TYPE	FIELD FILTERED	MATRIX	TCL VOCs - Method 8260B	TCL SVOCs - Method 8270C	Pesticide - Method 8081A PCBs - Method 8082	TAL Metals - Method 6010B/7471A Cyanide - Method 9012							REMARKS
				Sample Information			REQUIRED ANALYSES										
							8	8	8	8							
							NUMBER OF CONTAINERS SUBMITTED										
7/29/2009	1220	S12EXFL-I-3-01		G		S	1	1	1	1							1. Please run a straight sample analysis (without dilution) for every sample. 2. Please select one project sample for QA/QC analysis.
7/29/2009	1230	S12EXFL-I-3-02		G		S	1	1	1	1							
7/29/2009	1220	S12EXFL-I-3-01MS		G		S	1	1	1	1							
7/29/2009	1220	S12EXPR-I-3-01MSD		G		S	1	1	1	1							
																	Preservative
																	8 Ice

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
Ben McAllister	7/29	1530				Brian Mackin	7/29/09	1730
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
Brian Mackin	7/29/09	1530	Rachel Jones	7/29/09	1730			

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT YES ○ NO ○	CUSTODY SEAL NO.	LABORATORY REMARKS:

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

CAS/Rochester
1 Mustard St., suite 250
Rochester, NY 14609
ph.:585-288-5380
fax: 585-288-8475
e-mail: mperry@rochester.caslab.com

Serial or COC #:
Possible Hazards: Unknown
Sample Disposal: Lab Disposal

PAGE 1 OF 2

PROJECT & CLIENT INFORMATION

PROJECT REFERENCE/NAME: SEAD-12 RA	PROJECT NO.: 746762-02000	Project State: NY
LAB PROJECT MANAGER: Mike Perry	P.O. NUMBER: 746762-02000-00	CONTRACT/Quote NO.: 746762-02000-00
CLIENT (SITE) PM: Jeff Adams/Brendan Baranek-Olmstead	CLIENT PHONE: 617-285-6821(BBO)	CLIENT FAX: 617-946-9777
CLIENT NAME: Parsons	CLIENT EMAIL: Brendan.Baranek-Olmstead@parsons.com	
CLIENT ADDRESS: 100 High Street, Boston, MA 02110		
Samplers Signature & Initials:		

Final Report Type (Circle at least one): ASP2000 Category B
EDD 5 calendar days
TAT/ DATE DUE 15 ____Per QAP/Quote
EXPEDITED REPORT (circle one) FAX EMAIL POST Other
TAT/ DATE DUE
NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

SAMPLED ON DATE	SAMPLED ON TIME	SAMPLE IDENTIFICATION	LABORATORY SAMPLE ID	SAMPLE TYPE	FIELD FILTERED	MATRIX	TCL VOCs - Method 8260B	TCL SVOCs - Method 8270C	Pesticide - Method 8081A PCBs - Method 8082	TAL Metals - Method 6010B/7471A Cyanide - Method 9012						REMARKS
							8	8	8	8						
							NUMBER OF CONTAINERS SUBMITTED									
7/29/2009	1130	S12EXPR-I-3-01		G		S	1	1	1	1						1. Please run a straight sample analysis (without dilution) for every sample. 2. Please select one project sample for QA/QC analysis.
7/29/2009	1150	S12EXPR-J-2-01		G		S	1	1	1	1						
7/29/2009	1350	S12EXPR-J-3-01		G		S	1	1	1	1						
7/29/2009	1330	S12EXPR-J-4-01		G		S	1	1	1	1						
7/29/2009	1320	S12EXPR-J-4-02		G		S	1	1	1	1						
7/29/2009	1300	S12EXPR-J-4-03		G		S	1	1	1	1						Preservative
7/29/2009	1400	S12EXPR-J-5-01		G		S	1	1	1	1						
7/29/2009	1210	S12EXPR-K-3-01		G		S	1	1	1	1						
7/29/2009	1340	S12EXPR-K-4-01		G		S	1	1	1	1						8 Ice

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
Ben McAllister	7/29	1530				Brian Madsen	7/29/09	1730
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
Brian Madsen	7/29/09	1530	Rachel Jones	7/29/09	1730			

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	LABORATORY REMARKS:
			YES NO 8		

Original - Return to Laboratory with Sample(s)

00012

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

CAS/Rochester
1 Mustard St., suite 250
Rochester, NY 14609
ph. 585-288-5380
fax. 585-288-8475
e-mail: mperry@rochester.caslab.com

Serial or COC #:
Possible Hazards: Unknown
Sample Disposal: Lab Disposal

PAGE 2 OF 2

PROJECT & CLIENT INFORMATION

PROJECT REFERENCE/NAME: SEAD-12 RA	PROJECT NO.: 746762-02000	Project State: NY
LAB PROJECT MANAGER: Mike Perry	P.O. NUMBER: 746762-02000-00	CONTRACT/Quote NO.: 746762-02000-00
CLIENT (SITE) PM: Jeff Adams/Brendan Baranek-Olmstead	CLIENT PHONE: 617-285-6821(BBO)	CLIENT FAX: 617-946-9777
CLIENT NAME: Parsons	CLIENT EMAIL: Brendan.Baranek-Olmstead@parsons.com	
CLIENT ADDRESS: 100 High Street, Boston, MA 02110		
Samplers Signature & Initials:		

Final Report Type (Circle at least one): ASP2000
Category B
EDD 5 calendar days
TAT/ DATE DUE 15 ____Per
QAP/Quote
EXPEDITED REPORT (circle one)
FAX EMAIL POST Other
TAT/ DATE DUE

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

REQUIRED ANALYSES

SAMPLED ON DATE	SAMPLED ON TIME	SAMPLE IDENTIFICATION	LABORATORY SAMPLE ID	SAMPLE TYPE	FIELD FILTERED	MATRIX	TCL VOCs - Method 8260B	TCL SVOCs - Method 8270C	Pesticide - Method 8081A PCBs - Method 8082	TAL Metals - Method 6010B/7471A Cyanide - Method 9012						REMARKS
							8	8	8	8						
7/29/2009	1000	S12EXPR-D-2-01		G		S	1	1	1	1						1. Please run a straight sample analysis (without dilution) for every sample. 2. Please select one project sample for QA/QC analysis.
7/29/2009	1050	S12EXPR-B-2-01		G		S	1	1	1	1						
7/29/2009	1055	S12EXPR-B-2-02		G		S	1	1	1	1						
7/29/2009	1050	S12EXFL-B-2-01XMS		G		S	1	1	1	1						
7/29/2009	1050	S12EXFL-B-2-01XMSD		G		S	1	1	1	1						
7/29/2009	1500	TB072909-1		G		W	1									
7/29/2009	1140	S12EXPR-I-2-01		G		S	1	1	1	1						Preservative
																8 Ice

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
Ben McAllister	7/29	1530				Brian Mackin	7/29/09	1730
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
Brian Mackin	7/29/09	1530	Rachel Jones	7/29/09	1730			

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT YES NO	CUSTODY SEAL NO.	LABORATORY REMARKS:
			8		

QC volume received for S12EXPR-B-2-01 not for S12EXFL-B-2-01 as listed on COC. QC location designated by lab as ↗ to match sample containers. ALH 7/30/09. Mike Perry notified.

Original - Return to Laboratory with Sample(s)

00013

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

CAS/Rochester
1 Mustard St., suite 250
Rochester, NY 14609
ph.:585-288-5380
fax: 585-288-8475
e-mail: mperry@rochester.caslab.com

Serial or COC #:300709-02
Possible Hazards: Unknown
Sample Disposal: Lab Disposal

PROJECT & CLIENT INFORMATION		Project State
PROJECT REFERENCE/NAME: SEAD-12 RA	PROJECT NO.: 746762-02000	NY
LAB PROJECT MANAGER: Mike Perry	P.O. NUMBER: 746762-02000-00	CONTRACT/Quote NO.: 746762-02000-00
CLIENT (SITE) PM: Jeff Adams/Brendan Baranek-Olmstead	CLIENT PHONE: 617-285-6821(BBO)	CLIENT FAX: 617-946-9777
CLIENT NAME: Parsons	CLIENT EMAIL: Brendan.Baranek-Olmstead@parsons.com	
CLIENT ADDRESS: 100 High Street, Boston, MA 02110		
Samplers Signature & Initials:		

PAGE 1 OF 2

Final Report Type (Circle at least one): ASP2000 Category B
EDD 5 calendar days
TAT/ DATE DUE 15 ____Per QAP/Quote
EXPEDITED REPORT (circle one)
FAX EMAIL POST Other
TAT/ DATE DUE

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

SAMPLED ON DATE	SAMPLED ON TIME	SAMPLE IDENTIFICATION	LABORATORY SAMPLE ID	SAMPLE TYPE	FIELD FILTERED	MATRIX	TCL VOCs - Method 8260B	TCL SVOCs - Method 8270C	Pesticide - Method 8081A PCBs - Method 8082	TAL Metals - Method 6010B/7471A Cyanide - Method 9012							REMARKS
				Sample Information			REQUIRED ANALYSES										
							8	8	8	8							
							NUMBER OF CONTAINERS SUBMITTED										
7/30/2009	1400	S12EXFL-N-9-01		G		S	1	1	1	1							1. Please run a straight sample analysis (without dilution) for every sample. 2. Please select one project sample for QA/QC analysis.
7/30/2009	1420	S12EXFL-N-9-02		G		S	1	1	1	1							
7/30/2009	1440	S12EXFL-O-10-01		G		S	1	1	1	1							
7/30/2009	800	S12EXPR-N-10-01		G		S	1	1	1	1							
7/30/2009	1500	S12EXPR-N-10-02		G		S	1	1	1	1							
7/30/2009	810	S12EXPR-N-9-01		G		S	1	1	1	1							
7/30/2009	1450	S12EXPR-O-10-01		G		S	1	1	1	1							
7/30/2009	1550	S12EXPR-O-7-01		G		S	1	1	1	1							
7/30/2009	1600	S12EXPR-O-8-01		G		S	1	1	1	1							
7/30/2009	1520	S12EXPR-O-8-02		G		S	1	1	1	1							

Preservative

8 Ice

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
Ben McAllister	7/30	1900						
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
Amy Hendricks	7/31/09	950						

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT YES NO	CUSTODY SEAL NO.	LABORATORY REMARKS:
			NO		

R0904258
Parsons Engineering Science
SEAD-12

Original - Return to Laboratory with Sample(s)

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

CAS/Rochester
1 Mustard St., suite 250
Rochester, NY 14609
ph.:585-288-5380
fax: 585-288-8475
e-mail: mperry@rochester.caslab.com

Serial or COC #:300709-02
Possible Hazards: Unknown
Sample Disposal: Lab Disposal

PROJECT & CLIENT INFORMATION

PROJECT REFERENCE/NAME: SEAD-12 RA	PROJECT NO.: 746762-02000	Project State: NY
LAB PROJECT MANAGER: Mike Perry	P.O. NUMBER: 746762-02000-00	CONTRACT/Quote NO.: 746762-02000-00
CLIENT (SITE) PM: Jeff Adams/Brendan Baranek-Olmstead	CLIENT PHONE: 617-285-6821(BBO)	CLIENT FAX: 617-946-9777
CLIENT NAME: Parsons	CLIENT EMAIL: Brendan.Baranek-Olmstead@parsons.com	
CLIENT ADDRESS: 100 High Street, Boston, MA 02110		
Samplers Signature & Initials:		

PAGE 1 OF 2

Final Report Type (Circle at least one): ASP2000
Category B
EDD 5 calendar days
TAT/ DATE DUE 15 ____Per
QAP/Quote
EXPEDITED REPORT (circle one)
FAX EMAIL POST Other
TAT/ DATE DUE

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

SAMPLED ON DATE	SAMPLED ON TIME	SAMPLE IDENTIFICATION	LABORATORY SAMPLE ID	SAMPLE TYPE	FIELD FILTERED	MATRIX	TCL VOCs - Method 8260B	TCL SVOCs - Method 8270C	Pesticide - Method 8081A PCBs - Method 8082	TAL Metals - Method 6010B/7471A Cyanide - Method 9012							REMARKS
							8	8	8	8							
							NUMBER OF CONTAINERS SUBMITTED										
7/30/2009	1400	S12EXFL-N-9-01		G		S	1	1	1	1							1. Please run a straight sample analysis (without dilution) for every sample. 2. Please select one project sample for QA/QC analysis.
7/30/2009	1420	S12EXFL-N-9-02		G		S	1	1	1	1							
7/30/2009	1440	S12EXFL-O-10-01		G		S	1	1	1	1							
7/30/2009	800	S12EXPR-N-10-01		G		S	1	1	1	1							
7/30/2009	1500	S12EXPR-N-10-02		G		S	1	1	1	1							
7/30/2009	810	S12EXPR-N-9-01		G		S	1	1	1	1							
7/30/2009	1450	S12EXPR-O-10-01		G		S	1	1	1	1							Preservative
7/30/2009	1550	S12EXPR-O-7-01		G		S	1	1	1	1							
7/30/2009	1600	S12EXPR-O-8-01		G		S	1	1	1	1							
7/30/2009	1520	S12EXPR-O-8-02		G		S	1	1	1	1							8 Ice

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
Ben McAllister	7/30	1900						
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
Amy Hewitt	7/31/09	950						

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT YES ○ NO ○	CUSTODY SEAL NO.	LABORATORY REMARKS:

0061

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

CAS/Rochester
1 Mustard St., suite 250
Rochester, NY 14609
ph.:585-288-5380
fax: 585-288-8475
e-mail: mperry@rochester.caslab.com

Serial or COC #:300709-02
Possible Hazards: Unknown
Sample Disposal: Lab Disposal

PAGE 2 OF 2

PROJECT & CLIENT INFORMATION

PROJECT REFERENCE/NAME: SEAD-12 RA	PROJECT NO.: 746762-02000	Project State: NY
LAB PROJECT MANAGER: Mike Perry	P.O. NUMBER: 746762-02000-00	CONTRACT/Quote NO.: 746762-02000-00
CLIENT (SITE) PM: Jeff Adams/Brendan Baranek-Olmstead	CLIENT PHONE: 617-285-6821(BBO)	CLIENT FAX: 617-946-9777
CLIENT NAME: Parsons	CLIENT EMAIL: Brendan.Baranek-Olmstead@parsons.com	
CLIENT ADDRESS: 100 High Street, Boston, MA 02110		
Samplers Signature & Initials:		

Final Report Type (Circle at least one): ASP2000
Category B
EDD 5 calendar days
TAT/ DATE DUE 15 ____Per
QAP/Quote
EXPEDITED REPORT (circle one)
FAX EMAIL POST Other
TAT/ DATE DUE

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

Sample Information

REQUIRED ANALYSES

SAMPLED ON DATE	SAMPLED ON TIME	SAMPLE IDENTIFICATION	LABORATORY SAMPLE ID	SAMPLE TYPE	FIELD FILTERED	MATRIX	TCL VOCs - Method 8260B	TCL SVOCs - Method 8270C	Pesticide - Method 8081A PCBs - Method 8082	TAL Metals - Method 6010B/7471A Cyanide - Method 9012						
							8	8	8	8						
073009	1530	S12EXPR-O-8-03		G		S	1	1	1	1						
073009	1540	S12EXPR-O-8-04		G		S	1	1	1	1						
073009	1530	S12EXPR-O-8-03MS		G		S	1	1	1	1						
073009	1530	S12EXPR-O-8-03MSD		G		S	1	1	1	1						
073009	1430	S12EXPR-O-9-01		G		S	1	1	1	1						
073009	1115	S12-STOCK-C1-01		G		S	1	1	1	1						

NUMBER OF CONTAINERS SUBMITTED

REMARKS

1. Please run a straight sample analysis (without dilution) for every sample.
2. Please select one project sample for QA/QC analysis.

Preservative

8 Ice

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
Ben McAllister	7/30	1900						
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
Amy Hewitt	7/31/09	950						

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	LABORATORY REMARKS:
			YES 8 NO		

00012

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

CAS/Rochester
1 Mustard St., suite 250
Rochester, NY 14609
ph: 585-288-5380
fax: 585-288-8475
e-mail: mperry@rochester.caslab.com

Serial or COC #:300709-02
Possible Hazards: Unknown
Sample Disposal: Lab Disposal

PROJECT & CLIENT INFORMATION		Project State
PROJECT REFERENCE/NAME: SEAD-12 RA	PROJECT NO.: 746762-02000	NY
LAB PROJECT MANAGER: Mike Perry	P.O. NUMBER: 746762-02000-00	CONTRACT/Quote NO.: 746762-02000-00
CLIENT (SITE) PM: Jeff Adams/Brendan Baranek-Olmstead	CLIENT PHONE: 617-285-6821(BBO)	CLIENT FAX: 617-946-9777
CLIENT NAME: Parsons	CLIENT EMAIL: Brendan.Baranek-Olmstead@parsons.com	
CLIENT ADDRESS: 100 High Street, Boston, MA 02110		
Samplers Signature & Initials:		

SAMPLED ON DATE	SAMPLED ON TIME	SAMPLE IDENTIFICATION	LABORATORY SAMPLE ID	SAMPLE TYPE	FIELD FILTERED	MATRIX	TCL VOCs - Method 8260B	TCL SVOCs - Method 8270C	Pesticide - Method 8081A PCBs - Method 8082	TAL Metals - Method 6010B/7471A Cyanide - Method 9012						
							8	8	8	8						
							NUMBER OF CONTAINERS SUBMITTED									
073009	1530	S12EXPR-O-8-03		G		S	1	1	1	1						
073009	1540	S12EXPR-O-8-04		G		S	1	1	1	1						
073009	1530	S12EXPR-O-8-03MS		G		S	1	1	1	1						
073009	1530	S12EXPR-O-8-03MSD		G		S	1	1	1	1						
073009	1430	S12EXPR-O-9-01		G		S	1	1	1	1						
073009	1115	S12-STOCK-C1-01		G		S	1	1	1	1						

REQUIRED ANALYSES

PAGE 2 OF 2

Final Report Type (Circle at least one): ASP2000
Category B
EDD 5 calendar days
TAT/ DATE DUE 15 ____Per QAP/Quote
EXPEDITED REPORT (circle one)
FAX EMAIL POST Other
TAT/ DATE DUE

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

REMARKS

1. Please run a straight sample analysis (without dilution) for every sample.
2. Please select one project sample for QA/QC analysis.

Preservative

8 Ice

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
Ben McAllister	7/30	1900						
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
Amy Hewitt	7/31/09	950						

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT YES / NO	CUSTODY SEAL NO.	LABORATORY REMARKS:

6942

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

CAS/Rochester
1 Mustard St., suite 250
Rochester, NY 14609
ph.:585-288-5380
fax: 585-288-8475
e-mail: mperry@rochester.caslab.com

Serial or COC #:300709-01
Possible Hazards: Unknown
Sample Disposal: Lab Disposal

PROJECT & CLIENT INFORMATION		Project State
PROJECT REFERENCE/NAME: SEAD-12 RA	PROJECT NO.: 746762-02000	NY
LAB PROJECT MANAGER: Mike Perry	P.O. NUMBER: 746762-02000-00	CONTRACT/Quote NO.: 746762-02000-00
CLIENT (SITE) PM: Jeff Adams/Brendan Baranek-Olmstead	CLIENT PHONE: 617-285-6821(BBO)	CLIENT FAX: 617-946-9777
CLIENT NAME: Parsons	CLIENT EMAIL: Brendan.Baranek-Olmstead@parsons.com	
CLIENT ADDRESS: 100 High Street, Boston, MA 02110		
Samplers Signature & Initials:		

PAGE 1 OF 1

Final Report Type (Circle at least one): ASP2000
Category B
EDD 5 calendar days
TAT/ DATE DUE 15 ____Per
QAP/Quote
EXPEDITED REPORT (circle one)
FAX EMAIL POST Other
TAT/ DATE DUE

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

SAMPLED ON DATE	SAMPLED ON TIME	SAMPLE IDENTIFICATION	LABORATORY SAMPLE ID	SAMPLE TYPE	FIELD FILTERED	MATRIX	TCL VOCs - Method 8260B	TCL SVOCs - Method 8270C	Pesticide - Method 8081A	PCBs - Method 8082	TAL Metals - Method 6010B/7471A	Cyanide - Method 9012	TCLP VOC - Method 8260B	TCLP SVOC - Method 8270C	Pesticide - Method 8081A	PCBs - Method 8082	TCLP Metals - Method 6010B/7471A	Paint Filter - EPA 9095	pH - EPA 9045	Percent Solids - EPA 160.3	Reactivity - SW846/ Sec 7.3.3 and 7.3.4	Flashpoint - EPA 1010			REMARKS
							8	8	8	8	8														
							NUMBER OF CONTAINERS SUBMITTED																		
7/30/2009	1230	S12DS04		G		S					1														1. Please run a straight sample analysis (without dilution) for every sample.
7/30/2009	1245	S12DS05		G		S					1														
7/30/2009	1700	TB073009-1		G		W	1																		2. Please select one project sample for QA/QC analysis.

Preservative

8 Ice

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME		DATE	TIME
Brey McMahon	7/30	1900						
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME		DATE	TIME
Amy Hewston	7/31/09	950						

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT YES / NO	CUSTODY SEAL NO.	LABORATORY REMARKS:
			NO		

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

CAS/Rochester
1 Mustard St., suite 250
Rochester, NY 14609
ph.:585-288-5380
fax: 585-288-8475
e-mail: mperry@rochester.caslab.com

Serial or COC #:300709-01
Possible Hazards: Unknown
Sample Disposal: Lab Disposal

PAGE 1 OF 1

PROJECT & CLIENT INFORMATION

PROJECT REFERENCE/NAME: SEAD-12 RA	PROJECT NO.: 746762-02000	Project State: NY
LAB PROJECT MANAGER: Mike Perry	P.O. NUMBER: 746762-02000-00	CONTRACT/Quote NO.: 746762-02000-00
CLIENT (SITE) PM: Jeff Adams/Brendan Baranek-Olmstead	CLIENT PHONE: 617-285-6821(BBO)	CLIENT FAX: 617-946-9777
CLIENT NAME: Parsons	CLIENT EMAIL: Brendan.Baranek-Olmstead@parsons.com	
CLIENT ADDRESS: 100 High Street, Boston, MA 02110		
Samplers Signature & Initials:		

Final Report Type (Circle at least one): ASP2000 Category B
EDD 5 calendar days
TAT/ DATE DUE 15 ____Per QAP/Quote
EXPEDITED REPORT (circle one) FAX EMAIL POST Other
TAT/ DATE DUE
NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

REQUIRED ANALYSES

SAMPLED ON DATE	SAMPLED ON TIME	SAMPLE IDENTIFICATION	LABORATORY SAMPLE ID	SAMPLE TYPE	FIELD FILTERED	MATRIX	TCL VOCs - Method 8260B	TCL SVOCs - Method 8270C	Pesticide - Method 8081A PCBs - Method 8082	TAL Metals - Method 6010B/7471A Cyanide - Method 9012	TCLP VOC - Method 8260B TCLP SVOC - Method 8270C Pesticide - Method 8081A PCBs - Method 8082 TCLP Metals - Method 6010B/7471A Paint Filter - EPA 9095 pH - EPA 9045 Percent Solids - EPA 160.3 Reactivity - SW846/ Sec 7.3.3 and 7.3.4 Flashpoint - EPA 1010		
							8	8	8	8	8		
7/30/2009	1230	S12DS04		G		S					1		
7/30/2009	1245	S12DS05		G		S					1		
7/30/2009	1700	TB073009-1		G		W	1						

NUMBER OF CONTAINERS SUBMITTED

REMARKS

1. Please run a straight sample analysis (without dilution) for every sample.
2. Please select one project sample for QA/QC analysis.

Preservative

8 Ice

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME		DATE	TIME
Ben McAllen	7/30	1900						
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME		DATE	TIME
Amy Hentz	7/31/09	950						

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	LABORATORY REMARKS:
			YES NO		

00015

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

CAS/Rochester
1 Mustard St., suite 250
Rochester, NY 14609
ph.:585-288-5380
fax: 585-288-8475
e-mail: mperry@rochester.caslab.com

Serial or COC #:050809-01
Possible Hazards: Unknown
Sample Disposal: Lab Disposal

PAGE 1 OF 2

PROJECT & CLIENT INFORMATION

PROJECT REFERENCE/NAME: SEAD-12 RA	PROJECT NO.: 746762-02000	Project State: NY
LAB PROJECT MANAGER: Mike Perry	P.O. NUMBER: 746762-02000-00	CONTRACT/Quote NO.: 746762-02000-00
CLIENT (SITE) PM: Jeff Adams/Brendan Baranek-Olmstead	CLIENT PHONE: 617-285-6821(BBO)	CLIENT FAX: 617-946-9777
CLIENT NAME: Parsons	CLIENT EMAIL: Brendan.Baranek-Olmstead@parsons.com	
CLIENT ADDRESS: 100 High Street, Boston, MA 02110		
Samplers Signature & Initials:		

Final Report Type (Circle at least one): ASP2000
Category B
EDD 5 calendar days
TAT/ DATE DUE 15 calendar days Per QAP/Quote
EXPEDITED REPORT (circle one)
FAX EMAIL POST Other
TAT/ DATE DUE

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

SAMPLED ON DATE	SAMPLED ON TIME	SAMPLE IDENTIFICATION	LABORATORY SAMPLE ID	SAMPLE TYPE	FIELD FILTERED	MATRIX	TCL VOCs - Method 8260B	TCL SVOCs - Method 8270C	Pesticide - Method 8081A PCBs - Method 8082	TAL Metals - Method 6010B/7471A Cyanide - Method 9012								
							REQUIRED ANALYSES											
							8	8	8	8								
							NUMBER OF CONTAINERS SUBMITTED											
8/5/2009	1300	S12EXSW-A-2-01		G		S	1	1	1	1								
8/5/2009	1310	S12EXSW-B-1-01		G		S	1	1	1	1								
8/5/2009	1245	S12EXSW-B-2-01		G		S	1	1	1	1								
8/5/2009	1200	S12EXSW-C-1-01		G		S	1	1	1	1								
8/5/2009	1145	S12EXSW-C-2-01		G		S	1	1	1	1								
8/5/2009	820	S12EXSW-D-1-01		G		S	1	1	1	1								
8/5/2009	830	S12EXSW-D-2-01		G		S	1	1	1	1								
8/5/2009	800	S12EXSW-E-1-01		G		S	1	1	1	1								
8/5/2009	700	S12EXSW-I-2-01		G		S	1	1	1	1								
8/5/2009	745	S12EXSW-I-3-01		G		S	1	1	1	1								
8/4/2009	1800	S12EXSW-J-2-01		G		S	1	1	1	1								

REMARKS

1. Please run a straight sample analysis (without dilution) for every sample.
2. Please select one project sample for QA/QC analysis.

Preservative

8 Ice

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
Ben McAllister	8/5	1700						
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	LABORATORY REMARKS:
Amy Hendra	8/5/09	1707	YES NO		

R0904367
Parsons Engineering Science
SEAD-12

12009

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

CAS/Rochester
1 Mustard St., suite 250
Rochester, NY 14609
ph.:585-288-5380
fax: 585-288-8475
e-mail: mperry@rochester.caslab.com

Serial or COC #:050809-01
Possible Hazards: Unknown
Sample Disposal: Lab Disposal

PAGE 2 OF 2

Final Report Type (Circle at least one): ASP2000 Category B
EDD 5 calendar days
TAT/ DATE DUE 15 calendar days Per QAP/Quote
EXPEDITED REPORT (circle one) FAX EMAIL POST Other
TAT/ DATE DUE

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

PROJECT & CLIENT INFORMATION

PROJECT REFERENCE/NAME: SEAD-12 RA	PROJECT NO.: 746762-02000	Project State: NY
LAB PROJECT MANAGER: Mike Perry	P.O. NUMBER: 746762-02000-00	CONTRACT/Quote NO: 746762-02000-00
CLIENT (SITE) PM: Jeff Adams/Brendan Baranek-Olmstead	CLIENT PHONE: 617-265-6821(BBO)	CLIENT FAX: 617-946-9777
CLIENT NAME: Parsons	CLIENT EMAIL: Brendan.Baranek-Olmstead@parsons.com	
CLIENT ADDRESS: 100 High Street, Boston, MA 02110		
Samplers Signature & Initials:		

Sample Information

REQUIRED ANALYSES

SAMPLED ON DATE	SAMPLED ON TIME	SAMPLE IDENTIFICATION	LABORATORY SAMPLE ID	SAMPLE TYPE	FIELD FILTERED	MATRIX	TCL VOCs - Method 8260B	TCL SVOCs - Method 8270C	Pesticide - Method 8081A PCBs - Method 8082	TAL Metals - Method 6010B/7471A Cyanide - Method 9012			
							8	8	8	8			
8/4/2009	1740	S12EXSW-J-3-01		G		S	1	1	1	1			
8/4/2009	1340	S12EXSW-J-3-02		G		S	1	1	1	1			
8/4/2009	1720	S12EXSW-J-4-01		G		S	1	1	1	1			
8/4/2009	1710	S12EXSW-J-4-02		G		S	1	1	1	1			
8/4/2009	1630	S12EXSW-J-4-03		G		S	1	1	1	1			
8/4/2009	1645	S12EXSW-J-5-01		G		S	1	1	1	1			
8/4/2009	1750	S12EXSW-K-3-01		G		S	1	1	1	1			
8/4/2009	1730	S12EXSW-K-4-01		G		S	1	1	1	1			
8/5/2009	840	S12EXSW-D-2-02		G		S	1	1	1	1			
8/5/2009	830	S12EXSW-D-2-01XMS		G		S	1	1	1	1			
8/5/2009	830	S12EXSW-D-2-01MSD		G		S	1	1	1	1			
8/5/2009	1500	TB080509-1		G		W	1						

NUMBER OF CONTAINERS SUBMITTED

REMARKS

1. Please run a straight sample analysis (without dilution) for every sample.
2. Please select one project sample for QA/QC analysis.

Preservative

8 Ice

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
Ben McMurdish	8/5	1700						
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	LABORATORY REMARKS:
Amy Hewitt	8/5/09	1707	YES NO 8		

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

CAS/Rochester
1 Mustard St., suite 250
Rochester, NY 14609
ph.:585-288-5380
fax: 585-288-8475
e-mail: mperry@rochester.caslab.com

Serial or COC #:050809-02
Possible Hazards: Unknown
Sample Disposal: Lab Disposal

PAGE 1 OF 2

PROJECT & CLIENT INFORMATION

PROJECT REFERENCE/NAME: SEAD-12 RA	PROJECT NO.: 746762-02000	Project State: NY
LAB PROJECT MANAGER: Mike Perry	P.O. NUMBER: 746762-02000-00	CONTRACT/Quote NO.: 746762-02000-00
CLIENT (SITE) PM: Jeff Adams/Brendan Baranek-Olmstead	CLIENT PHONE: 617-285-6821(BBO)	CLIENT FAX: 617-946-9777
CLIENT NAME: Parsons	CLIENT EMAIL: Brendan.Baranek-Olmstead@parsons.com	
CLIENT ADDRESS: 100 High Street, Boston, MA 02110		
Samplers Signature & Initials:		

Final Report Type (Circle at least one): ASP2000
Category B
EDD 5 calendar days
TAT/ DATE DUE 15 calendar days Per QAP/Quote
EXPEDITED REPORT (circle one)
FAX EMAIL POST Other
TAT/ DATE DUE

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

Sample Information / REQUIRED ANALYSES

SAMPLED ON DATE	SAMPLED ON TIME	SAMPLE IDENTIFICATION	LABORATORY SAMPLE ID	SAMPLE TYPE	FIELD FILTERED	MATRIX	TCL VOCs - Method 8260B	TCL SVOCs - Method 8270C	Pesticide - Method 8081A PCBs - Method 8082	TAL Metals - Method 6010B/7471A Cyanide - Method 9012						REMARKS
							8	8	8	8						
							NUMBER OF CONTAINERS SUBMITTED									
8/5/2009	1455	S12EXSW-N-10-01		G		S	1	1	1	1						1. Please run a straight sample analysis (without dilution) for every sample.
8/5/2009	1445	S12EXSW-N-10-02		G		S	1	1	1	1						2. Please select one project sample for QA/QC analysis.
8/5/2009	1500	S12EXSW-N-9-01		G		S	1	1	1	1						
8/5/2009	1520	S12EXSW-O-10-01		G		S	1	1	1	1						
8/5/2009	1600	S12EXSW-O-7-01		G		S	1	1	1	1						
8/5/2009	1605	S12EXSW-O-8-01		G		S	1	1	1	1						
8/5/2009	1540	S12EXSW-O-8-02		G		S	1	1	1	1						Preservative
8/5/2009	1550	S12EXSW-O-8-03		G		S	1	1	1	1						
8/5/2009	1510	S12EXSW-O-9-01		G		S	1	1	1	1						
8/5/2009	1330	S12EXPR-J-3-02		G		S	1	1	1	1						8 Ice

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
Ben McAlister	8/5	1700						
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT YES NO	CUSTODY SEAL NO.	LABORATORY REMARKS:
Amy Hunter	8/5/09	1707	8		

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

CAS/Rochester
1 Mustard St., suite 250
Rochester, NY 14609
ph.:585-288-5380
fax: 585-288-8475
e-mail: mperry@rochester.caslab.com

Serial or COC #:080609-1
Possible Hazards: Unknown
Sample Disposal: Lab Disposal

PAGE 1 OF 1

PROJECT & CLIENT INFORMATION

PROJECT REFERENCE/NAME: SEAD-12 RA	PROJECT NO.: 746762-02000	Project State: NY
LAB PROJECT MANAGER: Mike Perry	P.O. NUMBER: 746762-02000-00	CONTRACT/Quote NO.: 746762-02000-00
CLIENT (SITE) PM: Jeff Adams/Brendan Baranek-Olmstead	CLIENT PHONE: 617-285-6821(BBO)	CLIENT FAX: 617-946-9777
CLIENT NAME: Parsons	CLIENT EMAIL: Brendan.Baranek-Olmstead@parsons.com	
CLIENT ADDRESS: 100 High Street, Boston, MA 02110		
Samplers Signature & Initials:		

Final Report Type (Circle at least one): ASP2000 Category B
EDD 5 calendar days
TAT/ DATE DUE 15 calendar days Per QAP/Quote
EXPEDITED REPORT (circle one) FAX EMAIL POST Other
TAT/ DATE DUE
NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

REQUIRED ANALYSES

SAMPLED ON DATE	TIME	SAMPLE IDENTIFICATION	LABORATORY SAMPLE ID	SAMPLE TYPE	FIELD FILTERED	MATRIX	TCL VOCs - Method 8260B	TCL SVOCs - Method 8270C	Pesticide - Method 8081A PCBs - Method 8082	TAL Metals - Method 6010B/7471A Cyanide - Method 9012	TCLP VOC - Method 8260B TCLP SVOC - Method 8270C Pesticide - Method 8081A PCBs - Method 8082 TCLP Metals - Method 6010B/7471A Paint Filter - EPA 9095 pH - EPA 9045 Percent Soilds - EPA 160.3 Reactivity - SW846/ Sec 7.3.3 and 7.3.4 Flashpoint - EPA 1010								REMARKS
							8	8	8	8	8									
8/6/2009	730	S12STOCK-C1-02		G		S	1	1	1	1										1. Please run a straight sample analysis (without dilution) for every sample. 2. Please select one project sample for QA/QC analysis.
8/6/2009	740	S12STOCK-C1-03		G		S	1	1	1	1										
8/6/2009	750	S12STOCK-C1-04		G		S	1	1	1	1										
8/6/2009	800	S12STOCK-C1-05		G		S	1	1	1	1										
8/6/2009	810	S12STOCK-C1-06		G		S	1	1	1	1										
8/6/2009	820	S12STOCK-C1-07		G		S	1	1	1	1										
8/6/2009	840	S12STOCK-C1-08		G		S	1	1	1	1										Preservative
8/6/2009	850	S12STOCK-C1-09		G		S	1	1	1	1										
8/6/2009	900	S12STOCK-C1-10		G		S	1	1	1	1										
8/6/2009	930	S12STOCK-C1-11		G		S	1	1	1	1										8 Ice
8/6/2009	940	S12STOCK-C1-12		G		S	1	1	1	1										

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	DATE	TIME
Ben McAlister	8/6	1700					
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	DATE	TIME

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	LABORATORY REMARKS:
Amy Henetto	8/7/09	1045	YES ☒ NO		

R0904422
Parsons Engineering Science
SEAD-12 RA

60000

FCUO[illegible]12.2[illegible] 30:2

Original - Return to Laboratory with Samples)

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

CAS/Rochester
1 Mustard St., suite 250
Rochester, NY 14609
ph.:585-288-5380
fax: 585-288-8475
e-mail: mperry@rochester.caslab.com

Serial or COC #:080609-1
Possible Hazards: Unknown
Sample Disposal: Lab Disposal

PAGE 1 OF 1

PROJECT & CLIENT INFORMATION		Project State
PROJECT REFERENCE/NAME: SEAD-12 RA	PROJECT NO.: 746762-02000	NY
LAB PROJECT MANAGER: Mike Perry	P.O. NUMBER: 746762-02000-00	CONTRACT/Quote NO.: 746762-02000-00
CLIENT (SITE) PM: Jeff Adams/Brendan Baranek-Olmstead	CLIENT PHONE: 617-285-6821(BBO)	CLIENT FAX: 617-946-9777
CLIENT NAME: Parsons	CLIENT EMAIL: Brendan.Baranek-Olmstead@parsons.com	
CLIENT ADDRESS: 100 High Street, Boston, MA 02110		
Samplers Signature & Initials:		

Final Report Type (Circle at least one): ASP2000
Category B
EDD 5 calendar days
TAT/ DATE DUE 15 calendar days Per QAP/Quote
EXPEDITED REPORT (circle one)
FAX EMAIL POST Other
TAT/ DATE DUE

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

SAMPLED ON DATE	SAMPLED ON TIME	SAMPLE IDENTIFICATION	LABORATORY SAMPLE ID	SAMPLE TYPE	FIELD FILTERED	MATRIX	TCL VOCs - Method 8260B	TCL SVOCs - Method 8270C	Pesticide - Method 8081A PCBs - Method 8082	TAL Metals - Method 6010B/7471A Cyanide - Method 9012	TCLP VOC - Method 8260B TCLP SVOC - Method 8270C Pesticide - Method 8081A PCBs - Method 8082 TCLP Metals - Method 6010B/7471A	Paint Filter - EPA 9095 pH - EPA 9045 Percent Solids - EPA 160.3 Reactivity - SW846/ Sec 7.3.3 and 7.3.4 Flashpoint - EPA 1010			REMARKS
				Sample Information			REQUIRED ANALYSES								
							8	8	8	8	8				NUMBER OF CONTAINERS SUBMITTED
8/6/2009	930	S12STOCK-C1-11MS		G		S	1	1	1	1					
8/6/2009	930	S12STOCK-C1-11MSD		G		S	1	1	1	1					
8/6/2009	1200	S12DS17		G		S					2				
8/6/2009	1215	S12DS08		G		S					2				
8/6/2009	1230	S12DS11		G		S					2				
8/6/2009	1245	S12DS14		G		S					2				Preservative
8/6/2009	1500	TB080609-1		G		W	3								
															8 Ice

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	DATE	TIME
Ben Mattison	8/6	1700					
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	DATE	TIME

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT YES NO	CUSTODY SEAL NO.	LABORATORY REMARKS:
	8/7/09	1045	YES		

FCU036:12.20.00:2

Original - Return to Laboratory with Sample(s)

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

CAS/Rochester
1 Mustard St., suite 250
Rochester, NY 14609
ph.:585-288-5380
fax: 585-288-8475
e-mail: mperry@rochester.caslab.com

Serial or COC #:080609-1
Possible Hazards: Unknown
Sample Disposal: Lab Disposal

PAGE 1 OF 1

PROJECT & CLIENT INFORMATION

PROJECT REFERENCE/NAME: SEAD-12 RA	PROJECT NO.: 746762-02000	Project State: NY
LAB PROJECT MANAGER: Mike Perry	P.O. NUMBER: 746762-02000-00	CONTRACT/Quote NO.: 746762-02000-00
CLIENT (SITE) PM: Jeff Adams/Brendan Baranek-Olmstead	CLIENT PHONE: 617-285-6821(BBO)	CLIENT FAX: 617-946-9777
CLIENT NAME: Parsons	CLIENT EMAIL: Brendan.Baranek-Olmstead@parsons.com	
CLIENT ADDRESS: 100 High Street, Boston, MA 02110		
Samplers Signature & Initials:		

Final Report Type (Circle at least one): ASP2000
Category B
EDD 5 calendar days
TAT/ DATE DUE 15 calendar days Per QAP/Quote
EXPEDITED REPORT (circle one) FAX EMAIL POST Other
TAT/ DATE DUE
NUMBER OF COOLERS SUBMITTED PER SHIPMENT

REQUIRED ANALYSES

SAMPLED ON DATE	SAMPLED ON TIME	SAMPLE IDENTIFICATION	LABORATORY SAMPLE ID	SAMPLE TYPE	FIELD FILTERED	MATRIX	TCL VOCs - Method 8260B	TCL SVOCs - Method 8270C	Pesticide - Method 8081A PCBs - Method 8082	TAL Metals - Method 6010B/7471A Cyanide - Method 9012	TCLP VOC - Method 8260B TCLP SVOC - Method 8270C Pesticide - Method 8081A PCBs - Method 8082 TCLP Metals - Method 6010B/7471A Paint Filter - EPA 9095 pH - EPA 9045 Percent Soilds - EPA 160.3 Reactivity - SW846/ Sec 7.3.3 and 7.3.4 Flashpoint - EPA 1010			REMARKS
							8	8	8	8	8			
							NUMBER OF CONTAINERS SUBMITTED							
8/6/2009	930	S12STOCK-C1-11MS		G		S	1	1	1	1				
8/6/2009	930	S12STOCK-C1-11MSD		G		S	1	1	1	1				
8/6/2009	1200	S12DS17		G		S					2			
8/6/2009	1215	S12DS08		G		S					2			
8/6/2009	1230	S12DS11		G		S					2			
8/6/2009	1245	S12DS14		G		S					2			Preservative
8/6/2009	1500	TB080609-1		G		W	3							
														8 Ice

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME		DATE	TIME
Ben McAllister	8/6	1700						
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME		DATE	TIME

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	LABORATORY REMARKS:
Amy Henrietta	8/7/09	1045	YES NO 8		

R0904425
Parsons Engineering Science
SEAD-12 RA

00009

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

CAS/Rochester
1 Mustard St., suite 250
Rochester, NY 14609
ph.:585-288-5380
fax: 585-288-8475
e-mail: mperry@rochester.caslab.com

Serial or COC #:130809-1
Possible Hazards: Unknown
Sample Disposal: Lab Disposal

PAGE 1 OF 1

PROJECT & CLIENT INFORMATION

PROJECT REFERENCE/NAME: SEAD-12 RA	PROJECT NO.: 746762-02000	Project State: NY
LAB PROJECT MANAGER: Mike Perry	P.O. NUMBER: 746762-02000-00	CONTRACT/Quote NO.: 746762-02000-00
CLIENT (SITE) PM: Jeff Adams/Brendan Baranek-Olmstead	CLIENT PHONE: 617-285-6821(BBO)	CLIENT FAX: 617-946-9777
CLIENT NAME: Parsons	CLIENT EMAIL: Brendan.Baranek-Olmstead@parsons.com	
CLIENT ADDRESS: 100 High Street, Boston, MA 02110		
Samplers Signature & Initials:		

Final Report Type (Circle at least one): ASP2000
Category B
EDD 5 calendar days
TAT/ DATE DUE 15 calendar days Per QAP/Quote
EXPEDITED REPORT (circle one)
FAX EMAIL POST Other
TAT/ DATE DUE

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

SAMPLED ON DATE	SAMPLED ON TIME	SAMPLE IDENTIFICATION	LABORATORY SAMPLE ID	SAMPLE TYPE	FIELD FILTERED	MATRIX	TCL VOCs - Method 8260B	TCL SVOCs - Method 8270C	Pesticide - Method 8081A PCBs - Method 8082	TAL Metals - Method 6010B/7471A Cyanide - Method 9012	TCLP Metals - Method 6010B/7471A			REMARKS
							8	8	8	8	8			
							NUMBER OF CONTAINERS SUBMITTED							
8/13/2009	1230	S12DB01		G		S					1			1. Please run a straight sample analysis (without dilution) for every sample. 2. Please select one project sample for QA/QC analysis.
8/13/2009	1245	S12DB02		G		S					1			
8/13/2009	1300	S12EXFL-O-8-01		G		S	1	1	1	1				
8/13/2009	1500	TB081309-1		G			1							

Preservative
8 Ice

RELINQUISHED BY: (SIGNATURE) Ben McNichols	DATE 8/13	TIME 1800	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	DATE / TIME
RECEIVED BY: (SIGNATURE) Amy Hewitt	DATE 8/14/09	TIME 940	RECEIVED BY: (SIGNATURE)	DATE	TIME	DATE / TIME

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT YES / NO	CUSTODY SEAL NO.	LABORATORY REMARKS:

5656

R0904596
Parsons Engineering Science
SEAD-12

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

CAS/Rochester
1 Mustard St., suite 250
Rochester, NY 14609
ph.:585-288-5380
fax: 585-288-8475
e-mail: mperry@rochester.caslab.com

Serial or COC #:093009-1
Possible Hazards: Unknown
Sample Disposal: Lab Disposal

PROJECT & CLIENT INFORMATION | Project State: NY

PROJECT REFERENCE/NAME: SEAD-12 RA	PROJECT NO.: 746762-02000	
LAB PROJECT MANAGER: Mike Perry	P.O. NUMBER: 746762-02000-00	CONTRACT/Quote NO.: 746762-02000-00
CLIENT (SITE) PM: Jeff Adams/Brendan Baranek-Olmstead	CLIENT PHONE: 617-285-6821(BBO)	CLIENT FAX: 617-946-9777
CLIENT NAME: Parsons	CLIENT EMAIL: Brendan.Baranek-Olmstead@parsons.com	
CLIENT ADDRESS: 100 High Street, Boston, MA 02110		
Samplers Signature & Initials:		

PAGE 1 OF 1

Final Report Type (Circle at least one): ASP2000
Category B
EDD 5 calendar days
TAT/ DATE DUE 15 calendar days Per QAP/Quote
EXPEDITED REPORT (circle one)
FAX EMAIL POST Other
TAT/ DATE DUE 72 Hours
NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

SAMPLED ON DATE	SAMPLED ON TIME	SAMPLE IDENTIFICATION	LABORATORY SAMPLE ID	SAMPLE TYPE	FIELD FILTERED	MATRIX	PCBs - Method 8082				72 Hour Turnaround Time			REMARKS
							8	8	8	8	8			NUMBER OF CONTAINERS SUBMITTED
9/30/2009	1612	S12EXSW-O-8-04		G		S	1							1. Please run a straight sample analysis (without dilution) for every sample. 2. Please select one project sample for QA/QC analysis.
9/30/2009	1618	S12EXPR-O-8-04		G		S	1							
														Preservative
														8 Ice

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME		DATE	TIME
Ben MacMahon	9/30	1830						
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME		DATE	TIME
Matt Cass	10/1/09	1020						

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT YES / NO	CUSTODY SEAL NO.	LABORATORY REMARKS:
			YES NO		

R0905568
Parsons Engineering Science
SEAD-12

R0905568

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

CAS/Rochester
1 Mustard St., suite 250
Rochester, NY 14609
ph.:585-288-5380
fax: 585-288-8475
e-mail: mperry@rochester.caslab.com

Serial or COC #:100509-1
Possible Hazards: Unknown
Sample Disposal: Lab Disposal

PAGE 1 OF 1

PROJECT & CLIENT INFORMATION

PROJECT REFERENCE/NAME: SEAD-12 RA	PROJECT NO.: 746762-02000	Project State: NY
LAB PROJECT MANAGER: Mike Perry	P.O. NUMBER: 746762-02000-00	CONTRACT/Quote NO.: 746762-02000-00
CLIENT (SITE) PM: Jeff Adams/Brendan Baranek-Olmstead	CLIENT PHONE: 617-285-6821(BBO)	CLIENT FAX: 617-946-9777
CLIENT NAME: Parsons	CLIENT EMAIL: Brendan.Baranek-Olmstead@parsons.com	
CLIENT ADDRESS: 100 High Street, Boston, MA 02110		
Samplers Signature & Initials:		

Sample Information

REQUIRED ANALYSES

SAMPLED ON DATE	SAMPLED ON TIME	SAMPLE IDENTIFICATION	LABORATORY SAMPLE ID	SAMPLE TYPE	FIELD FILTERED	MATRIX	TCL VOCs - Method 8260B	TCL SVOCs - Method 8270C	Pesticide - Method 8081A PCBs - Method 8082	TAL Metals - Method 6010B/7471A Cyanide - Method 9012	TCLP VOC - Method 8260B	TCLP SVOC - Method 8270C	Pesticide - Method 8081A PCBs - Method 8082	TCLP Metals - Method 6010B/7471A	Paint Filter - EPA 9095	pH - EPA 9045	Percent Solids - EPA 160.3	Reactivity - SW846/ Sec 7.3.3 and 7.3.4	Flashpoint - EPA 1010		
							8	8	8	8	8										
							NUMBER OF CONTAINERS SUBMITTED														
10/5/2009	1630	S12EXFL-I-3-01		G		S	1	1	1	1											
10/5/2009	1615	S12EXSW-I-3-01		G		S	1	1	1	1											
10/5/2009	1620	S12EXSW-I-3-02		G		S	1	1	1	1											
10/5/2009	1620	S12EXSW-I-3-03		G		S	1	1	1	1											
10/5/2009	1630	S12EXSW-I-3-02MS		G		S	1	1	1	1											
10/5/2009	1635	S12EXSW-I-3-02MSD		G		S	1	1	1	1											

Final Report Type (Circle at least one): ASP2000 Category B
EDD 5 calendar days
TAT/ DATE DUE 15 calendar days Per QAP/Quote
EXPEDITED REPORT (circle one)
FAX EMAIL POST Other
TAT/ DATE DUE

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

REMARKS

1. Please run a straight sample analysis (without dilution) for every sample.
2. Please select one project sample for QA/QC analysis.

Preservative

8 Ice

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME		DATE	TIME
				10/6/09	1350			
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME		DATE	TIME
	10/6/09	1030	Mark C. Peter	10/6/09	1350			

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT YES NO	CUSTODY SEAL NO.	LABORATORY REMARKS:
			NO		

R0905678
Parsons Engineering Science
SEAD-12

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

CAS/Rochester
1 Mustard St., suite 250
Rochester, NY 14609
ph.:585-288-5380
fax: 585-288-8475
e-mail: mperry@rochester.caslab.com

Serial or COC #:100509-1
Possible Hazards: Unknown
Sample Disposal: Lab Disposal

PROJECT & CLIENT INFORMATION

PROJECT REFERENCE/NAME: SEAD-12 RA	PROJECT NO.: 746762-02000	Project State: NY
LAB PROJECT MANAGER: Mike Perry	P.O. NUMBER: 746762-02000-00	CONTRACT/Quote NO.: 746762-02000-00
CLIENT (SITE) PM: Jeff Adams/Brendan Baranek-Olmstead	CLIENT PHONE: 617-285-6821(BBO)	CLIENT FAX: 617-946-9777
CLIENT NAME: Parsons	CLIENT EMAIL: Brendan.Baranek-Olmstead@parsons.com	
CLIENT ADDRESS: 100 High Street, Boston, MA 02110		
Samplers Signature & Initials:		

PAGE 1 OF 1

Final Report Type (Circle at least one): ASP2000
Category B
EDD 5 calendar days
TAT/ DATE DUE 15 calendar days ____ Per QAP/Quote
EXPEDITED REPORT (circle one)
FAX EMAIL POST Other
TAT/ DATE DUE

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

SAMPLED ON DATE	SAMPLED ON TIME	SAMPLE IDENTIFICATION	LABORATORY SAMPLE ID	SAMPLE TYPE	FIELD FILTERED	MATRIX	TCL VOCs - Method 8260B	TCL SVOCs - Method 8270C	Pesticide - Method 8081A PCBs - Method 8082	TAL Metals - Method 6010B/7471A Cyanide - Method 9012	pH - EPA 9045			REMARKS
			Sample Information				REQUIRED ANALYSES							
							8	8	8	8	8			
							NUMBER OF CONTAINERS SUBMITTED							
10/6/2009	900	WW1006-01		G		W	9	9	9	9	9			1. Please run a straight sample analysis (without dilution) for every sample. 2. Please select one project sample for QA/QC analysis.

Preservative: 8 Ice

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME		DATE	TIME
				10/6/09	1350			
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME		DATE	TIME
	10/6/09	1030		10/6/09	1350			

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT YES / NO	CUSTODY SEAL NO.	LABORATORY REMARKS:

100509

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

CAS/Rochester
1 Mustard St., suite 250
Rochester, NY 14609
ph.:585-288-5380
fax: 585-288-8475
e-mail: mperry@rochester.caslab.com

Serial or COC #:100709-1
Possible Hazards: Unknown
Sample Disposal: Lab Disposal

PAGE 1 OF 1

PROJECT & CLIENT INFORMATION

Project State: NY

PROJECT REFERENCE/NAME: SEAD-12 RA	PROJECT NO.: 746762-02000	
LAB PROJECT MANAGER: Mike Perry	P.O. NUMBER: 746762-02000-00	CONTRACT/Quote NO.: 746762-02000-00
CLIENT (SITE) PM: Jeff Adams/Brendan Baranek-Olmstead	CLIENT PHONE: 617-285-6821(BBO)	CLIENT FAX: 617-946-9777
CLIENT NAME: Parsons	CLIENT EMAIL: Brendan.Baranek-Olmstead@parsons.com	
CLIENT ADDRESS: 100 High Street, Boston, MA 02110		
Samplers Signature & Initials:		

SAMPLED ON DATE	SAMPLED ON TIME	SAMPLE IDENTIFICATION	LABORATORY SAMPLE ID	SAMPLE TYPE	FIELD FILTERED	MATRIX
10/7/2009	930	S12EXFL-J-2-02		G		S
10/7/2009	935	S12EXSW-J-2-02		G		S
10/7/2009	940	S12EXSW-I-2-03		G		S
10/7/2009	945	S12EXSW-I-2-02		G		S
10/7/2009	950	S12EXPR-I-2-02		G		S

Sample Information

REQUIRED ANALYSES

TCL VOCs - Method 8260B	TCL SVOCs - Method 8270C	Pesticide - Method 8081A PCBs - Method 8082	TAL Metals - Method 6010B/7471A Cyanide - Method 9012	TCLP VOC - Method 8260B TCLP SVOC - Method 8270C Pesticide - Method 8081A PCBs - Method 8082 TCLP Metals - Method 6010B/7471A Paint Filter - EPA 9095 pH - EPA 9045 Percent Solids - EPA 160.3 Reactivity - SW846/ Sec 7.3.3 and 7.3.4 Flashpoint - EPA 1010	
8	8	8	8	8	NUMBER OF CONTAINERS SUBMITTED
1	1	1	1		
1	1	1	1		
1	1	1	1		
1	1	1	1		
1	1	1	1		

Final Report Type (Circle at least one): ASP2000 Category B
EDD 5 calendar days
TAT/ DATE DUE 15 calendar days Per QAP/Quote
EXPEDITED REPORT (circle one) FAX EMAIL POST Other
TAT/ DATE DUE
NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

REMARKS

1. Please run a straight sample analysis (without dilution) for every sample.
2. Please select one project sample for QA/QC analysis.

Preservative

8 Ice

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME		DATE	TIME
Ben McWhorter	10/7/09	1800						
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME		DATE	TIME
T.M. Kelley	10/8/09	845	Rachel Jones CAS	10/8/09	1000			

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT YES / NO	CUSTODY SEAL NO.	LABORATORY REMARKS:
			NO 8		

6059

FCU036:12.20.00:2

Original - Return to Laboratory with Sample(s)

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

CAS/Rochester
1 Mustard St., suite 250
Rochester, NY 14609
ph.:585-288-5380
fax: 585-288-8475
e-mail: mperry@rochester.caslab.com

Serial or COC #:100709-1
Possible Hazards: Unknown
Sample Disposal: Lab Disposal

PROJECT & CLIENT INFORMATION

PROJECT REFERENCE/NAME: SEAD-12 RA	PROJECT NO.: 746762-02000	Project State: NY
LAB PROJECT MANAGER: Mike Perry	P.O. NUMBER: 746762-02000-00	CONTRACT/Quote NO.: 746762-02000-00
CLIENT (SITE) PM: Jeff Adams/Brendan Baranek-Olmstead	CLIENT PHONE: 617-285-6821(BBO)	CLIENT FAX: 617-946-9777
CLIENT NAME: Parsons	CLIENT EMAIL: Brendan.Baranek-Olmstead@parsons.com	
CLIENT ADDRESS: 100 High Street, Boston, MA 02110		
Samplers Signature & Initials:		

PAGE 1 OF 1

Final Report Type (Circle at least one): ASP2000
Category B
EDD 5 calendar days
TAT/ DATE DUE 15 calendar days Per QAP/Quote
EXPEDITED REPORT (circle one)
FAX EMAIL POST Other
TAT/ DATE DUE

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

SAMPLED ON DATE	SAMPLED ON TIME	SAMPLE IDENTIFICATION	LABORATORY SAMPLE ID	SAMPLE TYPE	FIELD FILTERED	MATRIX	TCL VOCs - Method 8260B	TCL SVOCs - Method 8270C	Pesticide - Method 8081A PCBs - Method 8082	TAL Metals - Method 6010B/7471A Cyanide - Method 9012	TCLP VOC - Method 8260B	TCLP SVOC - Method 8270C	Pesticide - Method 8081A	PCBs - Method 8082	TCLP Metals - Method 6010B/7471A	Paint Filter - EPA 9095	pH - EPA 9045	Percent Solids - EPA 160.3	Reactivity - SW846/ Sec 7.3.3 and 7.3.4	Flashpoint - EPA 1010		
							8	8	8	8	8											
							NUMBER OF CONTAINERS SUBMITTED															
10/7/2009	930	S12EXFL-J-2-02		G		S	1	1	1	1												
10/7/2009	935	S12EXSW-J-2-02		G		S	1	1	1	1												
10/7/2009	940	S12EXSW-I-2-03		G		S	1	1	1	1												
10/7/2009	945	S12EXSW-I-2-02		G		S	1	1	1	1												
10/7/2009	950	S12EXPR-I-2-02		G		S	1	1	1	1												

REMARKS

1. Please run a straight sample analysis (without dilution) for every sample.
2. Please select one project sample for QA/QC analysis.

Preservative

Ice

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME		DATE	TIME
Ben McWhorter	10/7/09	1800	R.M. Stolley	10/8/09	1700			
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME		DATE	TIME
R.M. Stolley	10/8/09	845	Matt Carter	10/9/09	10:10			

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT YES / NO	CUSTODY SEAL NO.	LABORATORY REMARKS:
			NO		

R0905778
Parsons Engineering Science
SEAD-12 RA

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

CAS/Rochester
1 Mustard St., suite 250
Rochester, NY 14609
ph.:585-288-5380
fax: 585-288-8475
e-mail: mperry@rochester.caslab.com

Serial or COC #:100909-1
Possible Hazards: Unknown
Sample Disposal: Lab Disposal

PAGE 1 OF 1

PROJECT & CLIENT INFORMATION

PROJECT REFERENCE/NAME: SEAD-12 RA	PROJECT NO.: 746762-02000	Project State: NY
LAB PROJECT MANAGER: Mike Perry	P.O. NUMBER: 746762-02000-00	CONTRACT/Quote NO.: 746762-02000-00
CLIENT (SITE) PM: Jeff Adams/Brendan Baranek-Olmstead	CLIENT PHONE: 617-285-6821(BBO)	CLIENT FAX: 617-946-9777
CLIENT NAME: Parsons	CLIENT EMAIL: Brendan.Baranek-Olmstead@parsons.com	
CLIENT ADDRESS: 100 High Street, Boston, MA 02110		
Samplers Signature & Initials:		

Final Report Type (Circle at least one): ASP2000 Category B
EDD 5 calendar days
TAT/ DATE DUE 15 calendar days Per QAP/Quote
EXPEDITED REPORT (circle one)
FAX EMAIL POST Other
TAT/ DATE DUE

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

SAMPLED ON DATE	SAMPLED ON TIME	SAMPLE IDENTIFICATION	LABORATORY SAMPLE ID	SAMPLE TYPE	FIELD FILTERED	MATRIX	TCLP VOC - Method 8260B	PCB 8082A						REMARKS
			Sample Information				REQUIRED ANALYSES							
							NUMBER OF CONTAINERS SUBMITTED							
							8	8	8	8	8			
10/9/2009	1440	S12EXSW-J-2-02		G		S	1							1. Please run a straight sample analysis (without dilution) for every sample. 2. Please select one project sample for QA/QC analysis.
10/9/2009	1445	S12EXSW-I-2-02		G		S	1							
10/9/2009	1450	S12EXSW-I-2-03		G		S	1							
10/9/2009	1455	S12EXSW-O-8-05		G		S		1						
10/9/2009	1500	S12EXPR-O-8-05		G		S		1						
														Preservative
														8 Ice

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME		DATE	TIME
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME		DATE	TIME
	10/9/09	1725						

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT YES / NO	CUSTODY SEAL NO.	LABORATORY REMARKS:
			NO		

80999

R0905818
Parsons Engineering Science
SEAD-12

GEL Laboratories

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2009075325 Group I = Rad II Group II = Rad I 233927 Page 1 of 1

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

GEL Laboratories, LLC
2040 Savage Rd.
Charleston, SC 29407
ph.: 843-556-8171
fax: 843-766-1178
e-mail: jhc@gel.com

Serial or COC #: 20-07-09-1
Possible Hazards: Unknown
Sample Disposal: Lab Disposal

PROJECT & CLIENT INFORMATION | Project State: NY

PROJECT REFERENCE/NAME	PROJECT NO.	CONTRACT/Quote NO.
SEAD-12 RA	746762-02000	746762-02000-00
LAB PROJECT MANAGER	**P.O. NUMBER**	
Jake Cook	746762-02000-00	
CLIENT (SITE) PM	**CLIENT PHONE**	**CLIENT FAX**
Jeff Adams/Brendan Baranek-Olmstead	617-285-6821(BBO)	617-946-9777
CLIENT NAME	**CLIENT EMAIL**	
Parsons	Brendan.Baranek-Olmstead@parsons.com	

CLIENT ADDRESS: 100 High Street, Boston, MA 02110
Samplers Signature & Initials: Ben McAllister

PAGE 1 OF 1

Final Report Type (Circle at least one): ASP2000 Category B
EDD 15 calendar days
TAT/ DATE DUE 7 calendar days Per QAP/Quote
EXPEDITED REPORT (circle one)
FAX EMAIL POST Other
TAT/ DATE DUE

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

	SAMPLED ON								Gross Alpha & Beta (USEPA 900.0M)	Gamma Spectroscopy (USEPA 901.1M)	Tritium (USEPA 906.0M)							
	DATE	TIME	SAMPLE IDENTIFICATION	LABORATORY SAMPLE ID	SAMPLE TYPE	FIELD FILTERED	MATRIX	PRESERVATIVE	NUMBER OF CONTAINERS SUBMITTED									REMARKS
.1	7/20/2009	1200	S12DS01		G				X	X	X							1. Please select one project sample for QA/QC analysis. 2. Please report only the requested analyses.
	7/20/2009	1230	S12DS02		G				X	X	X							
	7/20/2009	1300	S12DS03		G				X	X	X							
.2	7/20/2009	1330	S12WS01		G				X	X	X							
	7/20/2009	1345	S12WS02		G				X	X	X							
	7/20/2009	1400	S12WS03		G				X	X	X							
	7/20/2009	1415	S12WS04		G				X	X	X							Preservative
																		8 Ice

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
Ben McAllister	7/20/09	1600						
RECEIVED BY: (SIGNATURE) R.M. Stelling	DATE 7/23/09	TIME 900	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT YES ○ NO ○	CUSTODY SEAL NO.	LABORATORY REMARKS:

Original - Return to Laboratory with Sample(s)

2009052859 234860

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

GEL Laboratories, LLC
2040 Savage Rd.
Charleston, SC 29407
ph.: 843-556-8171
fax: 843-766-1178
e-mail: jhc@gel.com

Serial or COC #: 060809-02
Possible Hazards: Unknown
Sample Disposal: Lab Disposal
PAGE 1 OF 1

PROJECT & CLIENT INFORMATION

PROJECT REFERENCE/NAME	PROJECT NO.	Project State
SEAD-12 RA	746762-02000	NY
LAB PROJECT MANAGER	**P.O. NUMBER**	**CONTRACT/Quote NO.**
Jake Cook	746762-02000-00	746762-02000-00
CLIENT (SITE) PM	**CLIENT PHONE**	**CLIENT FAX**
Jeff Adams/Brendan Baranek-Olmstead	617-285-6821(BBO)	617-946-9777
CLIENT NAME	**CLIENT EMAIL**	
Parsons	Brendan.Baranek-Olmstead@parsons.com	

CLIENT ADDRESS
100 High Street, Boston, MA 02110

Samplers Signature & Initials:

SAMPLED ON DATE	SAMPLED ON TIME	SAMPLE IDENTIFICATION	LABORATORY SAMPLE ID	SAMPLE TYPE	FIELD FILTERED	MATRIX	Gross Alpha & Beta (USEPA 900.0M)	Gamma Spectroscopy (USEPA 901.1M)	Tritium (USEPA 906.0M)	NUMBER OF CONTAINERS SUBMITTED
			Sample Information				REQUIRED ANALYSES			8
8/6/2009	1205	S12DS06								1
8/6/2009	1210	S12DS07								1
8/6/2009	1215	S12DS08								1
8/6/2009	1220	S12DS09								1
8/6/2009	1225	S12DS10								1
8/6/2009	1230	S12DS11								1
8/6/2009	1235	S12DS12								1
8/6/2009	1240	S12DS13								1
8/6/2009	1245	S12DS14								1
8/6/2009	1250	S12DS15								1
8/6/2009	1300	S12DS16								1
8/6/2009	1200	S12DS17								1

Final Report Type (Circle at least one): ASP2000 Category B
EDD 15 calendar days
TAT/ DATE DUE 7 calendar days Per QAP/Quote
EXPEDITED REPORT (circle one)
FAX EMAIL POST Other
TAT/ DATE DUE

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

REMARKS

1. Please run a straight sample analysis (without dilution) for every sample.
2. Please select one project sample for QA/QC analysis.
3. Please report only the requested analyses.

Preservative

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
Ben McMillan	8/6/09	1800						
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
	8/7/09	840						

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT YES / NO	CUSTODY SEAL NO.	LABORATORY REMARKS:

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

GEL Laboratories, LLC
2040 Savage Rd.
Charleston, SC 29407
ph.: 843-556-8171
fax: 843-766-1178
e-mail: jhc@gel.com

Serial or COC #: 060809-02
Possible Hazards: Unknown
Sample Disposal: Lab Disposal

PAGE 1 OF 1

PROJECT & CLIENT INFORMATION

PROJECT REFERENCE/NAME: SEAD-12 RA	PROJECT NO.: 746762-02000	Project State: NY
LAB PROJECT MANAGER: Jake Cook	P.O. NUMBER: 746762-02000-00	CONTRACT/Quote NO.: 746762-02000-00
CLIENT (SITE) PM: [illegible]ff Adams/Brendan Baranek-Olmstead	CLIENT PHONE: 617-285-6821(BBO)	CLIENT FAX: 617-946-9777
[illegible]T NAME: [illegible]ns	CLIENT EMAIL: Brendan.Baranek-Olmstead@parsons.com	
CLIENT ADDRESS: 100 High Street, Boston, MA 02110		
Samplers Signature & Initials:		

Sample Information

REQUIRED ANALYSES

Final Report Type (Circle at least one): ASP2000 Category B
EDD 15 calendar days
TAT/ DATE DUE 7 calendar days Per QAP/Quote
EXPEDITED REPORT (circle one)
FAX EMAIL POST Other
TAT/ DATE DUE

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

SAMPLED ON DATE	SAMPLED ON TIME	SAMPLE IDENTIFICATION	LABORATORY SAMPLE ID	SAMPLE TYPE	FIELD FILTERED	MATRIX	Gross Alpha & Beta (USEPA 900.0M)	Gamma Spectroscopy (USEPA 901.1M)	Tritium (USEPA 906.0M)							
							8									
							NUMBER OF CONTAINERS SUBMITTED									
8/6/2009	730	S12STOCK-C1-02					1									
8/6/2009	740	S12STOCK-C1-03					1									
8/6/2009	750	S12STOCK-C1-04					1									
8/6/2009	800	S12STOCK-C1-05					1									
8/6/2009	810	S12STOCK-C1-06					1									
8/6/2009	820	S12STOCK-C1-07					1									
8/6/2009	840	S12STOCK-C1-08					1									
8/6/2009	850	S12STOCK-C1-09					1									
8/6/2009	900	S12STOCK-C1-10					1									
8/6/2009	930	S12STOCK-C1-11					1									

REMARKS

1. Please run a straight sample analysis (without dilution) for every sample.
2. Please select one project sample for QA/QC analysis.
3. Please report only the requested analyses.

Preservative

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
Ben McWhirth	8/6/09	1800						
RECEIVED BY: (SIGNATURE)	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**
R M Stelling	8/7/09	845						

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	LABORATORY REMARKS:
			YES NO YES NO		

Original - Return to Laboratory with Sample(s)

Page: 1 of 8
Project #: 746762-02000
GEL Quote #: GELP09-0049
COC Number (1):
PO Number: 746762-02000

GEL Chain of Custody and Analytical Request

See www.gel.com for GEL's Sample Acceptance SOP

GEL Work Order Number: 239550

GEL Laboratories, LLC
2040 Savage Road
Charleston, SC 29407
Phone: (843) 556-8171
Fax: (843) 766-1178

Client Name: Parsons — Phone #: 617-285-6821

Project/Site Name: SEAD-12 RA — Fax #: 617-946-9777

Address: 100 High Street, Boston, MA 02110

Collected by: B McAllister, M Pierson — Send Results To: Brendan.Baranek-Olmstead@parsons.com

Sample Analysis Requested (5) (Fill in the number of containers for each test)

Sample ID * For composites - indicate start and stop date/time	*Date Collected (mm-dd-yy)	*Time Collected (Military) (hhmm)	QC Code (2)	Field Filtered (3)	Sample Matrix (4)	Should this sample be considered: Radioactive	Should this sample be considered: TSCA Regulated	Total number of containers	Gross Alpha & Beta (USEPA 900.0M)	Gamma Spectroscopy (USEPA 901.1M)								<-- Preservative Type (6)
S12EXSW-B-1-01	1532	93009			S	X		1	X	X								
S12EXSW-N-10-01	1357	92909			S	X		1	X	X								
S12EXSW-N-10-02	1311	92909			S	X		1	X	X								
S12EXSW-O-10-01	1325	92909			S	X		1	X	X								
S12EXSW-O-9-01	1330	92909			S	X		1	X	X								
S12EXSW-N-9-01	1350	92909			S	X		1	X	X								
S12EXSW-O-8-02	1118	100109			S	X		1	X	X								
S12EXSW-O-8-03	1125	100109			S	X		1	X	X								
S12EXSW-O-7-01	1127	100109			S	X		1	X	X								

Comments
Note: extra sample is required for sample specific QC

TAT Requested: Normal: Rush: X Specify: 7 Day (Subject to Surcharge) — Fax Results: Yes / No

Circle Deliverable: C of A / QC Summary / Level 1 / Level 2 / Level 3 / Level 4

Remarks: *Are there any known hazards applicable to these samples? If so, please list the hazards*

Sample Collection Time Zone
Eastern Pacific
Central Other _____
Mountain

Chain of Custody Signatures

	Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1	Ben McAllister			Richard Arden	10/7/09	0910
2						
3						

Sample Shipping and Delivery Details

GEL PM:
Method of Shipment: Date Shipped:
Airbill #:
Airbill #:

1.) Chain of Custody Number = Client Determined
2.) QC Codes: **N** = Normal Sample, **TB** = Trip Blank, **FD** = Field Duplicate, **EB** = Equipment Blank, **MS** = Matrix Spike Sample, **MSD** = Matrix Spike Duplicate Sample, **G** = Grab, **C** = Composite
3.) Field Filtered: For liquid matrices, indicate with a - **Y** - for yes the sample was field filtered or - **N** - for sample was not field filtered.
4.) Matrix Codes: **DW**=Drinking Water, **GW**=Groundwater, **SW**=Surface Water, **WW**=Waste Water, **W**=Water, **ML**=Misc Liquid, **SO**=Soil, **SD**=Sediment, **SL**=Sludge, **SS**=Solid Waste, **O**=Oil, **F**=Filter, **P**=Wipe, **U**=Urine, **F**=Fecal, **N**=Nasal
5.) Sample Analysis Requested: Analytical method requested (i.e. **8260B, 6010B/7470A**) and number of containers provided for each (i.e. *8260B* - **3**, *6010B/7470A* - **1**).
6.) Preservative Type: **HA** = Hydrochloric Acid, **NI** = Nitric Acid, **SH** = Sodium Hydroxide, **SA** = Sulfuric Acid, **AA** = Ascorbic Acid, **HX** = Hexane, **ST** = Sodium Thiosulfate, If no preservative is added = leave field blank

For Lab Receiving Use Only
Custody Seal Intact? *YES* *NO*
Cooler Temp: _____ C

WHITE = LABORATORY **YELLOW = FILE** **PINK = CLIENT**

age: 2
roject #: 746762-02
EL Quote #: GEL
OC Number [1]:
O Number: 746762-

GEL Chain of Custody and Analytical Request

See www.gel.com for GEL's Sample Acceptance SOP

GEL Work Order Number: 238550

GEL Laboratories, LLC
2040 Savage Road
Charleston, SC 29407
Phone: (843) 556-8171
Fax: (843) 766-1178

lient Name: Parsons Phone #: 617-285-6821

roject/Site Name: SEAD-12 RA Fax #: 617-946-9777

ddress: 100 High Street, Boston, MA 02110

ollected by: B Mc/ Send Results To: Brendan.Baranek-Olmstead@parsons.com

Sample Analysis Requested [5] (Fill in the number of containers for each test)

Sample ID * For composites - indicate start and stop date/time	*Date Collected (mm-dd-yy)	*Time Collected (Military) (hhmm)	QC Code [2]	Field Filtered [3]	Sample Matrix [4]	Should this sample be considered: Radioactive	Should this sample be considered: TSCA Regulated	Total number of containers	Gross Alpha & Beta (USEPA 900.0M)	Gamma Spectroscopy (USEPA 901.1M)	Preservati	Comments Note: extra sample is required
S12EXSW-J-5-01	92909	1410			S	X		1	X	X		
S12EXSW-J-4-02	92909	1415			S	X		1	X	X		
S12EXSW-J-4-03	93009	1705			S	X		1	X	X		
S12EXSW-J-4-01	92909	1426			S	X		1	X	X		
S12EXSW-K-4-01	93009	1647			S	X		1	X	X		
S12EXSW-K-3-01	93009	1632			S	X		1	X	X		
S12EXSW-J-2-01	93009	1622			S	X		1	X	X		
S12EXSW-J-3-01	92909	1437			S	X		1	X	X		
S12EXSW-I-2-01	93009	1602			S	X		1	X	X		
S12EXSW-I-3-01	93009	1551			S	X		1	X	X		

ested: Normal: Rush: X Specify: 7 Day (Subject t Fax Results: Yes / No

Circle Deliverable: C of A / QC Summary / Level 1 / Level 2 / Level 3 / Level 4

Remarks: *Are there any known hazards applicable to these samples? If so, please list the hazards*

Sample Collection Time Zone
Eastern Pacific
Central Other
Mountain

Chain of Custody Signatures

	Relinquished By (Signed)	Received By (signed)	Date	Time
1		1	10/7/09	0910
2		2		
3		3		

Sample Shipping and Delivery Details

GEL PM:

Method of Shipment: Date Shipped:

Airbill #:

Airbill #:

1.) Chain of Custody Number = Client Determined

2.) QC Codes: **N** = Normal Sample, **TB** = Trip Blank, **FD** = Field Duplicate, **EB** = Equipment Blank, **MS** = Matrix Spike Sample, **MSD** = Matrix Spike Duplicate Sample, **G** = Grab, **C** = Composite

3.) Field Filtered: For liquid matrices, indicate with a - **Y** - for yes the sample was field filtered or - **N** - for sample was not field filtered.

4.) Matrix Codes: **DW**=Drinking Water, **GW**=Groundwater, **SW**=Surface Water, **WW**=Waste Water, **W**=Water, **ML**=Misc Liquid, **SO**=Soil, **SD**=Sediment, **SL**=Sludge, **SS**=Solid Waste, **O**=Oil, **F**=Filter, **P**=Wipe, **U**=Urine, **F**=Fecal, **N**=Nasal

5.) Sample Analysis Requested: Analytical method requested (i.e. ***8260B*** - **3**, ***6010B/7470A*** - **1**).

6.) Preservative Type: **HA** = Hydrochloric Acid, **NI** = Nitric Acid, **SH** = Sodium Hydroxide, **SA** = Sulfuric Acid, **AA** = Ascorbic Acid, **HX** = Hexane, **ST** = Sodium Thiosulfate, If no preservative is added = leave field blank

Lab Receiving Use O

Custody Seal Intact?
YES *NO*

Cooler Temp:
C

WHITE = LABORATORY **YELLOW = FILE** **PINK = CLIENT**

age: 3
roject #: 746762-02
EL Quote #: GEL
OC Number (1):
O Number: 746762-

GEL Chain of Custody and Analytical Request

See www.gel.com for GEL's Sample Acceptance SOP

GEL Work Order Number: 238550

GEL Laboratories, LLC
2040 Savage Road
Charleston, SC 29407
Phone: (843) 556-8171
Fax: (843) 766-1178

lient Name: Parsons Phone #: 617-285-6821

roject/Site Name: SEAD-12 RA Fax #: 617-946-9777

ddress: 100 High Street, Boston, MA 02110

ollected by: B Mc/ Send Results To: Brendan.Baranek-Olmstead@parsons.com

Sample Analysis Requested (5) (Fill in the number of containers for each test)

Sample ID * For composites - indicate start and stop date/time	*Date Collected (mm-dd-yy)	*Time Collected (Military) (hhmm)	QC Code (2)	Field Filtered (3)	Sample Matrix (4)	Should this sample be considered: Radioactive	TSCA Regulated	Total number of containers	Gross Alpha & Beta (USEPA 900.0M)	Gamma Spectroscopy (USEPA 901.1M)									Preservati Comments Note: extra sample is required
12EXSW-E-1-01	92909	1509			S	x		1	X	X									
12EXSW-D-1-01	92909	1454			S	x		1	X	X									
12EXSW-D-2-01	93009	1314			S	x		1	X	X									
12EXSW-C-1-01	93009	1445			S	x		1	X	X									
12EXSW-C-2-01	93009	1324			S	x		1	X	X									
12EXSW-B-2-01	93009	1508			S	x		1	X	X									
12EXSW-A-2-01	93009	1516			S	x		1	X	X									
12EXSW-N-9-02	92909	1345			S	x		1	X	X									
12EXPR-J-3-02	92909	1448			S	x		1	X	X									
12EXFL-N-9-01	92909	1340			S	x		1	X	X									

ested: Normal: Rush: X Specify: 7 Day (Subject t Fax Results: Yes / No

Circle Deliverable: C of A / QC Summary / Level 1 / Level 2 / Level 3 / Level 4

Remarks: *Are there any known hazards applicable to these samples? If so, please list the hazards*

Sample Collection Time Zone
Eastern Pacific
Central Other _____
Mountain

Chain of Custody Signatures

Relinquished By (Signed)	Received by (signed)	Date	Time
1 Ben McAllister	1 [signature]	10/7/09	0910
2	2		
3	3		

Sample Shipping and Delivery Details

GEL PM:

Method of Shipment: Date Shipped:

Airbill #:

Airbill #:

1.) Chain of Custody Number = Client Determined
2.) QC Codes: N = Normal Sample, TB = Trip Blank, FD = Field Duplicate, EB = Equipment Blank, MS = Matrix Spike Sample, MSD = Matrix Spike Duplicate Sample, G = Grab, C = Composite
3.) Field Filtered: For liquid matrices, indicate with a - Y - for yes the sample was field filtered or - N - for sample was not field filtered.
4.) Matrix Codes: DW=Drinking Water, GW=Groundwater, SW=Surface Water, WW=Waste Water, W=Water, ML=Misc Liquid, SO=Soil, SD=Sediment, SL=Sludge, SS=Solid Waste, O=Oil, F=Filter, P=Wipe, U=Urine, F=Fecal, N=Nasal
5.) Sample Analysis Requested: Analytical method requested (i.e. 8260B, 6010B/7470A) and number of containers provided for each (i.e. *8260B* - 3, *6010B/7470A* - 1).
6.) Preservative Type: HA = Hydrochloric Acid, NI = Nitric Acid, SH = Sodium Hydroxide, SA = Sulfuric Acid, AA = Ascorbic Acid, HX = Hexane, ST = Sodium Thiosulfate, If no preservative is added = leave field blank

Lab Receiving Use O

Custody Seal Intact? *YES* *NO*

Cooler Temp: _____ *C*

WHITE = LABORATORY **YELLOW = FILE** **PINK = CLIENT**

ıge: 4
:oject #: 746762-02
EL Quote #: GEL
OC Number (1):
O Number: 746762-

GEL Chain of Custody and Analytical Request

See www.gel.com for GEL's Sample Acceptance SOP

GEL Work Order Number: 238550

GEL Laboratories, LLC
2040 Savage Road
Charleston, SC 29407
Phone: (843) 556-8171
Fax: (843) 766-1178

lient Name: Parsons Phone #: 617-285-6821

roject/Site Name: SEAD-12 RA Fax #: 617-946-9777

ddress: 100 High Street, Boston, MA 02110

ollected by: B Mc/ Send Results To: Brendan.Baranek-Olmstead@parsons.com

Sample Analysis Requested (5) (Fill in the number of containers for each test)

Sample ID (* For composites - indicate start and stop date/time)	*Date Collected (mm-dd-yy)	*Time Collected (Military) (hhmm)	QC Code (2)	Field Filtered (3)	Sample Matrix (4)	Should this sample be considered: Radioactive	TSCA Regulated	Total number of containers	Gross Alpha & Beta (USEPA 900.0M)	Gamma Spectroscopy (USEPA 901.1M)									Preservati Comments Note: extra sample is required
12EXFL-O-10-01	92909	1318			S	x		1	X	X									
12EXPR-B-1-01	93009	1538			S	x		1	X	X									
12EXPR-N-10-01	92909	1359			S	x		1	X	X									
12EXPR-N-10-02	92909	1315			S	x		1	X	X									
12EXPR-O-10-01	100209	1447			S	x		1	X	X									
12EXPR-0-9-01	92909	1333			S	x		1	X	X									
12EXFL-N-9-02	92909	1337			S	x		1	X	X									
12EXPR-N-9-01	92909	1353			S	x		1	X	X									
12EXFL-O-10-03B	92909	1320			S	x		1	X	X									
12EXPR-O-8-02	100109	1120			S	x		1	X	X									

ested: Normal: Rush: X Specify: 7 Day (Subject t Fax Results: Yes / No

Circle Deliverable: C of A / QC Summary / Level 1 / Level 2 / Level 3 / Level 4

Remarks: *Are there any known hazards applicable to these samples? If so, please list the hazards*

Sample Collection Time Zone
Eastern Pacific
Central Other _____
Mountain

Chain of Custody Signatures

Relinquished By (Signed)	Received by (signed)	Date	Time
1 Ben McAllister	1 [signature]	10/7/09	0910
2	2		
3	3		

Sample Shipping and Delivery Details

GEL PM:

Method of Shipment: Date Shipped:

Airbill #:

Airbill #:

1.) Chain of Custody Number = Client Determined
2.) QC Codes: **N** = Normal Sample, **TB** = Trip Blank, **FD** = Field Duplicate, **EB** = Equipment Blank, **MS** = Matrix Spike Sample, **MSD** = Matrix Spike Duplicate Sample, **G** = Grab, **C** = Composite
3.) Field Filtered: For liquid matrices, indicate with a - **Y** - for yes the sample was field filtered or - **N** - for sample was not field filtered.
4.) Matrix Codes: **DW**=Drinking Water, **GW**=Groundwater, **SW**=Surface Water, **WW**=Waste Water, **W**=Water, **ML**=Misc Liquid, **SO**=Soil, **SD**=Sediment, **SL**=Sludge, **SS**=Solid Waste, **O**=Oil, **F**=Filter, **P**=Wipe, **U**=Urine, **F**=Fecal, **N**=Nasal
5.) Sample Analysis Requested: Analytical method requested (i.e. **8260B, 6010B/7470A**) and number of containers provided for each (i.e. *8260B* - **3**, *6010B/7470A* - **1**).
6.) Preservative Type: **HA** = Hydrochloric Acid, **NI** = Nitric Acid, **SH** = Sodium Hydroxide, **SA** = Sulfuric Acid, **AA** = Ascorbic Acid, **HX** = Hexane, **ST** = Sodium Thiosulfate, If no preservative is added = leave field blank

Lab Receiving Use O

Custody Seal Intact? *YES* *NO*

Cooler Temp: _____ *C*

WHITE = LABORATORY **YELLOW = FILE** **PINK = CLIENT**

ge: 5
oject #: 746762-02
L Quote #: GEL
C Number [1]:
) Number: 746762-

GEL Chain of Custody and Analytical Request

See www.gel.com for GEL's Sample Acceptance SOP

GEL Work Order Number: 236550

GEL Laboratories, LLC
2040 Savage Road
Charleston, SC 29407
Phone: (843) 556-8171
Fax: (843) 766-1178

ient Name: Parsons — Phone #: 617-285-6821

oject/Site Name: SEAD-12 RA — Fax #: 617-946-9777

ddress: 100 High Street, Boston, MA 02110

ollected by: B Mc / Send Results To: Brendan.Baranek-Olmstead@parsons.com

Sample Analysis Requested [5] (Fill in the number of containers for each test)

Sample ID * For composites - indicate start and stop date/time	*Date Collected (mm-dd-yy)	*Time Collected (Military) (hhmm)	QC Code [2]	Field Filtered [3]	Sample Matrix [4]	Should this sample be considered: Radioactive	Should this sample be considered: TSCA Regulated	Total number of containers	Gross Alpha & Beta (USEPA 900.0M)	Gamma Spectroscopy (USEPA 901.1M)	Preservati	Comments Note: extra sample is required
12EXPR-O-8-03	100109	1125			S	x		1	X	X		
12EXFL-O-8-01	100109	1140			S	x		1	X	X		
12EXPR-O-7-01	100109	1130			S	x		1	X	X		
12EXPR-J-5-01	92909	1410			S	x		1	X	X		
12EXPR-J-4-02	92909	1420			S	x		1	X	X		
12EXPR-J-4-03	100109	1100			S	x		1	X	X		
12EXFL-B-1-02	92909	1428			S	x		1	X	X		
12EXFL-B-1-02	93009	1540			S	x		1	X	X		
12EXFL-J-4-01	93009	1658			S	x		1	X	X		

sted: Normal: Rush: X Specify: 7 Day (Subject t Fax Results: Yes / No

Circle Deliverable: C of A / QC Summary / Level 1 / Level 2 / Level 3 / Level 4

Remarks: *Are there any known hazards applicable to these samples? If so, please list the hazards*

Sample Collection Time Zone
Eastern Pacific
Central Other
Mountain

Chain of Custody Signatures

Relinquished By (Signed)	Received by (signed)	Date	Time
1 Ben McAllister	1	10/7/09	0910
2	2		
3	3		

Sample Shipping and Delivery Details

GEL PM:

Method of Shipment: Date Shipped:

Airbill #:

Airbill #:

1.) Chain of Custody Number = Client Determined

2.) QC Codes: **N** = Normal Sample, **TB** = Trip Blank, **FD** = Field Duplicate, **EB** = Equipment Blank, **MS** = Matrix Spike Sample, **MSD** = Matrix Spike Duplicate Sample, **G** = Grab, **C** = Composite

3.) Field Filtered: For liquid matrices, indicate with a - **Y** - for yes the sample was field filtered or - **N** - for sample was not field filtered.

4.) Matrix Codes: **DW**=Drinking Water, **GW**=Groundwater, **SW**=Surface Water, **WW**=Waste Water, **W**=Water, **ML**=Misc Liquid, **SO**=Soil, **SD**=Sediment, **SL**=Sludge, **SS**=Solid Waste, **O**=Oil, **F**=Filter, **P**=Wipe, **U**=Urine, **F**=Fecal, **N**=Nasal

5.) Sample Analysis Requested: Analytical method requested (i.e. **8260B, 6010B/7470A**) and number of containers provided for each (i.e. *8260B* - **3**, *6010B/7470A* - **1**).

6.) Preservative Type: **HA** = Hydrochloric Acid, **NI** = Nitric Acid, **SH** = Sodium Hydroxide, **SA** = Sulfuric Acid, **AA** = Ascorbic Acid, **HX** = Hexane, **ST** = Sodium Thiosulfate, If no preservative is added = leave field blank

Lab Receiving Use O

Custody Seal Intact?
YES NO

Cooler Temp:
_____ C

WHITE = LABORATORY **YELLOW = FILE** **PINK = CLIENT**

ge: 6
oject #: 746762-02
L Quote #: GEL
C Number (1):
Number: 746762-

GEL Chain of Custody and Analytical Request

See www.gel.com for GEL's Sample Acceptance SOP

GEL Work Order Number: 238550

GEL Laboratories, LLC
2040 Savage Road
Charleston, SC 29407
Phone: (843) 556-8171
Fax: (843) 766-1178

ient Name: Parsons Phone #: 617-285-6821

oject/Site Name: SEAD-12 RA Fax #: 617-946-9777

ddress: 100 High Street, Boston, MA 02110

ollected by: B Mc/ Send Results To: Brendan.Baranek-Olmstead@parsons.com

Sample Analysis Requested (5) (Fill in the number of containers for each test)

Sample ID (* For composites - indicate start and stop date/time)	*Date Collected (mm-dd-yy)	*Time Collected (Military) (hhmm)	QC Code (2)	Field Filtered (3)	Sample Matrix (4)	Should this sample be considered: Radioactive	TSCA Regulated	Total number of containers	Gross Alpha & Beta (USEPA 900.0M)	Gamma Spectroscopy (USEPA 901.1M)									Preservati Comments Note: extra sample is required
12EXPR-K-4-01	93009	1653			S	x		1	X	X									
12EXPR-K-3-01	93009	1637			S	x		1	X	X									
12EXFL-K-3-01	93009	1642			S	x		1	X	X									
12EXPR-J-2-01	93009	1626			S	x		1	X	X									
12EXPR-J-3-01	92909	1445			S	x		1	X	X									
12EXFL-I-3-01	93009	1615			S	x		1	X	X									
12EXPR-I-2-01	93009	1610			S	x		1	X	X									
12EXPR-I-3-01	93009	1556			S	x		1	X	X									
12EXFL-O-8-02B	100109	1135			S	x		1	X	X									
12EXPR-E-1-01	92909	1510			S	x		1	X	X									

sted: Normal: Rush: X Specify: 7 Day (Subject t Fax Results: Yes / No

Circle Deliverable: C of A / QC Summary / Level 1 / Level 2 / Level 3 / Level 4

emarks: Are there any known hazards applicable to these samples? If so, please list the hazards

Sample Collection Time Zone
Eastern Pacific
Central Other _____
Mountain

Chain of Custody Signatures

Relinquished By (Signed)	Received by (signed)	Date	Time
Ben McAllish	1 [signature]	10/7/09	0910
	2		
	3		

Sample Shipping and Delivery Details

GEL PM:

Method of Shipment: Date Shipped:

Airbill #:

Airbill #:

.) Chain of Custody Number = Client Determined
.) QC Codes: **N** = Normal Sample, **TB** = Trip Blank, **FD** = Field Duplicate, **EB** = Equipment Blank, **MS** = Matrix Spike Sample, **MSD** = Matrix Spike Duplicate Sample, **G** = Grab, **C** = Composite
.) Field Filtered: For liquid matrices, indicate with a - **Y** - for yes the sample was field filtered or - **N** - for sample was not field filtered.
.) Matrix Codes: **DW**=Drinking Water, **GW**=Groundwater, **SW**=Surface Water, **WW**=Waste Water, **W**=Water, **ML**=Misc Liquid, **SO**=Soil, **SD**=Sediment, **SL**=Sludge, **SS**=Solid Waste, **O**=Oil, **F**=Filter, **P**=Wipe, **U**=Urine, **F**=Fecal, **N**=Nasal
.) Sample Analysis Requested: Analytical method requested (i.e. **8260B, 6010B/7470A**) and number of containers provided for each (i.e. *8260B* - **3**, *6010B/7470A* - **1**).
.) Preservative Type: **HA** = Hydrochloric Acid, **NI** = Nitric Acid, **SH** = Sodium Hydroxide, **SA** = Sulfuric Acid, **AA** = Ascorbic Acid, **HX** = Hexane, **ST** = Sodium Thiosulfate, If no preservative is added = leave field blank

Lab Receiving Use O

Custody Seal Intact? *YES* *NO*

Cooler Temp: _____ *C*

WHITE = LABORATORY **YELLOW = FILE** **PINK = CLIENT**

ge: 7
oject #: 746762-02
L Quote #: GEL
OC Number [1]:
) Number: 746762-

GEL Chain of Custody and Analytical Request

See www.gel.com for GEL's Sample Acceptance SOP

GEL Work Order Number: 238550

GEL Laboratories, LLC
2040 Savage Road
Charleston, SC 29407
Phone: (843) 556-8171
Fax: (843) 766-1178

ient Name: Parsons — Phone #: 617-285-6821

oject/Site Name: SEAD-12 RA — Fax #: 617-946-9777

ddress: 100 High Street, Boston, MA 02110

ollected by: B Mc/ Send Results To: Brendan.Baranek-Olmstead@parsons.com

Sample Analysis Requested [5] (Fill in the number of containers for each test)

Sample ID (* For composites - indicate start and stop date/time)	*Date Collected (mm-dd-yy)	*Time Collected (Military) (hhmm)	QC Code [2]	Field Filtered [3]	Sample Matrix [4]	Should this sample be considered: Radioactive	Should this sample be considered: TSCA Regulated	Total number of containers	Gross Alpha & Beta (USEPA 900.0M)	Gamma Spectroscopy (USEPA 901.1M)								Preservati	Comments Note: extra sample is required
12EXFL-E-1-01	92909	1502			S	x		1	X	X									
12EXPR-D-1-01	92909	1459			S	x		1	X	X									
12EXPR-D-2-01	93009	1320			S	x		1	X	X									
12EXPR-C-1-01	93009	1449			S	x		1	X	X									
12EXFL-C-2-01	92909	1436			S	x		1	X	X									
12EXPR-C-2-01	93009	1322			S	x		1	X	X									
12EXFL-B-2-01	93009	1500			S	x		1	X	X									
12EXPR-B-2-01	93009	1512			S	x		1	X	X									
12EXPR-A-2-01	93009	1520			S	x		1	X	X									
12EXSW-O-08-05R	100109	1113			S	x		1	X	X									

sted: Normal: Rush: X Specify: 7 Day (Subject t — Fax Results: Yes / No

Circle Deliverable: C of A / QC Summary / Level 1 / Level 2 / Level 3 / Level 4

Remarks: *Are there any known hazards applicable to these samples? If so, please list the hazards*

Sample Collection Time Zone: Eastern Pacific Central Other _____ Mountain

Chain of Custody Signatures

Relinquished By (Signed)	Received by (signed) Date Time
1	1 10/7/09 0910
2	2
3	3

Sample Shipping and Delivery Details

GEL PM:

Method of Shipment: Date Shipped:

Airbill #:

Airbill #:

1.) Chain of Custody Number = Client Determined

2.) QC Codes: **N** = Normal Sample, **TB** = Trip Blank, **FD** = Field Duplicate, **EB** = Equipment Blank, **MS** = Matrix Spike Sample, **MSD** = Matrix Spike Duplicate Sample, **G** = Grab, **C** = Composite

3.) Field Filtered: For liquid matrices, indicate with a - **Y** - for yes the sample was field filtered or - **N** - for sample was not field filtered.

4.) Matrix Codes: **DW**=Drinking Water, **GW**=Groundwater, **SW**=Surface Water, **WW**=Waste Water, **W**=Water, **ML**=Misc Liquid, **SO**=Soil, **SD**=Sediment, **SL**=Sludge, **SS**=Solid Waste, **O**=Oil, **F**=Filter, **P**=Wipe, **U**=Urine, **F**=Fecal, **N**=Nasal

5.) Sample Analysis Requested: Analytical method requested (i.e. **8260B, 6010B/7470A**) and number of containers provided for each (i.e. *8260B* - **3**, *6010B/7470A* - **1**).

6.) Preservative Type: **HA** = Hydrochloric Acid, **NI** = Nitric Acid, **SH** = Sodium Hydroxide, **SA** = Sulfuric Acid, **AA** = Ascorbic Acid, **HX** = Hexane, **ST** = Sodium Thiosulfate, If no preservative is added = leave field blank

Lab Receiving Use C

Custody Seal Intact? YES NO

Cooler Temp: _____ C

WHITE = LABORATORY **YELLOW = FILE** **PINK = CLIENT**

ge: 8
oject #: 746762-02
EL Quote #: GEL
OC Number [1]:
) Number: 746762-

GEL Chain of Custody and Analytical Request

See www.gel.com for GEL's Sample Acceptance SOP

GEL Work Order Number: 238550

GEL Laboratories, LLC
2040 Savage Road
Charleston, SC 29407
Phone: (843) 556-8171
Fax: (843) 766-1178

lient Name: Parsons — Phone #: 617-285-6821

roject/Site Name: SEAD-12 RA — Fax #: 617-946-9777

ddress: 100 High Street, Boston, MA 02110

ollected by: B Mc/ — Send Results To: Brendan.Baranek-Olmstead@parsons.com

Sample Analysis Requested [5] (Fill in the number of containers for each test)

Sample ID * For composites - indicate start and stop date/time	*Date Collected (mm-dd-yy)	*Time Collected (Military) (hhmm)	QC Code [2]	Field Filtered [3]	Sample Matrix [4]	Should this sample be considered: Radioactive	Should this sample be considered: TSCA Regulated	Total number of containers	Gross Alpha & Beta (USEPA 900.0M)	Gamma Spectroscopy (USEPA 901.1M)	Preservati	Comments Note: extra sample is required
12EXSW-O-08-05R	100109	1113			S	x		1	X	X		
12EXPR-O-08-05R	100109	1115			S	x		1	X	X		
12EXFL-K-3-01	93009	1642			S	x		1	X	X		
12EXSW-1-3-01R	93009	1551			S	x		1	X	X		
12EXFL-B-2-01	100209	1441			S	x		1	X	X		
12EXPR-J-4-01	100209	1430			S	x		1	X	X		
12EXSW-J-3-02	100209	1424			S	x		1	X	X		
12EXD-Stock-01	100209	1453			S	x		1	X	X		

ested: Normal: Rush: X Specify: 7 Day (Subject to Fax Results: Yes / No

Circle Deliverable: C of A / QC Summary / Level 1 / Level 2 / Level 3 / Level 4

Remarks: *Are there any known hazards applicable to these samples? If so, please list the hazards*

Sample Collection Time Zone
Eastern Pacific
Central Other
Mountain

Chain of Custody Signatures

	Relinquished By (Signed)	Received by (signed)	Date	Time
1	Ben McAllister		10/7/09	0910
2				
3				

Sample Shipping and Delivery Details

GEL PM:

Method of Shipment: Date Shipped:

Airbill #:

Airbill #:

1.) Chain of Custody Number = Client Determined

2.) QC Codes: **N** = Normal Sample, **TB** = Trip Blank, **FD** = Field Duplicate, **EB** = Equipment Blank, **MS** = Matrix Spike Sample, **MSD** = Matrix Spike Duplicate Sample, **G** = Grab, **C** = Composite

3.) Field Filtered: For liquid matrices, indicate with a **- Y -** for yes the sample was field filtered or **- N -** for sample was not field filtered.

4.) Matrix Codes: **DW**=Drinking Water, **GW**=Groundwater, **SW**=Surface Water, **WW**=Waste Water, **W**=Water, **ML**=Misc Liquid, **SO**=Soil, **SD**=Sediment, **SL**=Sludge, **SS**=Solid Waste, **O**=Oil, **F**=Filter, **P**=Wipe, **U**=Urine, **F**=Fecal, **N**=Nasal

5.) Sample Analysis Requested: Analytical method requested (i.e. ***8260B*, *6010B/7470A*** - **1**).

6.) Preservative Type: **HA** = Hydrochloric Acid, **NI** = Nitric Acid, **SH** = Sodium Hydroxide, **SA** = Sulfuric Acid, **AA** = Ascorbic Acid, **HX** = Hexane, **ST** = Sodium Thiosulfate, If no preservative is added = leave field blank

Lab Receiving Use C

Custody Seal Intact? *YES* *NO*

Cooler Temp: _____ C

WHITE = LABORATORY **YELLOW = FILE** **PINK = CLIENT**

Page: 1 of
Project #: 746762-02000
GEL Quote #: GELP09-0049
COC Number (1):
PO Number: 746762-02000

GEL Chain of Custody and Analytical Request

See www.gel.com for GEL's Sample Acceptance SOP

GEL Work Order Number: 238774

GEL Laboratories, LLC
2040 Savage Road
Charleston, SC 29407
Phone: (843) 556-8171
Fax: (843) 766-1178

Client Name: Parsons | Phone #: 617-285-6821

Project/Site Name: SEAD-12 RA | Fax #: 617-946-9777

Address: 100 High Street, Boston, MA 02110

Collected by: | Send Results To: Brendan.Baranek-Olmstead@parsons.com

Sample Analysis Requested (5) (Fill in the number of containers for each test)

Sample ID * For composites - indicate start and stop date/time	*Date Collected (mm-dd-yy)	*Time Collected (Military) (hhmm)	QC Code (2)	Field Filtered (3)	Sample Matrix (4)	Should this sample be considered: Radioactive	Should this sample be considered: TSCA Regulated	Total number of containers	Gross Alpha & Beta (USEPA 900.0M)	Gamma Spectroscopy (USEPA 901.1M)	<-- Preservative Type (6)	Comments
S12EXSW-I-3-01 ✓	10/5/2009	16:15			S				1	1		Note: extra sample is required for sample specific QC
S12EXSW-I-3-02 ✓	10/5/2009	16:25			S				1	1		
S12EXFL-I-3-01 ✓	10/5/2009	16:30			S				1	1		
WW1006-01	10/6/2009	1200			water				1	1		
WW1006-01	10/6/2009	1200			water				1	1		
S12EXSW-J-3-02	10/7/2009	0:00			S				1	1		
S12EXPR-J-5-01	10/7/2009	1100			S				1	1		
S12EXPR-C-1-01	10/7/2009	1125			S				1	1		
S12EXFL-O-8-02B	10/7/2009	1120			S				1	1		
S12EXPR-J-4-03	10/7/2009	1105			S				1	1		
S12EXSW-O-8-03	10/7/2009	1115			S				1	1		

TAT Requested: Normal: Rush: X Specify: 7 Day (Subject to Surcharge) | Fax Results: Yes / No | Circle Deliverable: C of A / QC Summary / Level 1 / Level 2 / Level 3 / Level 4

Remarks: *Are there any known hazards applicable to these samples? If so, please list the hazards*

Sample Collection Time Zone: Eastern Pacific Central Other Mountain

Chain of Custody Signatures

	Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1	[signature]	10/7/09	1800	R.M. Stelling	10/8/09	84
2						
3						

Sample Shipping and Delivery Details

GEL PM:

Method of Shipment: Date Shipped:

Airbill #:

Airbill #:

1.) Chain of Custody Number = Client Determined

2.) QC Codes: **N** = Normal Sample, **TB** = Trip Blank, **FD** = Field Duplicate, **EB** = Equipment Blank, **MS** = Matrix Spike Sample, **MSD** = Matrix Spike Duplicate Sample, **G** = Grab, **C** = Composite

3.) Field Filtered: For liquid matrices, indicate with a - **Y** - for yes the sample was field filtered or - **N** - for sample was not field filtered.

4.) Matrix Codes: **DW**=Drinking Water, **GW**=Groundwater, **SW**=Surface Water, **WW**=Waste Water, **W**=Water, **ML**=Misc Liquid, **SO**=Soil, **SD**=Sediment, **SL**=Sludge, **SS**=Solid Waste, **O**=Oil, **F**=Filter, **P**=Wipe, **U**=Urine, **F**=Fecal, **N**=Nasal

5.) Sample Analysis Requested: Analytical method requested (i.e. **8260B, 6010B/7470A**) and number of containers provided for each (i.e. *8260B* - **3**, *6010B/7470A* - **1**).

6.) Preservative Type: **HA** = Hydrochloric Acid, **NI** = Nitric Acid, **SH** = Sodium Hydroxide, **SA** = Sulfuric Acid, **AA** = Ascorbic Acid, **HX** = Hexane, **ST** = Sodium Thiosulfate, If no preservative is added = leave field blank

For Lab Receiving Use Only

Custody Seal Intact? *YES* *NO*

Cooler Temp: C

WHITE = LABORATORY **YELLOW = FILE** **PINK = CLIENT**

Page: 1 of

Project #: 746762-02000
GEL Quote #: GELP09-0049
COC Number (1):
PO Number: 746762-02000

GEL Chain of Custody and Analytical Request

See www.gel.com for GEL's Sample Acceptance SOP

GEL Work Order Number: 238774

GEL Laboratories, LLC
2040 Savage Road
Charleston, SC 29407
Phone: (843) 556-8171
Fax: (843) 766-1178

Client Name: Parsons — Phone #: 617-285-6821
Project/Site Name: SEAD-12 RA — Fax #: 617-946-9777
Address: 100 High Street, Boston, MA 02110
Collected by: — Send Results To: Brendan.Baranek-Olmstead@parsons.com

Sample Analysis Requested (5) (Fill in the number of containers for each test)

Sample ID * For composites - indicate start and stop date/time	*Date Collected (mm-dd-yy)	Time Collected (Military) (hhmm)	QC Code (2)	Field Filtered (3)	Sample Matrix (4)	Should this sample be Radioactive	TSCA Regulated	Total number of containers	Gross Alpha & Beta (USEPA	Gamma Spectroscopy (USEPA	<-- Preservative Type (6)	Comments
S12EXFL-J-2-01	100709	930			S				1	1		Note: extra sample is required for sample specific QC
S12EXSW-J-2-02 ✓	100709	0:00			S				1	1		
S12EXSW-I-2-02 ✓	100709	0:00			S				1	1		
S12EXSW-I-2-03 ✓	100709	945			S				1	1		
S12EXPR-I-2-02 ✓	100709	950			S				1	1		

TAT Requested: Normal: Rush: X Specify: 7 Day (Subject to Surcharge) Fax Results: Yes / No
Circle Deliverable: C of A / QC Summary / Level 1 / Level 2 / Level 3 / Level 4

Remarks: *Are there any known hazards applicable to these samples? If so, please list the hazards*

Sample Collection Time Zone: Eastern Pacific

Chain of Custody Signatures

	Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1	[signature]	10/8/09	18a	R. M. Kelley	10/8/09	845
2						
3						

Sample Shipping and Delivery Details

GEL PM:
Method of Shipment: Date Shipped:
Airbill #:
Airbill #:

1.) Chain of Custody Number = Client Determined
2.) QC Codes: **N** = Normal Sample, **TB** = Trip Blank, **FD** = Field Duplicate, **EB** = Equipment Blank, **MS** = Matrix Spike Sample, **MSD** = Matrix Spike Duplicate Sample, **G** = Grab, **C** = Composite
3.) Field Filtered: For liquid matrices, indicate with a - **Y** - for yes the sample was field filtered or - **N** - for sample was not field filtered.
4.) Matrix Codes: **DW**=Drinking Water, **GW**=Groundwater, **SW**=Surface Water, **WW**=Waste Water, **W**=Water, **ML**=Misc Liquid, **SO**=Soil, **SD**=Sediment, **SL**=Sludge, **SS**=Solid Waste, **O**=Oil, **F**=Filter, **P**=Wipe, **U**=Urine, **F**=Fecal, **N**=Nasal
5.) Sample Analysis Requested: Analytical method requested (i.e. **8260B, 6010B/7470A**) and number of containers provided for each (i.e. *8260B* - **3**, *6010B/7470A* - **1**).
6.) Preservative Type: **HA** = Hydrochloric Acid, **NI** = Nitric Acid, **SH** = Sodium Hydroxide, **SA** = Sulfuric Acid, **AA** = Ascorbic Acid, **HX** = Hexane, **ST** = Sodium Thiosulfate, If no preservative is added = leave field blank

For Lab Receiving Use Only
Custody Seal Intact? *YES* *NO*
Cooler Temp: *C*

WHITE = LABORATORY **YELLOW = FILE** **PINK = CLIENT**

GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: Parsons	**SDG/ARCOC/Work Order:** 238774
Received By: RMS	**Date Received:** 10/8/09

Suspected Hazard Information	**Yes**	**No**	*If Counts > x2 area background on samples not marked "radioactive", contact the Radiation Safety Group of further investigation.
COC/Samples marked as radioactive?		✓	Maximum Counts Observed*:
Classified Radioactive II or III by RSO?		✓	
COC/Samples marked containing PCBs?		✓	
Shipped as a DOT Hazardous?		✓	Hazard Class Shipped: UN#:
Samples identified as Foreign Soil?		✓	

	Sample Receipt Criteria	**Yes**	**NA**	**No**	**Comments/Qualifiers (Required for Non-Conforming Items)**
1	Shipping containers received intact and sealed?	✓			Circle Applicable: seals broken damaged container leaking container other (describe)
2	Samples requiring cold preservation within 0 ≤ 6 deg. C?			✓	Preservation Method: (ice bags) blue ice dry ice none other (describe) see below
3	Chain of custody documents included with shipment?	✓			
4	Sample containers intact and sealed?	✓			Circle Applicable: seals broken damaged container leaking container other (describe)
5	Samples requiring chemical preservation at proper pH?	✓			Sample ID's, containers affected and observed pH: If Preservation added, Lot#:
6	VOA vials free of headspace (defined as < 6mm bubble)?		✓		Sample ID's and containers affected:
7	Are Encore containers present?			✓	(If yes, immediately deliver to Volatiles laboratory)
8	Samples received within holding time?	✓			Id's and tests affected:
9	Sample ID's on COC match ID's on bottles?	✓			Sample ID's and containers affected:
10	Date & time on COC match date & time on bottles?	✓			Sample ID's affected:
11	Number of containers received match number indicated on COC?			✓	Sample ID's affected: received only 1 container for ID's: S12ExF1-J-2-02
12	COC form is properly signed in relinquished/received sections?	✓			received 5 containers for S12ExSW-1-2-03 S12ExPr-I-2-02 " " -2-02

Comments:

received 3 coolers (1) for radchem (2) soils cooler (1) cooler came on ice (1) came w/out ice.

Fx: 7955 0469 2175 @ 19°C - radchem
8703 1343 4451 @ 17°C - soil
7955 0469 2186 @ 3°C - soil - metals, PCB, etc. ↑COC.

PM (or PMA) review: Initials JT Date 10/8/09

Page: 1 of

Project #: 746762-02000

GEL Quote #: GELP09-0049

COC Number (1):

PO Number: 746762-02000

GEL Chain of Custody and Analytical Request

See www.gel.com for GEL's Sample Acceptance SOP

GEL Work Order Number: 238774

GEL Laboratories, LLC
2040 Savage Road
Charleston, SC 29407
Phone: (843) 556-8171
Fax: (843) 766-1178

Client Name: Parsons Phone #: 617-285-6821

Project/Site Name: SEAD-12 RA Fax #: 617-946-9777

Address: 100 High Street, Boston, MA 02110

Collected by: Send Results To: Brendan.Baranek-Olmstead@parsons.com

Sample Analysis Requested (5) (Fill in the number of containers for each test)

Sample ID * For composites - indicate start and stop date/time	*Date Collected (mm-dd-yy)	*Time Collected (Military) (hhmm)	QC Code (2)	Field Filtered (3)	Sample Matrix (4)	Should this sample be considered: Radioactive	Should this sample be considered: TSCA Regulated	Total number of containers	Gross Alpha & Beta (USEPA 900.0M)	Gamma Spectroscopy (USEPA 901.1M)	<-- Preservative Type (6)	Comments
S12EXSW-I-3-01 ✓	10/5/2009	16:15			S				1	1		Note: extra sample is required for sample specific QC
S12EXSW-I-3-02 ✓	10/5/2009	16:25			S				1	1		
S12EXFL-I-3-01 ✓	10/5/2009	16:30			S				1	1		
WW1006-01	10/6/2009	1200			water				1	1		
WW1006-01	10/6/2009	1200			water				1	1		
S12EXSW-J-3-02	10/7/2009	0:00			S				1	1		
S12EXPR-J-5-01	10/7/2009	1100			S				1	1		
S12EXPR-C-1-01	10/7/2009	1125			S				1	1		
S12EXFL-O-8-02B	10/7/2009	1120			S				1	1		
S12EXPR-J-4-03	10/7/2009	1105			S				1	1		
S12EXSW-O-8-03	10/7/2009	1115			S				1	1		

TAT Requested: Normal: Rush: X Specify: 7 Day (Subject to Surcharge) Fax Results: Yes / No

Circle Deliverable: C of A / QC Summary / Level 1 / Level 2 / Level 3 / Level 4

Remarks: *Are there any known hazards applicable to these samples? If so, please list the hazards*

Sample Collection Time Zone: Eastern Central Mountain Pacific Other

Chain of Custody Signatures

	Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1	Brendan McArthur	10/7/09	1800	R.M. Stelling	10/8/09	84
2	Rachel Jones	10/8/09	1700	R.M. Stelling	10/9/09	915
3						

Sample Shipping and Delivery Details

GEL PM:

Method of Shipment: Date Shipped:

Airbill #:

Airbill #:

1.) Chain of Custody Number = Client Determined

2.) QC Codes: N = Normal Sample, TB = Trip Blank, FD = Field Duplicate, EB = Equipment Blank, MS = Matrix Spike Sample, MSD = Matrix Spike Duplicate Sample, G = Grab, C = Composite

3.) Field Filtered: For liquid matrices, indicate with a - Y - for yes the sample was field filtered or - N - for sample was not field filtered.

4.) Matrix Codes: DW=Drinking Water, GW=Groundwater, SW=Surface Water, WW=Waste Water, W=Water, ML=Misc Liquid, SO=Soil, SD=Sediment, SL=Sludge, SS=Solid Waste, O=Oil, F=Filter, P=Wipe, U=Urine, F=Fecal, N=Nasal

5.) Sample Analysis Requested: Analytical method requested (i.e. *8260B*, *6010B/7470A*) and number of containers provided for each (i.e. *8260B* - 3, *6010B/7470A* - 1).

6.) Preservative Type: HA = Hydrochloric Acid, NI = Nitric Acid, SH = Sodium Hydroxide, SA = Sulfuric Acid, AA = Ascorbic Acid, HX = Hexane, ST = Sodium Thiosulfate, If no preservative is added = leave field blank

For Lab Receiving Use Only

Custody Seal Intact? YES NO

Cooler Temp: C

WHITE = LABORATORY **YELLOW = FILE** **PINK = CLIENT**

Page: 1 of
Project #: 746762-02000
GEL Quote #: GELP09-0049
COC Number (1):
PO Number: 746762-02000

GEL Chain of Custody and Analytical Request

See www.gel.com for GEL's Sample Acceptance SOP

GEL Work Order Number: 238774

GEL Laboratories, LLC
2040 Savage Road
Charleston, SC 29407
Phone: (843) 556-8171
Fax: (843) 766-1178

Client Name: Parsons — Phone #: 617-285-6821
Project/Site Name: SEAD-12 RA — Fax #: 617-946-9777
Address: 100 High Street, Boston, MA 02110
Collected by: — Send Results To: Brendan.Baranek-Olmstead@parsons.com

Sample Analysis Requested (5) (Fill in the number of containers for each test)

Sample ID (* For composites - indicate start and stop date/time)	*Date Collected (mm-dd-yy)	Time Collected (Military) (hhmm)	QC Code (2)	Field Filtered (3)	Sample Matrix (4)	Should this sample be Radioactive	Should this sample be TSCA Regulated	Total number of	Gross Alpha & Beta (USEPA	Gamma Spectroscopy (USEPA									<-- Preservative Type (6) Comments Note: extra sample is required for sample specific QC
S12EXFL-J-2-01	100709	930			S				1	1									
S12EXSW-J-2-02 ✓	100709	0:00			S				1	1									
S12EXSW-I-2-02 ✓	100709	0:00			S				1	1									
S12EXSW-I-2-03 ✓	100709	945			S				1	1									
S12EXPR-I-2-02 ✓	100709	950			S				1	1									

TAT Requested: Normal: Rush: X Specify: 7 Day (Subject to Surcharge) Fax Results: Yes / No — Circle Deliverable: C of A / QC Summary / Level 1 / Level 2 / Level 3 / Level 4

Remarks: *Are there any known hazards applicable to these samples? If so, please list the hazards*

Sample Collection Time Zone: Eastern Pacific

Chain of Custody Signatures

	Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1	[signature]	10/8/09	1800	R. M. [signature]	10/8/09	845
2	Rachel Jones	10/8/09	1700	R. M. [signature]	10/9/09	915
3						

Sample Shipping and Delivery Details

GEL PM:
Method of Shipment: — Date Shipped:
Airbill #:
Airbill #:

1.) Chain of Custody Number = Client Determined
2.) QC Codes: N = Normal Sample, TB = Trip Blank, FD = Field Duplicate, EB = Equipment Blank, MS = Matrix Spike Sample, MSD = Matrix Spike Duplicate Sample, G = Grab, C = Composite
3.) Field Filtered: For liquid matrices, indicate with a - Y - for yes the sample was field filtered or - N - for sample was not field filtered.
4.) Matrix Codes: DW=Drinking Water, GW=Groundwater, SW=Surface Water, WW=Waste Water, W=Water, ML=Misc Liquid, SO=Soil, SD=Sediment, SL=Sludge, SS=Solid Waste, O=Oil, F=Filter, P=Wipe, U=Urine, F=Fecal, N=Nasal
5.) Sample Analysis Requested: Analytical method requested (i.e. 8260B, 6010B/7470A) and number of containers provided for each (i.e. *8260B* - 3, *6010B/7470A* - 1).
6.) Preservative Type: HA = Hydrochloric Acid, NI = Nitric Acid, SH = Sodium Hydroxide, SA = Sulfuric Acid, AA = Ascorbic Acid, HX = Hexane, ST = Sodium Thiosulfate, If no preservative is added = leave field blank

For Lab Receiving Use Only
Custody Seal Intact? *YES* *NO*
Cooler Temp: *C*

WHITE = LABORATORY **YELLOW = FILE** **PINK = CLIENT**

GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: Parsons	**SDG/ARCOC/Work Order:** 238774
Received By: RMS	**Date Received:** 10/9/09

Suspected Hazard Information	**Yes**	**No**	*If Counts > x2 area background on samples not marked "radioactive", contact the Radiation Safety Group of further investigation.
COC/Samples marked as radioactive?		✓	Maximum Counts Observed*:
Classified Radioactive II or III by RSO?		✓	40cpm
COC/Samples marked containing PCBs?		✓	
Shipped as a DOT Hazardous?		✓	Hazard Class Shipped: UN#:
Samples identified as Foreign Soil?		✓	

	Sample Receipt Criteria	**Yes**	**NA**	**No**	**Comments/Qualifiers (Required for Non-Conforming Items)**
1	Shipping containers received intact and sealed?	✓			Circle Applicable: seals broken damaged container leaking container other (describe)
2	Samples requiring cold preservation within 0 ≤ 6 deg. C?		✓		Preservation Method: ice bags blue ice dry ice (none) other (describe) 20C
3	Chain of custody documents included with shipment?	✓			
4	Sample containers intact and sealed?	✓			Circle Applicable: seals broken damaged container leaking container other (describe)
5	Samples requiring chemical preservation at proper pH?		✓		Sample ID's, containers affected and observed pH: If Preservation added, Lot#:
6	VOA vials free of headspace (defined as < 6mm bubble)?		✓		Sample ID's and containers affected:
7	Are Encore containers present?			✓	(If yes, immediately deliver to Volatiles laboratory)
8	Samples received within holding time?	✓			Id's and tests affected:
9	Sample ID's on COC match ID's on bottles?	✓			Sample ID's and containers affected:
10	Date & time on COC match date & time on bottles?			✓	Sample ID's affected: SI2EXSW-J-3-02 time on sample 1110.
11	Number of containers received match number indicated on COC?	✓			Sample ID's affected:
12	COC form is properly signed in relinquished/received sections?	✓			

Comments:

UPS: 12 17W 438 13 4859 5796

PM (or PMA) review: Initials VT Date 10/18/09

Page: 1 of
Project #: 746762-02000
GEL Quote #: GELP09-0049
COC Number (1):
PO Number: 746762-02000

GEL Chain of Custody and Analytical Request

See www.gel.com for GEL's Sample Acceptance SOP

GEL Work Order Number: 238837

GEL Laboratories, LLC
2040 Savage Road
Charleston, SC 29407
Phone: (843) 556-8171
Fax: (843) 766-1178

Client Name: Parsons — Phone #: 617-285-6821

Project/Site Name: SEAD-12 RA — Fax #: 617-946-9777

Address: 100 High Street, Boston, MA 02110

Collected by: B McAllister, M Pierson — Send Results To: Brendan.Baranek-Olmstead@parsons.com

Sample Analysis Requested (5) (Fill in the number of containers for each test)

Sample ID (* For composites - indicate start and stop date/time)	*Date Collected (mm-dd-yy)	*Time Collected (Military) (hhmm)	QC Code (2)	Field Filtered (3)	Sample Matrix (4)	Should this sample be considered: Radioactive	Should this sample be considered: TSCA Regulated	Total number of containers	Gross Alpha & Beta (USEPA 900.0M)	Gama Spec	<-- Preservative Type (6)	Comments
S12EXSW-J-3-02	1532	100909				X		1	X	X		Note: extra sample is required for sample specific QC
S12EXSW-O-8-03	1357	100909				X		1	X	X		

TAT Requested: Normal: ___ Rush: X Specify: 7 Day (Subject to Surcharge) — Fax Results: Yes / No

Circle Deliverable: C of A / QC Summary / Level 1 / Level 2 / Level 3 / Level 4

Remarks: *Are there any known hazards applicable to these samples? If so, please list the hazards*

Sample Collection Time Zone
Eastern Pacific
Central Other ___
Mountain

Chain of Custody Signatures

	Relinquished By (signed)	Date	Time	Received by (signed)	Date	Time
1	[signature]	10/6/09	1600	R. M. Kelley	10/12/09	945
2						
3						

Sample Shipping and Delivery Details

GEL PM:
Method of Shipment: Date Shipped:
Airbill #:
Airbill #:

1.) Chain of Custody Number = Client Determined

2.) QC Codes: **N** = Normal Sample, **TB** = Trip Blank, **FD** = Field Duplicate, **EB** = Equipment Blank, **MS** = Matrix Spike Sample, **MSD** = Matrix Spike Duplicate Sample, **G** = Grab, **C** = Composite

3.) Field Filtered: For liquid matrices, indicate with a - **Y** - for yes the sample was field filtered or - **N** - for sample was not field filtered.

4.) Matrix Codes: **DW**=Drinking Water, **GW**=Groundwater, **SW**=Surface Water, **WW**=Waste Water, **W**=Water, ML=Misc Liquid, **SO**=Soil, **SD**=Sediment, **SL**=Sludge, **SS**=Solid Waste, **O**=Oil, **F**=Filter, **P**=Wipe, **U**=Urine, F=Fecal, N=Nasal

5.) Sample Analysis Requested: Analytical method requested (i.e. **8260B, 6010B/7470A**) and number of containers provided for each (i.e. *8260B* - **3**, *6010B/7470A* - **1**).

6.) Preservative Type: **HA** = Hydrochloric Acid, **NI** = Nitric Acid, **SH** = Sodium Hydroxide, **SA** = Sulfuric Acid, **AA** = Ascorbic Acid, **HX** = Hexane, **ST** = Sodium Thiosulfate, If no preservative is added = leave field blank

For Lab Receiving Use Only

Custody Seal Intact? (YES) NO

Cooler Temp: 12 C

WHITE = LABORATORY **YELLOW = FILE** **PINK = CLIENT**

 239180

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

GEL Laboratories, LLC
2040 Savage Rd.
Charleston, SC 29407
ph.: 843-556-8171
fax: 843-766-1178
e-mail: jhc@gel.com

Serial or COC #: 151009-01
Possible Hazards: Unknown
Sample Disposal: Lab Disposal

PROJECT & CLIENT INFORMATION

Project State: NY

PROJECT REFERENCE/NAME	PROJECT NO.	CONTRACT/Quote NO.
SEAD-12 RA	746762-02000	746762-02000-00

LAB PROJECT MANAGER	P.O. NUMBER	CONTRACT/Quote NO.
Jake Cook	746762-02000-00	746762-02000-00

CLIENT (SITE) PM	CLIENT PHONE	CLIENT FAX
Jeff Adams/Brendan Baranek-Olmstead	617-285-6821(BBO)	617-946-9777

CLIENT NAME	CLIENT EMAIL
Parsons	Brendan.Baranek-Olmstead@parsons.com

CLIENT ADDRESS: 100 High Street, Boston, MA 02110

Samplers Signature & Initials:

PAGE 1 OF 1

Final Report Type (Circle at least one): ASP2000 Category B
EDD 15 calendar days
TAT/ DATE DUE 14 calendar days Per QAP/Quote
EXPEDITED REPORT (circle one)
FAX EMAIL POST Other
TAT/ DATE DUE

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

SAMPLED ON DATE	SAMPLED ON TIME	SAMPLE IDENTIFICATION	LABORATORY SAMPLE ID	SAMPLE TYPE	FIELD FILTERED	MATRIX	Gross Alpha & Beta (USEPA 900.0M)	Gamma Spectroscopy (USEPA 901.1M)	Tritium (USEPA 906.0M)	REMARKS
10/15/2009	900	S12EXPR-J-4-04					1	1		1. Please run a straight sample analysis (without dilution) for every sample. 2. Please select one project sample for QA/QC analysis. 3. Please report only the requested analyses.
10/15/2009	905	S12EXSW-J-4-04					1	1		
10/15/2009	910	S12EXPR-I-4-01					1	1		
10/15/2009	915	S12EXSW-I-4-01					1	1		
10/15/2009	920	S12EXFL-I-4-01					1	1		
10/15/2009	925	S12EXPR-I-3-04					1	1		
10/15/2009	930	S12EXSW-I-3-04					1	1		

NUMBER OF CONTAINERS SUBMITTED

Preservative

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
[signature]	10/15/09	1800						
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
[signature]	101609	0900						

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	LABORATORY REMARKS:
			YES NO 8		

Original - Return to Laboratory with Sample(s)

239965 Page 1 of 1

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

GEL Laboratories, LLC
2040 Savage Rd.
Charleston, SC 29407
ph.: 843-556-8171
fax: 843-766-1178
e-mail: jhc@gel.com

Serial or COC #: 281009-01
Possible Hazards: Unknown
Sample Disposal: Lab Disposal

PROJECT & CLIENT INFORMATION

PROJECT REFERENCE/NAME: SEAD-12 RA	PROJECT NO.: 746762-02000	Project State: NY
LAB PROJECT MANAGER: Jake Cook	P.O. NUMBER: 746762-02000-00	CONTRACT/Quote NO.: 746762-02000-00
CLIENT (SITE) PM: Jeff Adams/Brendan Baranek-Olmstead	CLIENT PHONE: 617-285-6821(BBO)	CLIENT FAX: 617-946-9777
CLIENT NAME: Parsons	CLIENT EMAIL: Brendan.Baranek-Olmstead@parsons.com	
CLIENT ADDRESS: 100 High Street, Boston, MA 02110		
Samplers Signature & Initials:		

PAGE 1 OF 1

Final Report Type (Circle at least one): ASP2000 Category B
EDD 15 calendar days
TAT/ DATE DUE 14 calendar days Per QAP/Quote
EXPEDITED REPORT (circle one)
FAX EMAIL POST Other
TAT/ DATE DUE

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

SAMPLED ON DATE	SAMPLED ON TIME	SAMPLE IDENTIFICATION	LABORATORY SAMPLE ID	SAMPLE TYPE	FIELD FILTERED	MATRIX	REQUIRED ANALYSES: Gross Alpha & Beta (USEPA 900.0M)	REQUIRED ANALYSES: Gamma Spectroscopy (USEPA 901.1M)	REMARKS
10/27/2009	1500	S12EXFL-K-3-02		Soil			1	1	1. Please run a straight sample analysis (without dilution) for every sample. 2. Please select one project sample for QA/QC analysis. 3. Please report only the requested analyses.

Preservative

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
Jon McWhorter	10/28/09	1500						
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
R.M. Stelling	10/29/09	910						

LABORATORY USE ONLY

RECEIVED IN LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT YES / NO	CUSTODY SEAL NO.	LABORATORY REMARKS:
			NO 8		

FOUO36:12.20.00:2

Original - Return to Laboratory with Sample(s)

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APPENDIX F

SAMPLE DELIVERY GROUP CASE NARRATIVES

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COLUMBIA ANALYTICAL SERVICES, INC.

Client: Parsons Engineering Science
Project: SEAD-12
Sample Matrix: Soil

Service Request No.: R0904203
Date Received: 7/29/09

All analyses were performed consistent with the quality assurance program of Columbia Analytical Services, Inc. (CAS). This report contains analytical results for samples designated for Tier IV, ASP-B deliverables. When appropriate to the method, method blank results have been reported with each analytical test.

SAMPLE RECEIPT

Three soil samples were sampled on 7/29/09 and received at CAS on 7/29/09 at cooler temperatures of 2 - 12 °C. Otherwise, the samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 1 - 6 °C upon receipt at the laboratory.

VOLATILE ORGANICS

Twenty-six soil samples and one Trip blank were analyzed for the TCL list of Volatile Organics by SW-846 method 8260B. Values detected between the MDL and PQL have been flagged with a "J" as estimated.

All Tuning criteria for BFB were and within QC limits.

Internal Standard Areas were within QC limits for all samples.

All the initial and continuing calibration criteria were met for all analytes.

All surrogate standard recoveries were within acceptance limits for all samples.

The Blank Spike (LCS) recoveries were all acceptable.

The matrix spike/matrix spike duplicate analyses were performed on samples S12EXFL-I-3-01 and S12EXPR-B-2-01, as requested. Several matrix spike and matrix duplicate recoveries were outside QC limits of 70 – 130% and have been flagged with an "*". All these spikes were less than 70 % but greater than 60 %. The Acetone MS/MSD recoveries were greater than 300 % indicating the Acetone was being produced after the addition of the matrix spiking solution.

The Method Blanks associated with these samples were free of contamination except a low level "J" flagged value for Acetone in the lab blanks from 7/31/09, 8/03/09, and 8/05/09. Any associated Acetone detected in the samples within 5X these values has been flagged with a "B" accordingly.

No other analytical or QC problems were encountered.

SEMIVOLATILE ORGANICS

Twenty-six soil samples were analyzed for the TCL List Semivolatiles by method 8270C from SW-846. All results between the PQL and MDL are flagged with a "J", as estimated.

All Tuning criteria for DFTPP were within QC limits.

All the initial and continuing calibration criteria were met for all analytes.

All Internal Standard Areas were within QC limits.

All surrogate standard recoveries were within acceptance limits

All Blank Spike (LCS)/Blank Spike Duplicate (LCSD) recoveries were within QC limits except for a few that were slightly above limits. No data was affected. All RPD's were within QC limits.

The matrix spike/matrix spike duplicate analyses were performed on samples S12EXFL-I-3-01 and S12EXPR-B-2-01, as requested. All matrix spike and matrix duplicate recoveries were within QC limits.

The Laboratory Blanks associated with these samples were free of contamination.

No other QC or analytical problems were encountered.

PESTICIDE/PCB ANALYSIS

Twenty-six soil samples were analyzed for the TCL List of Pesticides by method 8081A from SW-846 and PCB's by method 8082 from SW-846.

All the initial and continuing calibration criteria were met for all analytes.

The surrogate standard recovery for DCB and TCMX were within QC acceptance limits.

All Blank Spike (LCS)/Blank Spike Duplicate (LCSD) recoveries were within QC limits. All RPD's were within QC limits.

The matrix spike/matrix spike duplicate analyses were performed on samples S12EXFL-I-3-01 and S12EXPR-B-2-01, as requested. All matrix spike and matrix duplicate recoveries were within QC limits.

The Laboratory Blanks associated with these analyses were free of contamination.

All samples were extracted and analyzed within required holding times.

No other analytical or QC problems were encountered.

INORGANIC ANALYSIS

Twenty-six soil samples were analyzed for the TAL list of Metals using SW-846 methods 6010C/7471 and Total Cyanide by SW-846 meth0d 9012A.

All Blank spike (LCS) recoveries were within limits. The CRDL was within QC limits for all metals.

The matrix spike and duplicate analyses was performed on samples S12EXFL-I-3-01 and S12EXPR-B-2-01, as requested. All Matrix Spike Recoveries were within QC limits of 75 – 125 % except Antimony (71 %) on sample S12EXFL-I-3-01 and Antimony ((65 %) and Potassium on sample S12EXPR-B-2-01. The recoveries and the appropriate data have been flagged with an "N". The recovery for Aluminum, Calcium, Iron, Manganese, and Magnesium could not be accurately determined due to the amount of analyte detected in the sample.

The RPD from the duplicate analysis for several metals from sample S12EXFL-I-3-01 were outside QC limits and the RPD and the appropriate data have been flagged with an "*". The RPD from sample S12EXPR-B-2-01 were all within QC limits

The results for several metals were flagged with an "E" indicating the serial dilution was greater than the 10 % QC limit which may indicate matrix interference in the sample. All % difference results from the serial dilutions were <20 %.

No other analytical or QC problems were encountered.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the details conditioned above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

COLUMBIA ANALYTICAL SERVICES, INC.

Client: Parsons Engineering Science
Project: SEAD-12
Sample Matrix: Soil

Service Request No.: R0904258
Date Received: 7/31/09

All analyses were performed consistent with the quality assurance program of Columbia Analytical Services, Inc. (CAS). This report contains analytical results for samples designated for Tier IV, ASP-B deliverables. When appropriate to the method, method blank results have been reported with each analytical test.

SAMPLE RECEIPT

These soil samples were collected on 7/30/09 and received at CAS on 7/31/09 at cooler temperatures of 4 - 5 °C. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 1 - 6 °C upon receipt at the laboratory.

VOLATILE ORGANICS

Fourteen soil samples and one Trip Blank were analyzed for the TCL list of Volatile Organics by SW-846 method 8260B. Values detected between the MDL and PQL have been flagged with a "J" as estimated. Two soil samples were analyzed for the TCLP list of Volatile Organics by SW-846 method 8260B following the Zero Headspace Extraction procedure by method 1311.

All Tuning criteria for BFB were and within QC limits.

Internal Standard Areas were within QC limits for all samples.

All the initial and continuing calibration criteria were met for all analytes.

All surrogate standard recoveries were within acceptance limits for all samples.

The Blank Spike (LCS) recoveries were all acceptable.

The matrix spike/matrix spike duplicate analyses were performed on sample S12EXPR-O-8-03, as requested. Several matrix spike and matrix duplicate recoveries were outside QC limits of 70 – 130% and have been flagged with an "*". The Acetone MS/MSD recoveries were greater than 300 % indicating the Acetone was being produced after the addition of the matrix spiking solution.

The Method Blanks associated with these samples were free of contamination except a low level "J" flagged value for Acetone in the lab blank from 8/06/09. Any associated Acetone detected in the samples within 5X these values has been flagged with a "B" accordingly.

No other analytical or QC problems were encountered.

SEMIVOLATILE ORGANICS

Fourteen soil samples were analyzed for the TCL List Semivolatiles by method 8270C from SW-846. All results between the PQL and MDL are flagged with a "J", as estimated. Two soil samples were analyzed for the TCLP list of Semivolatile Organics by SW-846 method 8270C following the TCLP Extraction procedure by method 1311.

All Tuning criteria for DFTPP were within QC limits.

All the initial and continuing calibration criteria were met for all analytes.

All Internal Standard Areas were within QC limits.

All surrogate standard recoveries were within acceptance limits

All Blank Spike (LCS)/Blank Spike Duplicate (LCSD) recoveries were within QC limits. All RPD's were within QC limits except Pyridine from the 8/17/09 LCS.

The matrix spike/matrix spike duplicate analyses were performed on sample S12EXPR-O-8-03, as requested. All matrix spike and matrix duplicate recoveries were within QC limits.

The Method Blanks associated with these samples were free of contamination except a low level "J" flagged value for Benzyl alcohol and Bis(2-ethylhexyl) Phthalate in the lab blank from 8/10/09. Any associated data detected in the samples within 5X these values has been flagged with a "B" accordingly.

No other QC or analytical problems were encountered.

PESTICIDE/PCB ANALYSIS

Sixteen soil samples were analyzed for the TCL List of Pesticides by method 8081A from SW-846 and PCB's by method 8082 from SW-846.

All the initial and continuing calibration criteria were met for all analytes.

The surrogate standard recovery for DCB and TCMX were within QC acceptance limits. Therecovereis on sample S12DS04 were diluted out and have been flagged with a "D".

All Blank Spike (LCS)/Blank Spike Duplicate (LCSD) recoveries were within QC limits. All RPD's were within QC limits.

The matrix spike/matrix spike duplicate analyses were performed on samples S12EXPR-O-8-03 and S12EXPR-B-2-01, as requested. All matrix spike and matrix duplicate recoveries were within QC limits.

The Laboratory Blanks associated with these analyses were free of contamination.

All samples were extracted and analyzed within required holding times.

No other analytical or QC problems were encountered.

INORGANIC ANALYSIS

Fourteen soil samples were analyzed for the TAL list of Metals using SW-846 methods 6010C/7471 and Total Cyanide by SW-846 meth0d 9012A. Two soil samples were analyzed for the TCLP list of Metals SW-846 methods 6010C/7470 following the TCLP Extraction procedure by method 1311. These two samples were also analyzed for Flash Point, Paint Filter Test and pH, and Reactivity. See the data sheets for the methods used.

NOTE: Due to LIMS limitations, when the Flash Point (Ignitability) results are >100 °C (samples do not flash), the samples are reported as "100 X".

All Blank spike (LCS) recoveries were within limits. The CRDL was within QC limits for all metals.

The matrix spike and duplicate analyses was performed on samples S12EXPR-O-8-03, as requested. All Matrix Spike Recoveries were within QC limits of 75 – 125 % except Antimony (51 %). The recovery and the appropriate data have been flagged with an "N". The recovery for Aluminum, Calcium, Iron, Manganese, and Magnesium could not be accurately determined due to the amount of analyte detected in the sample.

The RPD from the duplicate analysis were all within QC limits except Manganese. The RPD and the appropriate data have been flagged with an "*".

The serial dilution for Zinc was flagged with an "E" indicating the serial dilution was greater than the 10 % QC limit which may indicate matrix interference in the sample. All % difference results from the serial dilutions were <20 %.

No other analytical or QC problems were encountered.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the details conditioned above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

COLUMBIA ANALYTICAL SERVICES, INC.

Client: Parsons Engineering Science
Project: SEAD-12
Sample Matrix: Soil

Service Request No.: R0904367
Date Received: 8/05/09

All analyses were performed consistent with the quality assurance program of Columbia Analytical Services, Inc. (CAS). This report contains analytical results for samples designated for Tier IV, ASP-B deliverables. When appropriate to the method, method blank results have been reported with each analytical test.

SAMPLE RECEIPT

These soil samples were collected on 8/04/09 and 8/05/09 and received at CAS on 8/05/09 at cooler temperatures of 5 - 6 °C. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 1 - 6 °C upon receipt at the laboratory.

VOLATILE ORGANICS

Thirty soil samples and one Trip Blank were analyzed for the TCL list of Volatile Organics by SW-846 method 8260B. Values detected between the MDL and PQL have been flagged with a "J" as estimated.

All Tuning criteria for BFB were and within QC limits.

Internal Standard Areas were within QC limits for all samples.

All the initial and continuing calibration criteria were met for all analytes.

All surrogate standard recoveries were within acceptance limits for all samples.

The Blank Spike (LCS) recoveries were all acceptable.

The matrix spike/matrix spike duplicate analyses were performed on sample S12EXSW-D-2-01, as requested. All matrix spike and matrix duplicate recoveries and RPD were within QC limits.

The Method Blanks associated with these samples were free of contamination except a low level "J" flagged value for Acetone in the lab blank from 8/07/09 and Acetone and Methylene Chloride in the lab blank from 8/08/09. Any associated values detected in the samples within 5X these values have been flagged with a "B" accordingly.

No other analytical or QC problems were encountered.

SEMIVOLATILE ORGANICS

Thirty soil samples were analyzed for the TCL List Semivolatiles by method 8270C from SW-846. All results between the PQL and MDL are flagged with a "J", as estimated.

All Tuning criteria for DFTPP were within QC limits.

All the initial and continuing calibration criteria were met for all analytes.

All Internal Standard Areas were within QC limits.

All surrogate standard recoveries were within acceptance limits

All Blank Spike (LCS)/Blank Spike Duplicate (LCSD) recoveries were within QC limits. All RPD's were within QC limits.

The matrix spike/matrix spike duplicate analyses were performed on sample S12EXSW-D-2-01, as requested. All matrix spike and matrix duplicate recoveries were within QC limits. All RPD's were within QC limits except Hexachlorocyclopentadiene which has been flagged with an "*".

The Method Blanks associated with these samples were free of contamination except a low level "J" flagged value for Diethyl Phthalate in the lab blank from 8/07/09 and Benzyl Alcohol and Bis(2-ethylhexyl) Phthalate in the lab blank from 8/10/09. Any associated data detected in the samples within 5X these values has been flagged with a "B" accordingly.

No other QC or analytical problems were encountered.

PESTICIDE/PCB ANALYSIS

Thirty soil samples were analyzed for the TCL List of Pesticides by method 8081A from SW-846 and PCB's by method 8082 from SW-846.

All the initial and continuing calibration criteria were met for all analytes.

The surrogate standard recovery for DCB and TCMX were within QC acceptance limits.

All Blank Spike (LCS)/Blank Spike Duplicate (LCSD) recoveries were within QC limits. All RPD's were within QC limits.

The matrix spike/matrix spike duplicate analyses were performed on sample S12EXSW-D-2-01, as requested and on sample S12EXSW-K-3-01. All matrix spike and matrix duplicate recoveries were within QC limits.

The Laboratory Blanks associated with these analyses were free of contamination.

All samples were extracted and analyzed within required holding times.

No other analytical or QC problems were encountered.

INORGANIC ANALYSIS

Thirty soil samples were analyzed for the TAL list of Metals using SW-846 methods 6010C/7471 and Total Cyanide by SW-846 meth0d 9012A.

All Blank spike (LCS) recoveries were within limits. The CRDL was within QC limits for all metals.

The matrix spike and duplicate analyses was performed on samples S12EXSW-D-2-01, as requested. All Matrix Spike Recoveries were within QC limits of 75 – 125 % except Antimony (73 %), Potassium (73 %), and Zinc (191 %). The recovery and the appropriate data have been flagged with an "N". The recovery for Aluminum, Calcium, Iron, Manganese, and Magnesium could not be accurately determined due to the amount of analyte detected in the sample.

The RPD from the duplicate analysis were all within QC limits except Manganese. The RPD and the appropriate data have been flagged with an "*".

The serial dilution for Zinc was flagged with an "E" indicating the serial dilution was greater than the 10 % QC limit which may indicate matrix interference in the sample. All % difference results from the serial dilutions were <20 %.

No other analytical or QC problems were encountered.

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COLUMBIA ANALYTICAL SERVICES, INC.

Client:	Parsons Engineering Science	**Service Request No.:**	R0904422
Project:	SEAD-12	**Date Received:**	8/07/09
Sample Matrix:	Soil		

All analyses were performed consistent with the quality assurance program of Columbia Analytical Services, Inc. (CAS). This report contains analytical results for samples designated for Tier IV, ASP-B deliverables. When appropriate to the method, method blank results have been reported with each analytical test.

SAMPLE RECEIPT

These soil samples were collected on 8/06/09 and received at CAS on 8/07/09 at cooler temperatures of 4 - 5 °C. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 1 - 6 °C upon receipt at the laboratory.

VOLATILE ORGANICS

Eleven soil samples and one Trip Blank were analyzed for the TCL list of Volatile Organics by SW-846 method 8260B. Values detected between the MDL and PQL have been flagged with a "J" as estimated.

All Tuning criteria for BFB were and within QC limits.

Internal Standard Areas were within QC limits for all samples.

All the initial and continuing calibration criteria were met for all analytes.

All surrogate standard recoveries were within acceptance limits for all samples.

The Blank Spike (LCS) recoveries were all acceptable.

The matrix spike/matrix spike duplicate analyses were performed on sample S12STOCK-C1-11, as requested. Several matrix spike recoveries were outside QC limits and have been flagged with an "*". All the RPDs were within QC limits.

The Method Blanks associated with these samples were free of contamination.

No other analytical or QC problems were encountered.

SEMIVOLATILE ORGANICS

Eleven soil samples were analyzed for the TCL List Semivolatiles by method 8270C from SW-846. All results between the PQL and MDL are flagged with a "J", as estimated.

Sample S12STOCK-C1-10 was analyzed at a dilution due to matrix interference from non-target compounds.

All Tuning criteria for DFTPP were within QC limits.

All the initial and continuing calibration criteria were met for all analytes.

All Internal Standard Areas were within QC limits.

All surrogate standard recoveries were within acceptance limits

All Blank Spike (LCS)/Blank Spike Duplicate (LCSD) recoveries were within QC limits. All RPD's were within QC limits.

The matrix spike/matrix spike duplicate analyses were performed on sample S12STOCK-C1-11, as requested. All matrix spike and matrix duplicate recoveries were within QC limits. All RPD's were within QC limits except Hexachlorocyclopentadiene which has been flagged with an "*".

The Method Blanks associated with these samples were free of contamination except a low level "J" flagged value for Benzyl Alcohol in the lab blank from 8/12/09 and Benzyl Alcohol and Bis(2-ethylhexyl) Phthalate in the lab blank from 8/10/09. Any associated data detected in the samples within 5X these values has been flagged with a "B" accordingly.

No other QC or analytical problems were encountered.

PESTICIDE/PCB ANALYSIS

Eleven soil samples were analyzed for the TCL List of Pesticides by method 8081A from SW-846 and PCB's by method 8082 from SW-846.

All the initial and continuing calibration criteria were met for all analytes.

The surrogate standard recovery for DCB and TCMX were within QC acceptance limits.

All Blank Spike (LCS)/Blank Spike Duplicate (LCSD) recoveries were within QC limits. All RPD's were within QC limits.

The matrix spike/matrix spike duplicate analyses were performed on sample S12STOCK-C1-11, as requested. Several Pesticide matrix spike recoveries were outside QC limits and have been flagged with an "*".

The Laboratory Blanks associated with these analyses were free of contamination.

All samples were extracted and analyzed within required holding times.

INORGANIC ANALYSIS

Eleven soil samples were analyzed for the TAL list of Metals using SW-846 methods 6010C/7471 and Total Cyanide by SW-846 meth0d 9012A.

All Blank spike (LCS) recoveries were within limits. The CRDL was within QC limits for all metals.

The matrix spike and duplicate analyses was performed on samples S12STOCK-C1-11, as requested. All Matrix Spike Recoveries were within QC limits of 75 – 125 % except Antimony (73%), and Lead (72 %). The recovery and the appropriate data have been flagged with an "N". The recovery for Aluminum, Calcium, Iron, Manganese, and Magnesium could not be accurately determined due to the amount of analyte detected in the sample.

The RPD from the duplicate analysis were all within QC limits except Calcium and Lead. The RPD and the appropriate data have been flagged with an "*".

The serial dilution for Iron was flagged with an "E" indicating the serial dilution was greater than the 10 % QC limit which may indicate matrix interference in the sample.

No other analytical or QC problems were encountered.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the details conditioned above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	Parsons Engineering Science	**Service Request No.:**	R0904425
Project:	SEAD-12	**Date Received:**	8/07/09
Sample Matrix:	Soil		

All analyses were performed consistent with the quality assurance program of Columbia Analytical Services, Inc. (CAS). This report contains analytical results for samples designated for Tier IV, ASP-B deliverables. When appropriate to the method, method blank results have been reported with each analytical test.

SAMPLE RECEIPT

These soil samples were collected on 8/06/09 and received at CAS on 8/07/09 at cooler temperatures of 4 - 5 °C. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 1 - 6 °C upon receipt at the laboratory.

VOLATILE ORGANICS

Four soil samples were analyzed for the TCLP list of Volatile Organics by SW-846 method 8260B following the Zero Headspace Extraction procedure by method 1311.

All Tuning criteria for BFB were and within QC limits.

Internal Standard Areas were within QC limits for all samples.

All the initial and continuing calibration criteria were met for all analytes.

All surrogate standard recoveries were within acceptance limits for all samples.

The Blank Spike (LCS) recoveries were all acceptable.

The Method Blanks associated with these samples were free of contamination.

No other analytical or QC problems were encountered.

SEMIVOLATILE ORGANICS

Four soil samples were analyzed for the TCLP list of Semivolatile Organics by SW-846 method 8270C following the TCLP Extraction procedure by method 1311.

All Tuning criteria for DFTPP were within QC limits.

All the initial and continuing calibration criteria were met for all analytes.

All Internal Standard Areas were within QC limits.

All surrogate standard recoveries were within acceptance limits

All Blank Spike (LCS)/Blank Spike Duplicate (LCSD) recoveries were within QC limits. All RPD's were within QC limits.

The Method Blanks associated with these samples were free of contamination.

No other QC or analytical problems were encountered.

PESTICIDE/PCB ANALYSIS

Four soil samples were analyzed for the TCL List of Pesticides by method 8081A from SW-846 and PCB's by method 8082 from SW-846.

All the initial and continuing calibration criteria were met for all analytes except several analytes from the Closing CCV on the back column. These analytes were flagged with a # no data was affected since the front column was used for quantitation and all anlytes were within QC limits.

The surrogate standard recovery for DCB and TCMX were within QC acceptance limits for the Pesticide analyses. The DCB and TCMX recoveries for the PCB analyses were diluted out for all samples and have been flagged with a "D".

All Blank Spike (LCS)/Blank Spike Duplicate (LCSD) recoveries were within QC limits. All RPD's were within QC limits.

The matrix spike/matrix spike duplicate analyses was not requested but was performed on samples S12DS14. All matrix spike and matrix duplicate recoveries were diluted out and have been flagged with a "D".

The Laboratory Blanks associated with these analyses were free of contamination.

All samples were extracted and analyzed within required holding times.

No other analytical or QC problems were encountered.

INORGANIC ANALYSIS

Four soil samples were analyzed for the TCLP list of Metals SW-846 methods 6010C/7470 following the TCLP Extraction procedure by method 1311. These two samples were also analyzed for Flash Point, Paint Filter Test and pH, and Reactivity. See the data sheets for the methods used.

NOTE: Due to LIMS limitations, when the Flash Point (Ignitability) results are >100 °C (samples do not flash), the samples are reported as "100 X".

All Blank spike (LCS) recoveries were within limits. The CRDL was within QC limits for all metals.

No other analytical or QC problems were encountered.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the details conditioned above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

COLUMBIA ANALYTICAL SERVICES, INC.

Client: Parsons Engineering Science
Project: SEAD-12
Sample Matrix: Soil

Service Request No.: R0904596
Date Received: 8/14/09

All analyses were performed consistent with the quality assurance program of Columbia Analytical Services, Inc. (CAS). This report contains analytical results for samples designated for Tier IV, ASP-B deliverables. When appropriate to the method, method blank results have been reported with each analytical test.

SAMPLE RECEIPT

These soil samples were collected on 8/13/09 and received at CAS on 8/14/09 at a cooler temperature of 14 °C. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 1 - 6 °C upon receipt at the laboratory.

VOLATILE ORGANICS

One soil sample and one Trip Blank were analyzed for the TCL list of Volatile Organics by SW-846 method 8260B. Values detected between the MDL and PQL have been flagged with a "J" as estimated.

All Tuning criteria for BFB were and within QC limits.

Internal Standard Areas were within QC limits for all samples.

All the initial and continuing calibration criteria were met for all analytes.

All surrogate standard recoveries were within acceptance limits for all samples.

The Blank Spike (LCS) recoveries were all acceptable.

The matrix spike/matrix spike duplicate analyses was not requested, but was performed on sample S12EXFL-O-8-01. The matrix spike recoveries for Acetone were outside QC limits and have been flagged with an "*". All the RPDs were within QC limits except Acetone.

The Method Blanks associated with these samples were free of contamination except a "J" flagged value for Acetone. No data was affected.

No other analytical or QC problems were encountered.

SEMIVOLATILE ORGANICS

One soil sample was analyzed for the TCL List Semivolatiles by method 8270C from SW-846. All results between the PQL and MDL are flagged with a "J", as estimated.

All Tuning criteria for DFTPP were within QC limits.

All the initial and continuing calibration criteria were met for all analytes.

All Internal Standard Areas were within QC limits.

All surrogate standard recoveries were within acceptance limits

All Blank Spike (LCS)/Blank Spike Duplicate (LCSD) recoveries were within QC limits. All RPD's were within QC limits.

The Method Blanks associated with these samples were free of contamination.

No other QC or analytical problems were encountered.

PESTICIDE/PCB ANALYSIS

One soil sample was analyzed for the TCL List of Pesticides by method 8081A from SW-846 and PCB's by method 8082 from SW-846.

All the initial and continuing calibration criteria were met for all analytes.

The surrogate standard recovery for DCB and TCMX were within QC acceptance limits.

All Blank Spike (LCS)/Blank Spike Duplicate (LCSD) recoveries were within QC limits. All RPD's were within QC limits.

The Laboratory Blanks associated with these analyses were free of contamination.

All samples were extracted and analyzed within required holding times.

INORGANIC ANALYSIS

One soil sample was analyzed for the TAL list of Metals using SW-846 methods 6010C/7471 and Total Cyanide by SW-846 meth0d 9012A. Two soil samples were analyzed for the TCLP list of Metals by SW-846 methods 6010C/7470 following the TCLP Extraction procedure by method 1311.

All Blank spike (LCS) recoveries were within limits. The CRDL was within QC limits for all metals.

No other analytical or QC problems were encountered.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the details conditioned above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature. _____

COLUMBIA ANALYTICAL SERVICES, INC.

Client: Parsons Engineering Science
Project: SEAD-12
Sample Matrix: Soil

Service Request No.: R0905568
Date Received: 10/01/09

All analyses were performed consistent with the quality assurance program of Columbia Analytical Services, Inc. (CAS). This report contains analytical results for samples designated for Tier IV, ASP-B deliverables. When appropriate to the method, method blank results have been reported with each analytical test.

SAMPLE RECEIPT

Two soil samples were sampled on 9/30/09 and received at CAS on 10/01/09 at a cooler temperature of 6 °C in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 1 - 6 °C upon receipt at the laboratory. Priority rush results were provided by e-mail on 10/06/09

PCB ANALYSIS

Two soil samples were analyzed for the TCL List of PCB's by method 8082 from SW-846.

All the initial and continuing calibration criteria were met for all analytes.

The surrogate standard recovery for DCB and TCMX were within QC acceptance limits.

All Blank Spike (LCS)/Blank Spike Duplicate (LCSD) recoveries were within QC limits. All RPD's were within QC limits.

The matrix spike/matrix spike duplicate analyses were performed on samples S12EXSW-O-8-04. All matrix spike and matrix duplicate recoveries were within QC limits.

The Laboratory Blanks associated with these analyses were free of contamination.

All samples were extracted and analyzed within required holding times.

No other analytical or QC problems were encountered.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the details conditioned above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	Parsons Engineering Science	**Service Request No.:**	R0905678
Project:	SEAD-12 RA	**Date Received:**	10/06/09
Sample Matrix:	Soil		

All analyses were performed consistent with the quality assurance program of Columbia Analytical Services, Inc. (CAS). This report contains analytical results for samples designated for Tier IV, ASP-B deliverables. When appropriate to the method, method blank results have been reported with each analytical test.

SAMPLE RECEIPT

Four soil samples were taken on 10/05/09 and one water sample was taken on 10/06/09. All were received at CAS on 10/06/09 at a cooler temperature of 6 °C. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 1 - 6 °C upon receipt at the laboratory.

VOLATILE ORGANICS

Four soil samples and one water sample were analyzed for the TCL list of Volatile Organics by SW-846 method 8260B. Values detected between the MDL and PQL have been flagged with a "J" as estimated.

All Tuning criteria for BFB were and within QC limits.

Internal Standard Areas were within QC limits for all samples.

All the initial and continuing calibration criteria were met for all analytes.

All surrogate standard recoveries were within acceptance limits for all samples.

The Blank Spike (LCS) recoveries were all acceptable.

The matrix spike/matrix spike duplicate analyses were performed on sample S12EXSW-I-3-01, as requested. Several matrix spike and matrix duplicate recoveries were outside QC limits of 70 – 130% and have been flagged with an "*". The Acetone MS/MSD recoveries were greater than 100 % indicating the Acetone was being produced after the addition of the matrix spiking solution.

The Method Blanks associated with these samples were free of

No other analytical or QC problems were encountered.

SEMIVOLATILE ORGANICS

Four soil samples and one water sample were analyzed for the TCL List Semivolatiles by method 8270C from SW-846. All results between the PQL and MDL are flagged with a "J", as estimated.

All Tuning criteria for DFTPP were within QC limits.

All the initial and continuing calibration criteria were met for all analytes.

All Internal Standard Areas were within QC limits.

All surrogate standard recoveries were within acceptance limits

All Blank Spike (LCS)/Blank Spike Duplicate (LCSD) recoveries were within QC limits except for a few that were slightly above limits. No data was affected. All RPD's were within QC limits.

The matrix spike/matrix spike duplicate analyses were performed on sample S12EXSW-I-3-01, as requested. Many of the matrix spike recoveries were outside QC limits while most of the matrix spike duplicate recoveries were within QC limits. This may indicate a bad spiking procedure for the MS. All recoveries and RPD outside QC limits have been flagged with an "*".

The Laboratory Blanks associated with these samples were free of contamination.

No other QC or analytical problems were encountered.

PESTICIDE ANALYSIS

Four soil samples and one water sample were analyzed for the TCL List of Pesticides by method 8081A from SW-846. The samples were cleaned up for sulfur and sent through a florisil column prior to analysis. All samples still exhibited matrix interference problems.

All the initial and continuing calibration criteria were met for all analytes except for several analytes on the back column of the closing calibration check. Due to this, all samples were reanalyzed at a 1/10 dilution and all CCVs were within limits. Both dilutions were reported.

The surrogate standard recovery for DCB and TCMX were within QC acceptance limits for all samples.

All Blank Spike (LCS)/Blank Spike Duplicate (LCSD) recoveries were within QC limits. All RPD's were within QC limits.

The matrix spike/matrix spike duplicate analyses were performed due to sample amount limitations.

The Laboratory Blanks associated with these analyses were free of contamination.

All samples were extracted and analyzed within required holding times.

No other analytical or QC problems were encountered.

PCB ANALYSIS

Four soil samples and one water sample were analyzed for the TCL List of PCB's by method 8082 from SW-846. The samples were cleaned up for sulfur, treated with acid, and sent through a florisil column prior to analysis. All samples still exhibited matrix interference problems.

All the initial and continuing calibration criteria were met for all analytes.

The surrogate standard recoveries for DCB and TCMX were outside QC acceptance limits high for all soil samples. Since the recoveries were high and the samples were all non-detect, the data was accepted.

All Blank Spike (LCS)/Blank Spike Duplicate (LCSD) recoveries were within QC limits.

The matrix spike/matrix spike duplicate analyses were performed on sample S12EXSW-I-3-01 for the PCB analysis, as requested. All matrix spike and matrix duplicate recoveries were outside QC limits high and have been flagged with an "*". This was due to matrix interference in the sample.

The Laboratory Blanks associated with these analyses were free of contamination.

All samples were extracted and analyzed within required holding times.

No other analytical or QC problems were encountered.

INORGANIC ANALYSIS

Four soil samples and one water sample were analyzed for the TAL list of Metals using SW-846 methods 6010C/7471 and Total Cyanide by SW-846 meth0d 9012A.

All Blank spike (LCS) recoveries were within limits. The CRDL was within QC limits for all metals.

The matrix spike and duplicate analyses was performed on sample S12EXSW-I-3-01, as requested. All Matrix Spike Recoveries were within QC limits of 75 – 125 %. The recovery for Aluminum, Calcium, Iron, Manganese, and Magnesium could not be accurately determined due to the amount of analyte detected in the sample. The RPD from all within QC limits.

The ICP serial dilution and results for Lead were flagged with an "E" indicating the serial dilution was greater than the 10 % QC limit which may indicate matrix interference in the sample. All % difference results from the serial dilutions were <20 %.

No other analytical or QC problems were encountered.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the details conditioned above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature. Michael E. P...

COLUMBIA ANALYTICAL SERVICES, INC.

Client: Parsons Engineering Science
Project: SEAD-12 RA
Sample Matrix: Soil

Service Request No.: R0905778
Date Received: 10/08/09

All analyses were performed consistent with the quality assurance program of Columbia Analytical Services, Inc. (CAS). This report contains analytical results for samples designated for Tier IV, ASP-B deliverables. When appropriate to the method, method blank results have been reported with each analytical test.

SAMPLE RECEIPT

Five soil samples were taken on 10/07/09. All were received at CAS on 10/08/09 at cooler temperatures of 5 and 16 °C. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 1 - 6 °C upon receipt at the laboratory.

VOLATILE ORGANICS

Five soil samples and one water sample were analyzed for the TCL list of Volatile Organics by SW-846 method 8260B. Values detected between the MDL and PQL have been flagged with a "J" as estimated.

All Tuning criteria for BFB were and within QC limits.

Internal Standard Areas were within QC limits for all samples.

All the initial and continuing calibration criteria were met for all analytes.

All surrogate standard recoveries were within acceptance limits for all samples.

The Blank Spike (LCS) recoveries were all acceptable.

The Method Blanks associated with these samples were free of

No other analytical or QC problems were encountered.

SEMIVOLATILE ORGANICS

Five soil samples and one water sample were analyzed for the TCL List Semivolatiles by method 8270C from SW-846. All results between the PQL and MDL are flagged with a "J", as estimated.

All Tuning criteria for DFTPP were within QC limits.

All the initial and continuing calibration criteria were met for all analytes.

All Internal Standard Areas were within QC limits.

All surrogate standard recoveries were within acceptance limits.

All Blank Spike (LCS)/Blank Spike Duplicate (LCSD) recoveries were all within QC limits. All RPD's were within QC limits.

The matrix spike/matrix spike duplicate analyses were not requested but were performed on sample S12EXFL-J-2-02. All the matrix spike recoveries and RPD were within QC limits.

The Laboratory Blanks associated with these samples were free of contamination.

No other QC or analytical problems were encountered.

PESTICIDE ANALYSIS

Five soil samples and one water sample were analyzed for the TCL List of Pesticides by method 8081A from SW-846. The samples were cleaned up for sulfur and sent through a florisil column prior to analysis. All samples still exhibited matrix interference problems.

All the initial and continuing calibration criteria were met for all analytes.

The surrogate standard recovery for DCB and TCMX were within QC acceptance limits for all samples except TCMX on sample S12EXSW-I-2-03. The sample was re-extracted and re-analyzed and the TCMX recovery was within limits. Both results were reported.

All Blank Spike (LCS)/Blank Spike Duplicate (LCSD) recoveries were within QC limits. All RPD's were within QC limits.

The Laboratory Blanks associated with these analyses were free of contamination.

All samples were extracted and analyzed within required holding times.

No other analytical or QC problems were encountered.

PCB ANALYSIS

Five soil samples and one water sample were analyzed for the TCL List of PCB's by method 8082 from SW-846. The samples were cleaned up for sulfur, treated with acid, and sent through a florisil column prior to analysis. All samples still exhibited matrix interference problems.

All the initial and continuing calibration criteria were met for all analytes.

The surrogate standard recovery for DCB and TCMX were within QC acceptance limits for all samples except TCMX on sample S12EXSW-I-2-03. The sample was re-extracted and re-analyzed and the TCMX recovery was within limits. Both results were reported.

All Blank Spike (LCS)/Blank Spike Duplicate (LCSD) recoveries were within QC limits.

The Laboratory Blanks associated with these analyses were free of contamination.

All samples were extracted and analyzed within required holding times.

No other analytical or QC problems were encountered.

INORGANIC ANALYSIS

Five soil samples and one water sample were analyzed for the TAL list of Metals using SW-846 methods 6010C/7471 and Total Cyanide by SW-846 meth0d 9012A.

All Blank spike (LCS) recoveries were within limits. The CRDL was within QC limits for all metals.

The matrix spike and duplicate analyses was not requested but performed on sample S12EXFL-J-2-02 for Mercury. The Matrix Spike Recovery was within QC limits of 75 – 125 %. The RPD was within QC limits.

The ICP serial dilution for Lead (12 %) was flagged with an "E" indicating the serial dilution was greater than the 10 % QC limit which may indicate matrix interference in the sample. All % difference results from the serial dilutions were <20 %.

No other analytical or QC problems were encountered.

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COLUMBIA ANALYTICAL SERVICES, INC.

Client: Parsons Engineering Science
Project: SEAD-12 RA
Sample Matrix: Soil

Service Request No.: R0905818
Date Received: 10/09/09

All analyses were performed consistent with the quality assurance program of Columbia Analytical Services, Inc. (CAS). This report contains analytical results for samples designated for Tier IV, ASP-B deliverables. When appropriate to the method, method blank results have been reported with each analytical test.

SAMPLE RECEIPT

Five soil samples were taken on 10/09/09. All were received at CAS on 10/09/09 at a cooler temperature of 9 °C. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 1 - 6 °C upon receipt at the laboratory. "Rush" results were sent by e-mail on 10/16/09.

VOLATILE ORGANICS

Two soil samples were analyzed for the TCLP list of Volatile Organics by SW-846 method 8260B following the the Zero Headspace Extraction by method 1311.

All Tuning criteria for BFB were and within QC limits.

Internal Standard Areas were within QC limits for all samples.

All the initial and continuing calibration criteria were met for all analytes.

All surrogate standard recoveries were within acceptance limits for all samples.

The Blank Spike (LCS) recoveries were all acceptable.

The Method Blanks associated with these samples were free of

No other analytical or QC problems were encountered.

PCB ANALYSIS

Two soil samples were analyzed for the TCL List of PCB's by method 8082 from SW-846. The samples were cleaned up for sulfur, treated with acid, and sent through a florisil column prior to analysis. All samples still exhibited matrix interference problems.

All the initial and continuing calibration criteria were met for all analytes.

The surrogate standard recovery for DCB and TCMX were within QC acceptance limits for all samples.

All Blank Spike (LCS)/Blank Spike Duplicate (LCSD) recoveries were within QC limits.

The Laboratory Blanks associated with these analyses were free of contamination.

All samples were extracted and analyzed within required holding times.

No other analytical or QC problems were encountered.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the details conditioned above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Project Management Case Narrative

INTRODUCTION/ANALYTICAL RESULTS

This report summarizes the laboratory results for Parsons Infrastructure & Technology Group, Inc. for the Seneca Army Depot soil testing project.

CONDITION UPON RECEIPT/CHAIN OF CUSTODY

The cooler(s) were received intact. When the cooler(s) were received by the laboratory, the sample custodian(s) opened and inspected the shipment(s) for damage and custody inconsistencies. Chain of custodies documenting receipt are presented in the chain of custody section. Each sample was assigned a unique laboratory number and a custody file created. The samples were placed in a secured walk-in cooler and signed in and out by the chemists performing the tests. The sign out record, or lab chronicle, is presented in the chain of custody section.

There were no discrepancies noted upon sample receipt. The temperature of the iced cooler was -1.8°C.

METHODOLOGY

The following methods were used to perform the analyses:

PARAMETER	METHOD	REFERENCE
Volatile Organics	8260B	1
Semivolatile Organics	8270C	1
Pesticides	8081	1
PCBs	8082	1
ICP Metals	6010B	1
Mercury	7471A	1
Reactive Cyanide	SW7.3.3	1
Percent Moisture	SM 2540G	2

1) Test Methods for Evaluation Solid Wastes, SW-846 Third Edition, Final Update III, December 1996.

2) Standard Methods for the Examination of Water and Wastewater, $18^{th} - 20^{th}$ Editions.

QUALITY CONTROL

QA/QC results are summarized in the Laboratory Report Package and are also included in the raw data.

RAW DATA

The raw data is organized in the New York State Department of Environmental Conservation Analytical Services Protocol Category "B" order of data requirements.

Total # of pages in this report_____

GC/MS Volatile Organics Case Narrative

Client:	Parsons-MS
Project/Order:	Seneca Army Depot
Work Order #:	0910067
Methodology:	8260B

Analyzed/Reviewed by (Initials/Date): JK 10/21/09

Supervisor/Reviewed by (Initials/Date): JN 10-27-09

QA/QC Review (Initials/Date): [illegible] 10/28/09

File Name: G:\Narratives\MSVoa\0910067msvnar.doc

GC/MS Volatile Organics
The GC/MS Volatile instruments are equipped with a Restek Rtx-VMS, 60 m x 0.25 mm ID capillary column (MS01), Restek Rtx-502.2, 105 m x 0.53 mm ID capillary column (MS02), Restek Rtx-502.2, 60 m x 0.25 mm ID capillary column (MS03) and Restek Rtx-VMS, 60 m x 0.25mm ID capillary column (MS04), and a Vocarb 3000 adsorbent trap.

There were no excursions to note. All QC results were within established control limits.

Holding Times and Sample Preservation
All samples were prepared and analyzed within the method and/or QAPP specified holding time requirements.

Laboratory Control Sample
All spike recoveries met method and/or project specific QC criteria.

MS/MSD/MSB
All spike recovery and RPD data met method and/or project specific QC criteria.

Surrogate Standards
All surrogate standard recoveries met method and/or project specific QC criteria.

Internal Standards
All internal standard areas met method and/or project specific QC criteria.

Calibrations
All initial calibrations and calibration verifications met method and/or project specific QC criteria.

Preparation Blanks
All preparation blanks met method and/or project specific QC criteria.

GC/MS Semi-Volatile Organics Case Narrative

Client ID:	PARSONS-MS
Project/Order:	Seneca Army Depot
Work Order #:	0910067
Methodology:	8270C

Analyzed/Reviewed by (Initials/Date): JMA 10/26/09

Supervisor/Reviewed by (Initials/Date): JW 10-27-09

QA/QC Review (Initials/Date): [illegible] 10/28/09

File Name: G:\Narratives\MSSemi\0910067svnar.doc

GC/MS Semi-Volatile Organics
The GC/MS Semi-volatile instruments used a J & W DB-5MS, 30 m x 0.25 mm ID capillary column.

Holding Times and Sample Preservation
All samples were prepared and analyzed within the method and/or QAPP specified holding time requirements.

Laboratory Control Sample
All spike recoveries met method and/or project specific QC criteria.

MS/MSD/MSB
The following compound(s) did not meet matrix spike/matrix spike duplicate percent recovery and/or RPD criteria:

Sample Description	Sample #	Compound	% REC	RPD	Corrective Action
S12EXFL-I-4-01	0910067-005BMS	several	X	X	1

1 The extract was compromised during sample preparation. Spike recoveries for the associated matrix spike duplicate, laboratory control sample and matrix spike blank met acceptance criteria. No corrective action was taken.

Surrogate Standards
All surrogate standard recoveries met method and/or project specific QC criteria.

Internal Standards
All internal standard areas met method and/or project specific QC criteria.

Calibrations
All initial calibrations and calibration verifications met method and/or project specific QC criteria.

Preparation Blanks
All preparation blanks met method and/or project specific QC criteria.

GC Semi-Volatile Organics Case Narrative

Client:	Parsons-MS
Project/Order:	Seneca Army Depot
Work Order. #:	0910067
Methodology:	8081

Analyzed/Reviewed by (Initials/Date): 11-13-09

Supervisor/Reviewed by (Initials/Date): 11-13-09

QA/QC Review (Initials/Date): 11/13/09

File Name: G:\Narratives\GCSemi\0911067Pest.doc

Pesticides

Holding Times
All samples were prepared and analyzed within the method and/or QAPP specified holding time requirements.

Laboratory Control Samples
All spike recoveries met method and/or project specific QC criteria.

MS/MSD/MSB
The following compound(s) did not meet matrix spike/matrix spike duplicate percent recovery and/or RPD criteria:

Sample Description	Sample #	Compound	% REC	RPD	Corrective Action
S12EXFL-I-4-01MS	0910067-005CMS	multiple	X	X	1,3
S12EXFL-I-4-01MSD	0910067-005CMSD	beta-BHC	X	X	2,3

1. Inspection of the chromatograms indicates that the MS has an interference pattern not present in the parent sample and the MSD. It is suspected that contamination was introduced during the sample preparation procedures for the MS.

2. The recovery marginally exceeded the upper control limit on the confirmation column and met acceptance criteria on the primary column. The analyte was not detected in the parent sample.

3. The associated MSB met acceptance criteria. No corrective action was taken.

Surrogates
All surrogate recoveries met method and/or project specific criteria.

Calibrations
All calibrations and calibration verifications met method and/or project specific QC criteria.

GC Semivolatile Organics Case Narrative - Page 2

Client:	Parsons-MS
Project/Order:	Seneca Army Depot
Work Order. #:	0910067
Methodology:	8081

Preparation Blanks
All preparation blanks met method and/or project specific QC criteria.

Miscellaneous
The Endrin breakdown on the RTX-CLP column failed marginally at 15.4%. No Endrin or any of its breakdown products were detected in any samples and the breakdown met quality control criteria on the RTX-CLP2 column. Therefore, no corrective action was taken.

GC Semi-Volatile Organics Case Narrative

Client:	Parsons-MS
Project/Order:	Seneca Army Depot
Work Order. #:	0910067
Methodology:	8082

Analyzed/Reviewed by (Initials/Date): SSa 11/11/09

Supervisor/Reviewed by (Initials/Date): 11-13-09

QA/QC Review (Initials/Date): 11/12/09

File Name: G:\Narratives\GCSemi\0910067PCB.doc

PCBs

Holding Times
All samples were prepared and analyzed within the method and/or QAPP specified holding time requirements.

Laboratory Control Samples
All spike recoveries met method and/or project specific QC criteria.

MS/MSD/MSB
The following compound(s) did not meet matrix spike/matrix spike duplicate percent recovery and/or RPD criteria:

Sample Description	Sample #	Compound	% REC	RPD	Corrective Action
S12EXFL-I-4-01MS	0910067-005CMS	AR1016	X		1
S12EXFL-I-4-01MSD	0910067-005CMSD	AR1016	X		1

1. The recovery in the associated MSB met acceptance criteria. Matrix effects are suspected. No corrective action was taken.

Surrogates
All surrogate recoveries met method and/or project specific criteria.

Calibrations
All calibrations and calibration verifications met method and/or project specific QC criteria.

Preparation Blanks
All preparation blanks met method and/or project specific QC criteria.

Trace Metals Case Narrative

Client ID:	Parsons
Project/Order:	Seneca Army Depot
Work Order #:	0910067
Methodology:	ICP metals – SW6010B

Analyzed/Reviewed by (Date/Initials): 10-26-09 mt

Supervisor/Reviewed by (Date/Initials): 10-26-09 mt

QA/QC Review (Date/Initials): 11/4/09

Trace Metals

Holding Times
All samples were prepared and analyzed within the method and/or QAPP specified holding time requirements.

Laboratory Control Sample
All spike recoveries met method and/or project specific QC criteria.

MS/MSD AND MS/MSD RPD
The following analytes did not meet matrix spike/matrix spike duplicate percent recovery criteria:

Sample Description	Sample #	Analyte	% REC	RPD	Corrective Action
S12EXFL-I-4-01	0910067-005D	Al, Ca, Fe, Mg, Mn	X		1
		Sb	X		2

1. The concentration of the analyte in the sample was four times greater than the concentration of the spike added. A post-digestion spike was performed. No further corrective action was taken.

2. A post digestion spike was performed. No further corrective action was taken.

ICP Serial Dilution
The following analyte did not meet ICP serial dilution recovery criteria:

Sample Description	Sample #	Analyte	Corrective Action
S12EXFL-I-4-01	0910067-005D	K	1

1. A post digestion spike was performed. No further corrective action was taken.

Calibrations
All calibrations and calibration verifications met method and/or project specific QC criteria.

Preparation Blanks
All preparation blanks met method and/or project specific QC criteria.

Trace Metals Case Narrative

Client ID:	Parsons
Project/Order:	Seneca Army Depot
Work Orders #:	0910067
Methodology:	Mercury – SW7471A

Analyzed/Reviewed by (Date/Initials): 10-22-09 mrt

Supervisor/Reviewed by (Date/Initials): 10-22-09 mrt

QA/QC Review (Date/Initials): 10/26/09 YK

Trace Metals

There were no excursions to note. All QC results were within established control limits.

Wet Chemistry Case Narrative

Client ID:	Parsons
Project/Order:	Seneca Army Depot
Work Order #:	0910067
Methodology:	Total cyanide – SW9012A

Analyzed/Reviewed by (Date/Initials): 10-21-09 mt

Supervisor/Reviewed by (Date/Initials): 10-21-09 mt

QA/QC Review (Date/Initials): 10/26/09 [illegible]

Wet Chemistry

There were no excursions to note. All QC results were within established control limits.

APPENDIX G

DATA VALIDATION MEMO

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APPENDIX G: DATA VALIDATION

This appendix presents an overall summary of data usability for the SEAD-12 soil confirmatory samples collected as part of the Remedial Action completed between July and October 2009. The data reviewed included nine sample delivery groups (SDG) submitted by Columbia Analytical Services (CAS) located in Rochester, NY; and one SDG submitted by Life Science Laboratories (LSL) located in East Syracuse, NY. These SDGs are R0904203, R0904258, R0904367, R0904422, R0904596, R0905568, R0905678, R0905778, R0905818, and 0910067. **Table G-1** provides a summary of the data that were validated. In summary, 92 confirmatory soil samples from SEAD-12 were submitted for analysis of target compound list (TCL) volatile organic compounds (VOC), TCL semivolatile organic compounds (SVOC), Pesticides, Polychlorinated biphenyl (PCBs), Inorganics including cyanide and mercury; 4 confirmatory samples from SEAD-12 were submitted for analysis of PCBs; and one excavation water sample from SEAD-12 were submitted for analysis of TCL VOC, TCL SVOC, Pesticides, PCBs, Inorganics including cyanide and mercury. The analyses were conducted in accordance with VOCs by United States Environmental Protection Agency (USEPA) Method SW846 8260B, SVOCs by USEPA Method SW846 8270C, pesticides by USEPA Method SW846 8081A, PCBs by USEPA Method SW846 8082, and metals by USEPA Method SW846 6010B/7471A.

In addition to the confirmatory soil samples described above, disposal material waste characterization and radiological samples were collected as part of the SEAD-12 remedial action program. Validation of the results for these samples was not required for the project, and, therefore these sample results are not presented or discussed in this appendix.

Data validation was performed by Parsons' chemists and completed under the guidelines set forth in the Region 2 Resource Conservation and Recovery Act (RCRA) and Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Data Validation Standard Operating Procedures (SOPs) with consideration for the site-specific quality assurance requirements presented in the Work Plan for Removal Action at the Waste Burial Radiological Sites (SEAD-12) (Parsons, 2009) and the general quality assurance requirements presented in the Generic Site-Wide Sampling and Analysis Plan (SAP) for the Seneca Army Depot Activity (Parsons, 2006). The Region 2 SOPs used for data validation include Evaluation of Metals Data for the Contract Laboratory Program (CLP; SOP HW-2), Validating Volatile Organic Compounds by SW-846 Method 8260B (HW-24), Validating Semivolatile Organic Compounds by SW-846 Method 8270 (HW-22), and CLP Organics Data Review and Preliminary Review, and Training Course for CLP Organic Data Validation. If guidance could not be found in the above SOPs, the project SAP, or the Seneca Site-Wide SAP, requirements set forth in the USEPA CLP, the New York State Department of Environmental Conservation (NYSDEC) Contract Laboratory Program Analytical Services Protocol (ASP), USEPA (2004) Contract Laboratory Program National Functional Guidelines for Inorganic Data Review; and USEPA (1999) Contract Laboratory Program National Functional Guidelines for Organic Data Review were considered during data validation. The data evaluation included performance of a

completeness audit and a review of the following parameters, where applicable: holding times, sample preservations, percentage of solids, quality control (QC) results of calibration, equipment/rinsate blanks, method blanks, matrix spike/matrix spike duplicate (MS/MSD) analyses, laboratory control sample (LCS) performances, laboratory and field duplicates, instrument performance, reporting limits, Inductively Coupled Plasma (ICP) serial dilution, interference check sample results, and ICP linear range. In performing the data validation, the raw data were spot-checked in accordance with the Region 2 SOPs to evaluate whether there were any transcription errors.

Data qualifiers were added to the data based on the data validation and Attachment G-1 presents definition of data qualifiers.

1. OVERALL SUMMARY OF DATA USABILITY

The data reviewed were determined to be usable based on the data validation.

2. ACCURACY

Accuracy was evaluated by reviewing the percent recovery (%R) of the MS/MSD, LCS, surrogate spikes, and internal standards. In addition, blank sample (method blank, trip blank, and equipment rinsate blank) results were reviewed to evaluate any potential contamination.

2.1 MS/MSD Results

MS/MSD sample analyses were conducted for 14 project samples and are summarized in **Table G-2**. The frequency of MS/MSD sample analyses conducted is consistent with the generic requirement for Seneca project presented in the Generic Site-Wide Sampling and Analysis Plan (Parsons, 2006). For VOC analysis, the samples were spiked with five analytes (1,1-dichloroethene, trichloroethene, benzene, toluene, and chlorobenzene). For SVOC analysis, the samples were spiked with six analytes (2,4,6-tribromophenol, 2-fluorobiphenyl, 2-fluorophenol, nitrobenzene-d5, phenol-d6, and p-terphenyl-d14). For pesticide and PCB analyses, the samples were spiked with decachlorobiphenyl and tetrachloro-m-xylene. For metal analyses, the samples were spiked with all target compound analytes. All those metal results in the SDGs without spike analysis conducted were qualified according to the Region 2 SOP (i.e., all detects were qualified J).

All MS/MSD recoveries were within the laboratory established QC limits or/and the project limits of 75%-125% for all samples except those summarized in **Table G-3**.

In general, MS/MSD results for VOC, SVOC, pesticides, PCBs, and metal analyses indicated some matrix impact. No action was taken based solely on the MS/MSD results for VOC, SVOC, pesticide, and PCBs analyses. Qualifiers were added to the affected metal results based on the spike results in accordance with the USEPA Region 2 SOPs and the details are presented in **Table G-3**.

2.2 LCS Results

LCS results for VOC and SVOC analyses were all within the laboratory established limits and the project advisory limits of 70~130% with the exception of the LCS results for acetone and methyl ethyl ketone in one SDG were above 120%, as summarized in **Table G-4**. LCS results for pesticide analysis were all within the laboratory established limits. LCS results for PCB analysis were all within the laboratory established limits and the project advisory limits of 70~130% with relative percent difference (RPD) < 25%. LCS results for metal analysis were all within the project limits of 80%~120% with the exception of the LCS results for antimony in seven SDGs and iron in one SDG were above 120%, as summarized in **Table G-4**. No action was taken on the acetone, methyl ethyl ketone, antimony, and iron results since the recoveries were within the lab limits.

2.3 Surrogate Recovery Results

Surrogate spike analyses were conducted for VOC, SVOC, pesticide, and PCB samples. **Table G-5** presents a summary of surrogate recovery noncompliance. All the other surrogate spike recoveries were within the laboratory established limits and the project limits of 70~130% for VOC analysis, within the laboratory established limits for SVOC analysis, and within 30-150% for pesticide and PCB analyses.

2.4 Internal Standard Results

Internal standards were added to VOC and SVOC samples to determine instrument stability. All the internal standard recoveries were within the project QC limits (i.e., the internal standard area responses were within -50% ~ +100% of the internal standard area associated with CCV and all retention times were within 30 seconds of the standard associated with CCV.)

2.5 Blank Sample Results

Method blank analysis was conducted for each SDG per analytical method. No sampling equipment/instrument was reused in collecting VOC, SVOC, pesticide, PCB, or metal samples during the confirmatory sample collection; therefore, no equipment rinsate blank was collected for the project.

Table G-6 presents a summary of blank noncompliance results. In summary, no pesticide or PCB contamination was detected in any pesticide or PCB method blanks. For VOC analysis, acetone was detected in the method blanks in SDGs R0904203, R0904258, R0904367, and R0904422; acetone was detected in the trip blank in SDGs R0904258; methylene chloride was detected in a method blank in SDGs R0904367. For SVOC analysis, Benzyl Alcohol, Bis(2-Ethylhexyl) Phthalate, and Diethyl Phthalate were detected in the method blanks in SDGs R0904258, R0904367, R0904422, and R0905778. The affected sample results were qualified in accordance with the USEPA Region 2 SOPs.

Various metals were detected in the initial calibration blanks (ICBs), continuing calibration blanks (CCBs), and preparation blanks in most SDGs, as shown in **Table G-6**. Most of the detected concentrations were all below the respective reporting limits. The sample results associated with the noncompliance blank results were qualified in accordance with the USEPA Region 2 SOPs.

3. PRECISION

Precision is determined by evaluating the RPD of the parent/field duplicate (FD) and MS/MSD (VOC, SVOC, pesticide, and PCB analyses) or parent/laboratory duplicate (metal analysis). The generic precision limits for the Seneca project are presented in the Generic Site-Wide Sampling and Analysis Plan for the Seneca Army Depot Activity (Parsons, 2006). Professional judgment will be used based on the USEPA Region SOP for metal data validation (i.e., HW-2) when sample results are close to reporting limits. As an example, for sample results within five times of reporting limits, the difference was compared with two times of the reporting limits.

As shown in **Table G-7**, a total of six field duplicate pairs were available for the confirmatory soil samples collected from SEAD-12 for VOC, SVOC, pesticide, PCB, and metal analyses. The field duplicate collection frequency is compliant with the requirement specified in the Generic Site-Wide SAP. All field duplicate results comply with the project limits presented in the Generic Site-Wide SAP or the criteria discussed above with several exceptions as presented in **Table G-8**.

Laboratory duplicate analysis was conducted for metal analysis for all SDGs but R0904596 and 0910067. For SDG R0904596, laboratory duplicate analysis was not performed due to there being a single sample in the SDG. For SDG 0910067, laboratory duplicate analysis was not performed. All metal results in those SDGs without laboratory duplicate analysis performed were qualified (i.e., nondetects were qualified UJ and detects were qualified J). All laboratory duplicate results comply with the project limits presented in the Generic Site-Wide SAP or the criteria discussed above with several exceptions as presented in **Table G-8**.

All RPD results for MS/MSD samples were within the laboratory established limits and the project limit of 25%.

4. REPRESENTATIVENESS AND OTHER TECHNICAL ISSUES

Representativeness expresses the degree to which sample data accurately and precisely represents actual site conditions. Representativeness has been evaluated by:

- Sample Package Completeness and Deliverables
- Sample Preservation and Technical Holding Time
- Laboratory Transcription Error
- Other Quality Assurance/Quality Control (QA/QC) Results

4.1 Sample Package Completeness and Deliverables

The nine data packages submitted by CAS Rochester, NY are sufficient for the data validation conducted for this project. The data package submitted by LSL East Syracuse, NY is sufficient for the data validation conducted for this project.

4.2 Sample Preservation and Technical Holding Time

All samples were preserved according to the preservation requirement presented in the Generic Site-Wide SAP and analyzed within the holding time.

All coolers were received with temperature below 10ºC, within the limits specified by the USEPA Region II SOP HW-24 (i.e., 10ºC) and the USEPA (1999) Contract Laboratory Program National Functional Guidelines for Organic Data Review (i.e., 4±2 ºC) except SDGs R0904203 and R0904596. SDG R0904203 had one cooler (of five coolers) with a received temperature of 12ºC. SDG R0904596 cooler was received with a temperature of 14ºC. SDG R0905778 had one cooler (of three coolers) with a received temperature of 16ºC, however this cooler did not contain samples for chemical analysis. SDG's with elevated temperatures were qualify all results as J due to the elevated temperature in the sample cooler, since samples can not be associated with specific coolers.

4.3 Laboratory Transcription Error

The raw data were spot-checked in accordance with the Region 2 SOP and no transcription error was observed.

4.4 Other QA/QC Results

4.4.1 Instrument Performance

GC/MS instrument performance check was performed for VOC, SVOC, pesticide, and PCB analyses. GC/MS performance met the analytical method requirements for all SDGs. Chromatography baselines were generally stable for organic analyses.

4.4.2 TCL/TIC Results

For VOC and SVOC TCLs detected in the samples, a comparison of the sample relative ion intensities with the standard relative ion intensities for the respective reference TCL was conducted. All relative retention times (RRTs) for the identified analytes were within 0.06RRT units of the standard RRT from continuing calibration verification. The relative ion intensities generally agree within 20% of the standard relative ion intensities with several exceptions. No action was taken based on the review of the mass spectrums.

For pesticide and PCB TCLs detected in the samples, a comparison of the retention times (RTs) of

identified compounds with established RT windows for both columns. The percent difference (%D) between the two columns for positive sample results is to be less than or equal to 25%. All SDG's met these requirements except five SDGs presented in **Table G-9**.

Tentatively identified compounds (TICs) were not reported for VOC or SVOC analyses for SEAD-12 confirmatory samples.

4.4.3 Reporting Limits

For VOC, SVOC, pesticide, and PCB analyses, the lowest calibration standard was used as the reporting limit and the reporting limits are the same as the CRQL specified by the CLP OLM04.3. For inorganic analyses, method detection limit was used as the basis for reporting limit and all reporting limits were below the CRQLs.

4.4.4 Calibration

Initial calibration and continuing calibration verification were conducted for VOC, SVOC, pesticide, PCB, and metal analyses. Calibration noncompliances were observed for most SDGs and the detailed information is presented in **Table G-10**. The affected data were validated based on the USEPA Region 2 SOPs.

CRQL standard check was conducted for metal analysis and the results were within the project limits of 70% - 130% with the exceptions listed in **Table G-11**.

4.4.5 ICP Serial Dilution

All ICP serial dilution results were within the limits specified in the USEPA Region 2 SOPs with the exceptions summarized in **Table G-12**. The results for the noncompliance metals were qualified in accordance with the Region 2 SOP HW-2.

4.4.6 ICP Linear Range

All inorganic concentrations used as sample results were within the ICP linear ranges.

4.4.7 ICP Interference Check

All ICP interference check sample results were with the QC limits (i.e., 80-120%).

DEFINITIONS OF DATA QUALIFIERS – ORGANICS

U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

DEFINITIONS OF DATA QUALIFIERS – INORGANICS

J	The associated value is an estimated quantity.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.
UJ	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.
R	The data was unusable. (Note: Analyte may or may not be present.).

Table G-1
Summary of Validated Data
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SDG	Samp ID	Matrix	Analyses	Cooler Temperature
Columbia Analytical Services (CAS)				
R0904203	S12EXFL-B-2-01	Soil	TCL VOC, TCL SVOC, Pesticides, PCBs, Inorganics including cyanide and mercury	2°C, 7°C, 6°C, 5°C and 12°C
	S12EXFL-C-2-01	Soil		
	S12EXFL-E-1-01	Soil		
	S12EXFL-I-3-01	Soil		
	S12EXFL-I-3-02	Soil		
	S12EXFL-J-4-01	Soil		
	S12EXFL-K-3-01	Soil		
	S12EXPR-A-2-01	Soil		
	S12EXPR-B-1-01	Soil		
	S12EXPR-B-2-01	Soil		
	S12EXPR-B-2-02	Soil		
	S12EXPR-C-1-01	Soil		
	S12EXPR-C-2-01	Soil		
	S12EXPR-D-1-01	Soil		
	S12EXPR-D-2-01	Soil		
	S12EXPR-E-1-01	Soil		
	S12EXPR-I-2-01	Soil		
	S12EXPR-I-3-01	Soil		
	S12EXPR-J-2-01	Soil		
	S12EXPR-J-3-01	Soil		
	S12EXPR-J-4-01	Soil		
	S12EXPR-J-4-02	Soil		
	S12EXPR-J-4-03	Soil		
	S12EXPR-J-5-01	Soil		
	S12EXPR-K-3-01	Soil		
	S12EXPR-K-4-01	Soil		
R0904258	S12EXFL-N-9-01	Soil	TCL VOC, TCL SVOC, Pesticides, PCBs, Inorganics including cyanide and mercury	5°C and 4°C
	S12EXFL-N-9-02	Soil		
	S12EXFL-O-10-01	Soil		
	S12EXPR-N-10-01	Soil		
	S12EXPR-N-10-02	Soil		
	S12EXPR-N-9-01	Soil		
	S12EXPR-O-10-01	Soil		
	S12EXPR-O-7-01	Soil		
	S12EXPR-O-8-01	Soil		
	S12EXPR-O-8-02	Soil		
	S12EXPR-O-8-03	Soil		
	S12EXPR-O-8-04	Soil		
	S12EXPR-O-9-01	Soil		
	S12-STOCK-C1-01	Soil		
	TB073009-1	Water	TCL VOC	
	S12DS04	Soil	TCLP VOC, TCLP SVOC, Pesticides, PCBs, TCLP Metals, Reactivity, pH, Flashpoint	
	S12DS05	Soil		

Table G-1
Summary of Validated Data
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SDG	Samp ID	Matrix	Analyses	Cooler Temperature
R0904367	S12EXPR-J-3-02	Soil	TCL VOC, TCL SVOC, Pesticides, PCBs, Inorganics including cyanide and mercury	6°C, 5°C, 5°C, 5°C, and 6°C
	S12EXSW-A-2-01	Soil		
	S12EXSW-B-1-01	Soil		
	S12EXSW-B-2-01	Soil		
	S12EXSW-C-1-01	Soil		
	S12EXSW-C-2-01	Soil		
	S12EXSW-D-1-01	Soil		
	S12EXSW-D-2-01	Soil		
	S12EXSW-D-2-02	Soil		
	S12EXSW-E-1-01	Soil		
	S12EXSW-I-2-01	Soil		
	S12EXSW-I-3-01	Soil		
	S12EXSW-J-2-01	Soil		
	S12EXSW-J-3-01	Soil		
	S12EXSW-J-3-02	Soil		
	S12EXSW-J-4-01	Soil		
	S12EXSW-J-4-02	Soil		
	S12EXSW-J-4-03	Soil		
	S12EXSW-J-5-01	Soil		
	S12EXSW-K-3-01	Soil		
	S12EXSW-K-4-01	Soil		
	S12EXSW-N-10-01	Soil		
	S12EXSW-N-10-02	Soil		
	S12EXSW-N-9-01	Soil		
	S12EXSW-O-10-01	Soil		
	S12EXSW-O-7-01	Soil		
	S12EXSW-O-8-01	Soil		
	S12EXSW-O-8-02	Soil		
	S12EXSW-O-8-03	Soil		
	S12EXSW-O-9-01	Soil		
	TB080509-1	Water	TCL VOC	
R0904422	S12STOCK-C1-02	Soil	TCL VOC, TCL SVOC, Pesticides, PCBs, Inorganics including cyanide and mercury	4°C and 5°C
	S12STOCK-C1-03	Soil		
	S12STOCK-C1-04	Soil		
	S12STOCK-C1-05	Soil		
	S12STOCK-C1-06	Soil		
	S12STOCK-C1-07	Soil		
	S12STOCK-C1-08	Soil		
	S12STOCK-C1-09	Soil		
	S12STOCK-C1-10	Soil		
	S12STOCK-C1-11	Soil		
	S12STOCK-C1-12	Soil		
	TB080609-1	Water	TCL VOC	
R0904425	S12DS08	Soil	TCLP VOC, TCLP SVOC, Pesticides, PCBs, TCLP Metals, Reactivity, pH, Flashpoint	
	S12DS11	Soil		
	S12DS14	Soil		
	S12DS17	Soil		

Table G-1
Summary of Validated Data
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SDG	Samp ID	Matrix	Analyses	Cooler Temperature
R0904596	S12EXFL-O-8-01	Soil	TCL VOC, TCL SVOC, Pesticides, PCBs, Inorganics including cyanide and mercury	14°C
	TB081309-1	Water	TCL VOC	
R0905568	S12EXPR-O-8-14	Soil	PCBs	6°C
	S12EXSW-O-8-14	Soil		
R0905678	S12EXFL-I-3-01RE	Soil	TCL VOC, TCL SVOC, Pesticides, PCBs, Inorganics including cyanide and mercury	8°C and 6°C
	S12EXSW-I-3-01RE	Soil		
	S12EXSW-I-3-02	Soil		
	S12EXSW-I-3-03	Soil		
	WW1006-01	Water		
R0905778	S12EXFL-J-2-02	Soil	TCL VOC, TCL SVOC, Pesticides, PCBs, Inorganics including cyanide and mercury	5°C, 16°C, and 2°C
	S12EXPR-I-2-02	Soil		
	S12EXSW-I-2-02	Soil		
	S12EXSW-I-2-03	Soil		
	S12EXSW-J-2-02	Soil		
R0905818	S12EXPR-O-8-05	Soil	PCBs	9°C
	S12EXSW-O-8-05	Soil		
	S12EXSW-I-2-02RE	Soil	TCLP VOC	
	S12EXSW-I-2-03RE	Soil		
	S12EXSW-J-2-02RE	Soil		
Life Science Laboratories (LSL)				
910067	S12EXFL-I-4-01	Soil	TCL VOC, TCL SVOC, Pesticides, PCBs, Inorganics including cyanide and mercury	1.8°C
	S12EXFL-I-4-01MS	Soil		
	S12EXFL-I-4-01MSD	Soil		
	S12EXFL-I-4-02	Soil		
	S12EXPR-I-3-04	Soil		
	S12EXPR-I-4-01	Soil		
	S12EXPR-J-4-04	Soil		
	S12EXSW-I-3-04	Soil		
	S12EXSW-I-4-01	Soil		
	S12EXSW-J-4-04	Soil		

Table G-2
Samples Used for Spike Analysis
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SDG	Spiked Sample(s)	Analyzed For
R0904203	S12EXFL-I-3-01 and S12EXPR-B-2-01	VOC, SVOC, Pesticides, PCBs, Metals, Hg, and Cn
R0904258	S12EXPR-O-8-03	VOC, SVOC, Pesticides, PCBs, Metals, Hg, and Cn
R0904258	S12DS04	PCBs
R0904367	S12EXSW-D-2-01	VOC, SVOC, Pesticides, PCBs, Metals, Hg, and Cn
R0904367	S12EXSW-K-3-01	Pesticides
R0904367	S12EXSW-D-2-02	PCBs
R0904422	S12STOCK-C1-11	VOC, SVOC, Pesticides, PCBs, Metals, Hg, and Cn
R0904596	S12EXFL-O-8-01	VOC
R0905568	S12EXSW-O-8-04	PCBs
R0905678	S12EXSW-I-3-02	VOC, SVOC, PCBs, Metals, Hg, and Cn
R0905778	S12EXFL-J-2-02	SVOC and Hg
R0905818	S12EXSW-O-8-05	PCBs
910067	S12EXFL-I-4-01	VOC, SVOC, Pesticides, PCBs, Metals, Hg, and Cn

Table G-3
Summary of Spike Analysis Results
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SDG	Spiked Sample	Noncompliance	Sample Affected	Action
Columbia Analytical Services				
Soil Matrix				
VOC				
R0904203	S12EXFL-I-3-01	The following did not met the recovery requirement: Acetone (430% MS, 343% MSD), Benzene (66% MSD), Bromodichloromethane (69% MS, 68% MSD), Carbon Tetrachloride (66% MS, 65% MSD), Chlorobenzene (65% MS, 66% MSD), 1,1-Dichloroethene (66% MSD), Cis-1,2-Dichloroethene (69% MS, 66% MSD), Trans-1,2-Dichloroethene (64% MS, 62% MSD), Cis-1,3-Dichloropropene (65% MS, 64% MSD), Trans-1,3-Dichloropropene (65% MS, 65% MSD), Ethylbenzene (66% MS, 66% MSD), 2-Hexanone (Methyl butyl ketone) (67% MS, 69% MSD), Styrene (64% MS, 67% MSD), Tetrachloroethene (64% MS, 62% MSD), Toluene (65% MS), 1,1,1-Trichloroethane (69% MSD), Trichloroethene (69% MS), Otho-Xylenes (63% MS, 65% MSD), and M/P-Xylenes (64% MS, 64% MSD).	S12EXFL-I-3-01	Qualify sample S12EXFL-I-3-01 Acetone detects as J. Qualify sample S12EXFL-I-3-01 Bromodichloromethane, Carbon Tetrachloride, Chlorobenzene, Cis-1,2-Dichloroethene, Trans-1,2-Dichloroethene, Cis-1,3-Dichloropropene, Trans-1,3-Dichloropropene, Ethylbenzene, 2-Hexanone (Methyl butyl ketone), Styrene, Tetrachloroethene, Otho-Xylenes, and M/P-Xylenes results as J.
R0904203	S12EXPR-B-2-01	Acetone (314% MS, 314% MSD) did not met the recovery requirement	S12EXPR-B-2-01	Qualify sample S12EXPR-B-2-01 Acetone detects as J.
R0904258	S12EXPR-O-8-03	The following did not met the recovery requirement: Acetone (1166% MS, 1231% MSD), Bromoform (65% MSD), Bromomethane (45% MS, 35% MSD), 2-Butanone (MEK) (23% MS, 22% MSD), Cis-1,3-Dichloropropene (42% MS, 34% MSD), Trans-1,3-Dichloropropene (53% MS, 41% MSD), 2-Hexanone (Methyl butyl ketone) (9% MS, 4% MSD w %RPD 74%), Methyl isobutyl ketone (19% MS, 9% MSD w %RPD 67%), Styrene (63% MS, 53% MSD), Otho-Xylenes (68% MSD), and M/P-Xylenes (69% MSD).	S12EXPR-O-8-03	Qualify sample S12EXPR-O-8-03 Acetone detects as J. Qualify sample S12EXPR-O-8-03 Bromomethane, 2-Butanone (MEK), Cis-1,3-Dichloropropene, Trans-1,3-Dichloropropene, 2-Hexanone (Methyl butyl ketone), Methyl isobutyl ketone, and Styrene results as J.
R0904422	S12STOCK-C1-11	The following did not met the recovery requirement: 2-Butanone (MEK) (48% MS), Chloromethane (69% MS), Cis-1,3-Dichloropropane (60% MS, 58% MSD), Trans-1,3-Dichloropropene (61% MS, 58% MSD), 2-Hexanone (24% MS, 25% MSD), 4-Methyl-2-pentanone (MIBK) (50% MS, 50% MSD), and Styrene (68% MSD).	S12STOCK-C1-11	Qualify sample S12STOCK-C1-11 for Cis-1,3-Dichloropropane, Trans-1,3-Dichloropropene, 2-Hexanone, and 4-Methyl-2-pentanone (MIBK) results as J.
R0904596	S12EXFL-O-8-01	%Rec met requirements except for Acetone (158% MS, 347% MSD) with a %RPD = 75%.	S12EXFL-O-8-01	Qualify sample S12EXFL-O-8-01 Acetone detect as J.
R0905678	S12EXSW-I-3-02	%Rec met requirements except for the following: Acetone (712% MS, 893% MSD), Bromomethane (59% MSD), 2-Hexanone (Methyl butyl ketone) (66% MS, 55% MSD), Methyl isobutyl ketone (69% MSD). %RPD met requirements except Bromomethane (32%).	S12EXSW-I-3-02	Qualify sample S12EXSW-I-3-02 Acetone detect as J. Qualify sample S12EXSW-I-3-02 Methyl butyl ketone result as J.
R0905778		MS/MSD analysis was not conducted on any project sample for this SDG		No action was taken based on MS/MSD results alone.
SVOC				
R0904203	S12EXFL-I-3-01	Hexachlorocyclopentadiene (%RPD = 72%) did not met the recovery requirement	S12EXFL-I-3-01	No action was taken based on the MS/MSD results alone.
R0905678	S12EXSW-I-3-02	The MS had 46 of the 65 SVOCs parameters with %Rec below their limits. The MSD had 4 parameters with %Rec below their limits. The %RPD was abve 30% for all SVOC parameters except 2,4-Dinitrophenol.	S12EXSW-I-3-02	No action was taken based on the MS/MSD results alone.

Table G-3
Summary of Spike Analysis Results
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SDG	Spiked Sample	Noncompliance	Sample Affected	Action
Pesticides				
R0904422	S12STOCK-C1-11	All pesticides had %Rec between the columns <20% for all pesticides except: Endrin Ketone (139% MS, 341% MSD with RPD 84%), Heptachlor (155% MS), and Delta-BHC (136% MS).	S12STOCK-C1-11	Qualify sample S12STOCK-C1-11 results for Endrin Ketone as J.
R0905678		MS/MSD analysis was not conducted on any project sample for this SDG, however a MS/MSD analysis was performed. All pesticides had %RPD between the columns <20% for all pesticides.		No action was taken based on MS/MSD results alone.
R0905778		MS/MSD analysis was not conducted on any project sample for this SDG, however a MS/MSD analysis was performed. All pesticides had %RPD between the columns <20% for all pesticides except: Endrin Aldeh (28.71% MS, 34.42% MSD, 40.26% MS-2, 43.88% MSD-2), Beta-Endosulfan (20.68%) MSD-2), and Gamma-Chlordane (25.03% MS-2 and 20.87% MSD-2).		No action was taken based on MS/MSD results alone.
PCBs				
R0905678	S12EXSW-I-3-02	Aroclor-1260 had %Rec above the limit for both the MS (241%) and MSD (208%), but the RPD was within the limits (15%). All PCBs had %RPD between the columns <20% for all PCBs except for column DB-17, which had a MS (43.6%) and MSD (26.8%).	All soil samples in the SDG	No action was taken since all PCB results were non-detect.
R0905778		MS/MSD analysis was not conducted on any project sample for this SDG, however a MS/MSD analysis was performed. All PCBs had %RPD between the columns <20% for all PCBs.		No action was taken based on MS/MSD results alone.
R0905818	S12EXSW-O-8-05	The MS and MSD %Rec were within limits (98% and 69%, respectivitly), however the %RPD between the MS and MSD was 35%, which is above the lab limt (30%).	S12EXSW-O-8-05	No action was taken based on MS/MSD results alone.
Metals				
R0904203	S12EXPR-B-2-01	Post digestion spike had low recovery for Se (70.6%).	S12EXPR-B-2-01	No action was taken based on the post digestion spike results.
R0904258	S12EXPR-O-8-03	All spike metal recoveries were within the limits and did not have a initial conc >4x spike conc except Antimony (51%).	All soil samples in the SDG	Qualify all Antimony results > MDL as J.
R0904367	S12EXSW-D-2-01	All spike metal recoveries were within the limits and did not have a initial conc >4x spike conc except Potassium (73%) and Antimony (73%).	All soil samples in the SDG	Qualify all Potassium and Antimony results as J.
R0904422	S12STOCK-C1-11	All spike metal recoveries were within the limits and did not have a initial conc >4x spike conc except Lead (72%) and Antimony (70%).	S12STOCK-C1-11	Qualify sample S12STOCK-C1-11 Lead and Antimony results as J.
R0904596		A spike sample analysis was not performed for this SDG	All soil samples in the SDG	Qualify all metals and cyanide results as J since they were not analyzed as part of the spike sample.
R0905778	S12EXFL-J-2-02	A spike sample analysis was not performed on all metals except Hg for this SDG	All soil samples in the SDG	Qualify all metals except mercury as J since they were not analyzed as part of the spike sample.
Water Matrix				
VOC				
R0905678		MS/MSD analysis was not conducted on any project sample for this SDG		No action was taken based on MS/MSD results alone.
SVOC				
R0905678		MS/MSD analysis was not conducted on any project sample for this SDG		No action was taken based on MS/MSD results alone.

Table G-3
Summary of Spike Analysis Results
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SDG	Spiked Sample	Noncompliance	Sample Affected	Action
Pesticides				
R0905678		MS/MSD analysis was not conducted on any project sample for this SDG, however a MS/MSD analysis was performed. All pesticides had %RPD between the columns <20% for all pesticides.		No action was taken based on MS/MSD results alone.
PCBs				
R0905678		MS/MSD analysis was not conducted on any project sample for this SDG, however a MS/MSD analysis was performed. All PCBs had %RPD between the columns <20% for all PCBs.		No action was taken based on MS/MSD results alone.
Metals				
R0905678		A spike sample analysis was not performed for this SDG	All soil samples in the SDG	Qualify all metals and cyanide results as J since they were not analyzed as part of the spike sample.
Life Science Labarotories				
Soil Matrix				
SVOC				
910067	S12EXFL-4-3-01	%Rec met requirements except: 1,2-Dichlorobenzene (19% MS with 121% RPD), 1,3-Dichlorobenzene (12% MS with 141% RPD), 1,4-Dichlorobenzene (14% with 136% RPD), 2,2'-oxybis(1-Chloropropane) (75% RPD), Bis(2-Chloroethyl)ether (32% MS with 86% RPD), Bis(2-Chloroisopropyl)ether (36% MS with 75% RPD), Hexachlorobutadiene (36% MS with 71% RPD), Hexachloroethane (14% MS), and N-Nitrosodimethylamine (8% MS).		No action was taken based on MS/MSD results alone.
Pesticides				
910067	S12EXFL-4-3-01	Analysis Run #18587. All pesticides had %Rec within the lab limits except: 4,4'-DDD (135% MS with 51% RPD), 4,4'-DDT (179% MS with 73% RPD), Aldrin (391% MS with 115% RPD), and Alpha-BHC (239% MS with 68% RPD) were above the lab limit; Gamma-Chlordane (28% RPD) was above the lab limit; and Endrin Aldehyde (0% MS), Heptachlor (0% MS), and Heptachlor Epoxide (0% MS) were below the lab limit.		No action was taken since recoveries were not outisde the limits for both the MS and MSD.
910067	S12EXFL-4-3-01	Analysis Run #18588. All pesticides had %Rec within the lab limits except: 4,4'-DDE (154% MS with 61% RPD), 4,4'-DDT (262% MS with 102% RPD), Alpha-BHC (227% MS with 66% RPD), Beta-BHC (135% MSD), Gamma-Chlordane (212% MS with 87% RPD), Heptachlor (245% MS), and Heptachlor Epoxide (150% MS) were above the lab limit; and Beta-BHC (0% MS) and Endrin Aldehyde (0% MS) were below the lab limit.		No action was taken since recoveries were not outisde the limits for both the MS and MSD.
PCBs				
910067	S12EXFL-4-3-01	The MS/MSD results for Aroclor-1016 (0%) %Rec was below the lab limit. Aroclor-1016 and Aroclor-1260 had %RPD between the columns <20%.		No action was taken based on the MS/MSD results alone.
Metals				
910067	S12EXFL-4-3-01	All spike metal recoveries were within the limits and did not have a initial conc >4x spike conc except Antimony (33% MS, 29% MSD).	All soil samples in the SDG	Qualify Sb results as J.

Table G-4
Summary of Laboratory Control Sample Results
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SDG	Noncompliance	Sample Affected	Action
VOC			
R0904367	2nd LCS recovery for Acetone (137%) and Methyl Ethyl Ketone (133%) were above project limit but within lab limit.		No action was taken since recovery was within the laboratory limit.
Metals			
R0904203	LCS for Sb above 120% at 157.8% and 152%		Sb was found within the lab limits; therefore no action was taken.
R0904258	LCS for Sb above 120% at 145%		Sb was found within the lab limits; therefore no action was taken.
R0904367	LCS for Sb above 120% at 152% and 131%		Sb was found within the lab limits; therefore no action was taken.
R0904422	LCS for Sb and Fe were both above 120% at 146%		Sb and Fe were found within the lab limits; therefore no action was taken.
R0904596	LCS for Sb above 120% at 150.8%		Sb was found within the lab limits; therefore no action was taken.
R0905678	LCS for Sb above 120% at 169%		Sb was found within the lab limits; therefore no action was taken.
R0905778	LCS for Sb above 120% at 151%		Sb was found within the lab limits; therefore no action was taken.

Table G-5
Summary of Surrogate Noncompliance Results
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SDG	Samples	Description	Qualification
Pesticide			
R0905778	S12EXSW-I-2-03 (1st analysis)	tetrachloro-m-xylene recovery was 18%.	Re-analysis of S12EXSW-I-2-03 was within limits, no action was taken.
PCB			
R0904258	S12EXPR-O-8-01 (re-analysis)	Surrogates decachlorobiphenyl recovery (148%) was above lab limit 146%, but within Region 2 <150% limit.	No action was taken, since recovery was within project limits.
R0904258	S12DS04	decachlorobiphenyl (DCB) and tetrachloro-m-xylene (TCMX) recoveries were 0%.	No action was taken, since dilution factor was 100x.
R0905678	S12EXFL-I-3-01, S12EXSW-I-3-01, S12EXSW-I-3-02, and S12EXSW-I-3-03	Surrogate recoveries above the 150% limit were S12EXFL-I-3-01 for DCB (151%), S12EXSW-I-3-01 for TCMX (151%) and DCB (154%), S12EXSW-I-3-02 for TCMX (181%), and S12EXSW-I-3-03 for TCMX (163%) and DCB (156%)	Qualify detects as J for samples S12EXSW-I-3-01 and S12EXSW-I-3-03.
R0905778	S12EXSW-I-2-03 (1st analysis)	tetrachloro-m-xylene recovery was 23%.	Re-analysis of S12EXSW-I-2-03 was within limits, no action was taken.

Table G-6
Summary of Blank Noncompliance Results
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SDG	Analytes Detected	Blank	Sample Affected	Blank Concentration	Action
Columbia Analytical Services					
Soil Matrix					
VOC					
R0904203	Acetone (3.0 J)	1st MB (Analysis Lot 163715)	S12EXFL-B-2-01, S12EXFL-C-2-01, S12EXFL-E-1-01, S12EXPR-B-1-01, and S12EXFL-J-4-01	>MDL but <RL	Sample results Acetone results were changed to the Reporting Limit and qualified as U.
R0904203	Acetone (2.2 J)	2nd MB (Analysis Lot 163934)	S12EXPR-E-1-01, S12EXPR-C-1-01, S12EXPR-C-2-01, S12EXPR-D-1-01, S12EXFL-I-3-01, S12EXFL-I-3-02, and S12EXPR-I-3-01	>MDL but <RL	Sample results Acetone results were changed to the Reporting Limit and qualified as U.
R0904203	Acetone (2.2 J)	4th MB (Analysis Lot 164325)	S12EXFL-K-3-01 and S12EXPR-I-2-01	>MDL but <RL	Sample results Acetone results were changed to the Reporting Limit and qualified as U.
R0904258	Acetone (3.2 J)	Trip Blank	All samples in this SDG.	>MDL but <RL	Qualify Acetone results < CRDL as the CRDL value and U.
R0904258	Acetone (2.2 J)	1st MB (Analysis Lot 164354)	S12EXFL-N-9-01, S12EXFL-N-9-02, S12EXFL-O-10-01, S12EXPR-N-10-01, S12EXPR-N-10-02, S12EXPR-N-9-01, S12EXPR-O-10-01, S12EXPR-O-7-01, and S12EXPR-O-8-03	>MDL but <RL	Qualify Acetone results < CRDL as the CRDL value and U.
R0904367	Acetone (2.6 J)	1st MB (Analysis Lot 164831)	S12EXSW-A-2-01, S12EXSW-B-2-01, S12EXSW-C-1-01, S12EXSW-C-2-01, S12EXSW-D-1-01, S12EXSW-D-2-01, S12EXSW-E-1-01, S12EXSW-J-2-01, S12EXSW-I-3-01, S12EXSW-J-2-01, S12EXSW-J-3-01, S12EXSW-J-3-02, S12EXSW-J-4-01	>MDL but <RL	Qualify Acetone results for the following samples: S12EXSW-A-2-01 (22 U), S12EXSW-B-2-01 (70 U), S12EXSW-C-1-01 (22 U), S12EXSW-C-2-01 (23 U), S12EXSW-D-1-01 (20 U), S12EXSW-D-2-01 (22 U), S12EXSW-E-1-01 (23 U), S12EXSW-J-2-01 (23 U), S12EXSW-I-3-01 (22 U), S12EXSW-J-2-01 (22 U), S12EXSW-J-3-01 (24 U), S12EXSW-J-3-02 (22 U), S12EXSW-J-4-01 (23 U),
R0904367	Acetone (2.7 J) and Methylene Chloride (0.41 J)	2nd MB (Analysis Lot 164832)	S12EXSW-J-4-02, S12EXPR-J-3-02, S12EXSW-J-4-03, S12EXSW-J-5-01, S12EXSW-K-3-01, S12EXSW-K-4-01, S12EXSW-D-2-02, S12EXSW-N-10-02, S12EXSW-N-9-01, S12EXSW-O-10-01, S12EXSW-O-8-01, S12EXSW-O-8-02, S12EXSW-O-8-03, and S12EXSW-O-9-01.	>MDL but <RL	Qualify Methylene Chloride results for the following samples: S12EXSW-J-4-02 (5.6 U) and S12EXPR-J-3-02 (5.5 U). Qualify Acetone and Methylene Chloride results for the following samples: S12EXSW-J-4-03 (22 U and 5.4 U), S12EXSW-J-5-01 (22 U and 5.4 U), S12EXSW-K-3-01 (22 U and 5.4 U), S12EXSW-K-4-01 (23 U and 5.7 U), S12EXSW-D-2-02 (23 U and 5.7 U), S12EXSW-N-10-02 (22 U and 5.5 U), S12EXSW-N-9-01 (23 U and 5.7 U), S12EXSW-O-10-01 (22 U and 5.5 U), S12EXSW-O-8-01 (23 U and 5.7 U), S12EXSW-O-8-02 (23 U and 5.7 U), S12EXSW-O-8-03 (24 U and 5.9 U), and S12EXSW-O-9-01 (22 U and 5.6 U).

Table G-6
Summary of Blank Noncompliance Results
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SDG	Analytes Detected	Blank	Sample Affected	Blank Concentration	Action
R0904422	Acetone (3.7 J and 3.5 J)	both method blanks	S12STOCK-C1-04	>MDL but <RL	Qualify sample S12STOCK-C1-04 Acetone results as 23 U.
SVOC					
R0904258	Benzyl Alcohol (41 J) and Bis(2-Ethylhexyl) Phthalate (140 J)	8/12/09 method blank associated with Analysis Lot# 165652	S12EXPR-O-8-03, S12EXPR-O-9-01, and S12-STOCK-C1-01	>MDL but <RL	Qualify Benzyl Alcohol results in samples: S12EXPR-O-803 (390 U), S12EXPR-O-9-01 (360 U), and S12-STOCK-C1-01 (390 U). Bis(2-Ethylhexyl) Phthalate was not detected in the samples, therefore no action was taken.
R0904367	Diethyl Phthalate (46 J)	method blank for analysis lot #165282	S12EXSW-A-2-01 and S12EXSW-J-2-01	>MDL but <RL	Qualify the following project samples in analysis lot #165282/165455 with Diethyl Phthalate results > MDL but < RL: S12EXSW-A-2-01 (360 U) and S12EXSW-J-2-01 (370 U).
R0904367	Benzyl Alcohol (41 J) and Bis(2-Ethylhexyl) Phthalate (140 J)	method blank in analysis lot# 165652	S12EXSW-D-2-02, S12EXSW-N-10-01 , S12EXSW-N-10-02, S12EXSW-N-9-01, S12EXSW-O-10-01, S12EXSW-O-7-01, S12EXSW-O-8-01, S12EXSW-O-8-02, S12EXSW-O-8-03, S12EXSW-O-9-01, and S12EXPR-J-3-02	>MDL but <RL	Qualify the following project samples in analysis lot #165652/165835 with Benzyl Alcohol and Bis(2-Ethylhexyl) Phthalate results > MDL but < RL: S12EXSW-D-2-02 (380 U), S12EXSW-N-10-01 (380 U), S12EXSW-N-10-02 (360 U), S12EXSW-N-9-01 (370 U), S12EXSW-O-10-01 (370 U and 370 U), S12EXSW-O-7-01 (410 U), S12EXSW-O-8-01 (380 U), S12EXSW-O-8-02 (370 U), S12EXSW-O-8-03 (390 U), S12EXSW-O-9-01 (370 U and 370 U), and S12EXPR-J-3-02 (360 U).
R0904422	Benzyl Alcohol (41 J and 47 J)	method blank	All project samples in this SDG.	>MDL but <RL	All project samples detected Benzyl Alcohol > MDL but < RL except S12STOCK-C1-10 which was non-detect. Qualify all Benzyl Alcohol results except sample S12STOCK-C1-10, change results to RL and qualify as U.
R0905778	Benzyl Alcohol (47 J)	method blank	All project samples in this SDG.	>MDL but <RL	All project samples detected Benzyl Alcohol > MDL but < RL. Qualify all Benzyl Alcohol results, change results to RL and qualify as U.
Metals					
R0904203	Sb (6.2 J), Ba (0.6 J), Ni (0.3 J), and Ag (0.3 J)	ICB analyzed on 8/18/09 for metals		>MDL but <RL	No action was taken based on the ICB results since numerious metals were detected in subsequent CCBs analyses.
R0904203	Sb (7.2 J), Be (0.1 J), Mg (-6.2 J), Ag (0.4 J), and V (0.3 J)	CCB3 at 21:29 on 8/18/09	(see below)	>MDL but <RL	(see below)

Table G-6
Summary of Blank Noncompliance Results
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SDG	Analytes Detected	Blank	Sample Affected	Blank Concentration	Action
R0904203	Al (-20.5 J), Sb (7.2 J), As (4.5 J), Ba (-0.4 J), Be (0.2 J), Mg (-10.9 J), Ag (0.6 J), Tl (2.0 J), and V (0.3 J)	CCB4 at 22:31 on 8/18/09	Samples: S12EXFL-B-2-01, S12EXFL-C-2-01, S12EXFL-E-1-01, S12EXPR-E-1-01, and S12EXFL-J-4-01 were analyzed between CCB3 and CCB4.	>MDL but <RL	Qualify results for Al, Sb, As, Ba, Be, Ag, Tl, and V if results >=MDL but <=RL. Qualify sample S12EXPR-E-1-01 results for Be (0.53 U) and Ag (1.06 U). Qualify results for samples S12EXFL-B-2-01 Ag (1.04 U) and S12EXFL-J-4-01 Ag (1.09 U).
R0904203	Al (-23.9 J), Sb (6.9 J), As (2.9 J), Ba (-0.4 J), Mg (-11.9 J), Ag (0.8 J), Tl (2.3 J), and V (0.4 J)	CCB5 at 23:39 on 8/18/09	Samples: S12EXFL-K-3-01, S12EXPR-E-1-01, S12EXPR-A-2-01, S12EXPR-C-1-01, S12EXPR-C-2-01, S12EXPR-D-1-01, and S12EXFL-I-3-01 were analyzed between CCB4 and CCB5.	>MDL but <RL	Qualify results for Al, Sb, As, Ba, Be, Ag, Tl, and V if results >=MDL but <=RL. Qualify sample S12EXPR-A-2-01 results for Be (0.55 U).
R0904203	Al (-19.1 J), Sb (6.7 J), As (3.3 J), Ba (-0.5 J), Mg (-14.6 J), Mn (-0.2 J), Ag (0.9 J), and V (0.3 J)	CCB6 at 00:06 on 8/19/09	Samples: S12EXFL-I-3-02, S12EXPR-I-3-01, S12EXPR-J-2-01, and S12EXPR-J-3-01 were analyzed between CCB5 and CCB6.	>MDL but <RL	Qualify results for Al, Sb, As, Ba, Ag, Tl, and V if results >=MDL but <=RL. Qualify sample S12EXPR-I-3-01 results for Be (0.54 U).
R0904203	Al (-19.5 J), Sb (7.1 J), As (4.1 J), Ba (-0.7 J), Cd (-0.1 J), Mg (-14.6 J), Mn (-0.4 J), Se (-2.7 J), Ag (0.7 J), and V (0.2 J)	CCB7 at 00:35 on 8/19/09	No project samples were analyzed between CCB6 and CCB7.	>MDL but <RL	No action was taken.
R0904203	Sb (7.0 J), As (4.3 J), Cd (-0.1 J), Mg (-11.0 J), Ag (0.6 J), Tl (2.6 J), and V (0.7 J)	CCB8 at 01:47 on 8/19/09	Samples: S12EXPR-J-4-01, S12EXPR-J-4-02, S12EXPR-J-4-03, S12EXPR-J-5-01, S12EXPR-K-3-01, S12EXPR-K-4-01, S12EXPR-D-2-01, and S12EXPR-B-2-01 were analyzed between CCB7 and CCB8.	>MDL but <RL	Qualify results for Al, Sb, As, Ba, Cd, Se, Ag, Tl, and V if results >=MDL but <=RL. Qualify results for samples: S12EXPR-B-2-01 Cd (0.58 U) Se (1.16 U), S12EXPR-D-2-01 Cd (0.55 U) Se (1.1 U), S12EXPR-J-4-01 Cd (0.56 U), S12EXPR-J-4-02 Cd (0.53 U), S12EXPR-J-4-03 Cd (0.56 U) Se (1.11 U), S12EXPR-J-5-01 Cd (0.54 U) Se (1.08 U), S12EXPR-K-3-01 Cd (0.55 U), and S12EXPR-K-4-01 Cd (0.5 U).
R0904203	As (4.9 J), Ba (-0.2 J), Mg (-12.1 J), Mn (-0.3 J), and Ag (0.3 J)	CCB9 at 02:38 on 8/19/09	Samples: S12EXPR-B-2-02 and S12EXPR-I-2-01 were analyzed between CCB8 and CCB9.	>MDL but <RL	Qualify results for Sb, As, Ba, Cd, Ag, Tl, and V if results >=MDL but <=RL. Qualify results for samples S12EXPR-B-2-02 Cd (0.55 U) and S12EXPR-I-2-01 Cd (0.52 U).

Table G-6
Summary of Blank Noncompliance Results
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SDG	Analytes Detected	Blank	Sample Affected	Blank Concentration	Action
R0904203	Al (-4.528 J), Sb (0.413 J), Ba (-0.074 J), Be (0.019 J), Cd (-0.036 J), Cr (0.099 J), Fe (2.594 J), Mg (-1.329 J), Se (0.183 J), and Ag (0.038 J)	Preparation blank on 8/19/09	S12EXPR-B-2-02, S12EXPR-I-2-01, S12EXPR-J-4-01, S12EXPR-J-4-02, S12EXPR-J-4-03, S12EXPR-J-5-01, S12EXPR-K-3-01, S12EXPR-K-4-01, S12EXPR-D-2-01, S12EXPR-B-2-01, S12EXFL-I-3-02, S12EXPR-I-3-01, S12EXPR-J-2-01, S12EXPR-J-3-01, S12EXFL-K-3-01, S12EXPR-E-1-01, S12EXPR-A-2-01, S12EXPR-C-1-01, S12EXPR-C-2-01, S12EXPR-D-1-01, S12EXFL-I-3-01, S12EXFL-B-2-01, S12EXFL-C-2-01, S12EXFL-E-1-01, S12EXPR-E-1-01, and S12EXFL-J-4-01	<MDL	All results in the Prep Blank are <MDL and therefore no action is required.
R0904203	As (3.4 J) and Mg (8.1 J)	CCB4 at 21:06 on 8/19/09	(see below)	>MDL but <RL	(see below)
R0904203	As (2.6 J) and Mg (4.6 J)	CCB5 at 22:13 on 8/19/09	Samples: S12EXPR-J-4-02 and S12EXPR-K-3-01 were analyzed for As between CCB4 and CCB5.	>MDL but <RL	Qualify As results if >=MDL but <=RL. No action was taken since As was detected above the RL.
R0904203	As (4.0 J) and Mg (-4.9 J)	CCB6 at 23:06 on 8/19/09	No project samples were analyzed for As or Mg between CCB5 and CCB6.	>MDL but <RL	No action was taken.
R0904203	As (4.2 J)	CCB7 at 23:36 on 8/19/09	No project samples were analyzed between CCB6 and CCB7.	>MDL but <RL	No action was taken.
R0904203	As (4.8 J)	CCB8 at 00:40 on 8/20/09	Samples: S12EXFL-J-4-01, S12EXPR-A-2-01, S12EXPR-C-2-01, S12EXFL-I-3-02, and S12EXPR-J-2-01 were analyzed for As between CCB7 and CCB8.	>MDL but <RL	Qualify As results if >=MDL but <=RL. No action was taken since As was detected above the RL.
R0904203	Se (1.8 J)	CCB2 at 17:06 on 8/20/09	Sample S12EXPR-E-1-01 was analyzed for Se between CCB1 and CCB2.	>MDL but <RL	Qualify Se results if >=MDL but <=RL. Qualify sample S12EXPR-E-1-01 results for Se (1.19 U)
R0904258	Sb (5.8 J), Ba (0.6 J), Cr (0.38 J), and Tl (2.11 J)	ICB analyzed on 8/10/09 for metals		>MDL but <RL	No action was taken based on the ICB results since numerious metals were detected in subsequent CCBs analyses.
R0904258	Sb (6.65 J), Ba (0.73 J), Mg (18.85 J), and Ag (0.35 J)	CCB2 at 01:55 on 8/10/09	(see below)	>MDL but <RL	(see below)
R0904258	Sb (5.21 J), Ba (0.8 J), Mg (17.16 J), Mn (0.28 J), Se (-1.85 J), and Ag (0.41 J)	CCB3 at 03:06 on 8/10/09	Samples: S12EXFL-N-9-01, S12EXFL-N-9-02, S12EXFL-O-10-01, and S12EXPR-N-10-01 were analyzed between CCB2 and CCB3.	>MDL but <RL	Qualify results for Sb, Ba, Se, and Ag if results >=MDL but <=RL. Qualify Se results for samples S12EXFL-N-9-01 (1.2 U), S12EXFL-N-9-02 (1.1 U), and S12EXPR-N-10-01 (1.1 U).

Table G-6
Summary of Blank Noncompliance Results
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SDG	Analytes Detected	Blank	Sample Affected	Blank Concentration	Action
R0904258	Sb (4.1 J), Ba (1.03 J), Cd (0.14 J), Mg (17.5 J), Mn (0.69 J), and Tl (1.94 J)	CCB4 at 04:17 on 8/10/09	Samples: S12EXPR-N-10-02, S12EXPR-N-9-01, S12EXPR-O-10-01, S12EXPR-O-7-01, S12EXPR-O-8-01, S12EXPR-O-8-02, and S12EXPR-O-8-03 were analyzed between CCB3 and CCB4.	>MDL but <RL	Qualify results for Sb, Ba, Cd, Se, and Tl if results >=MDL but <=RL. Qualify results for samples S12EXPR-N-10-02 Cd (0.569 U), S12EXPR-N-9-01 Cd (0.539 U) Se (1.1 U), S12EXPR-O-10-01 Cd (0.54 U) Se (1.1 U), S12EXPR-O-7-01 Cd (0.603 U), S12EXPR-O-8-01 Cd (0.584 U), S12EXPR-O-8-02 Cd (0.547 U) Se (1.1 U), and S12EXPR-O-8-03 Cd (0.583 U) Se (1.2 U).
R0904258	Sb (4.06 J), Ba (0.76 J), Cr (0.25 J), Mg (11.57 J), Mn (0.41 J), and Ag (0.43 J)	CCB5 at 04:53 on 8/10/09	Samples: S12EXPR-O-8-04, S12EXPR-O-9-01, and S12-STOCK-C1-01 were analyzed between CCB4 and CCB5.	>MDL but <RL	Qualify results for Sb, Ba, Cd, Cr, Ag, and Tl if results >=MDL but <=RL. Qualify results for samples S12EXPR-O-8-04 Cd (0.585 U) Se (1.2 U), S12EXPR-O-9-01 Cd (0.549 U) Se (1.1 U), and S12-STOCK-C1-01 Cd (0.58 U) Se (1.2 U).
R0904258	As (-0.58 J), Ba (0.02 J), Cr (0.16 J), Cu (0.57 J), Fe (4.98 J), Ni (0.05 J), Se (0.41 J), and Zn (0.36 J)	Preparation blank on 8/10/09	S12EXFL-N-9-01, S12EXFL-N-9-02, S12EXFL-O-10-01, S12EXPR-N-10-01, S12EXPR-N-10-02, S12EXPR-N-9-01, S12EXPR-O-10-01, S12EXPR-O-7-01, S12EXPR-O-8-01, S12EXPR-O-8-02, S12EXPR-O-8-03, S12EXPR-O-8-04, S12EXPR-O-9-01, and S12-STOCK-C1-01	<MDL	All results in the Prep Blank are <MDL and therefore no action is required.
R0904258	Tl (2.56 J)	CCB1 at 14:28 on 8/12/09	(see below)	>MDL but <RL	(see below)
R0904258	Se (3.31 J)	CCB2 at 15:38 on 8/12/09	Samples: S12EXFL-N-9-01 and S12EXFL-N-9-02 were analyzed between CCB1 and CCB2 for Tl.	>MDL but <RL	No action was taken since Tl was non-detect in both samples.
R0904258	Se (4.39 J)	CCB3 at 16:49 on 8/12/09	Samples: S12EXPR-N-10-01, S12EXPR-N-10-02, S12EXPR-N-9-01, S12EXPR-O-10-01, S12EXPR-O-8-01, S12EXPR-O-8-02, and S12EXPR-O-8-03 were analyzed between CCB2 and CCB3 for Tl	>MDL but <RL	No action was taken since Tl was non-detect in the samples.
R0904258	Se (3.15 J)	CCB4 at 17:43 on 8/12/09	Samples: S12EXPR-O-8-04, S12EXPR-O-9-01, and S12-STOCK-C1-01 were analyzed between CCB2 and CCB3 for Tl.	>MDL but <RL	No action was taken since Tl was non-detect in the samples.
R0904367	As (3.26 J), Ba (1.11 J), Cd (0.28 J), Mg (5.45 J), Ni (0.41 J), Se (5.23 J), Tl (2.24 J), and Zn (5.35 J)	ICB analyzed on 8/21/09 for metals		>MDL but <RL	No action was taken based on the ICB results since numerious metals were detected in subsequent CCBs analyses.

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SDG	Analytes Detected	Blank	Sample Affected	Blank Concentration	Action
R0904367	Ba (1.39 J), Cd (0.29 J), Mg (12.43 J), Mn (0.29 J), Ni (0.43 J), Se (5.14 J), Ag (-0.43 J), Tl (2.79 J), and Zn (5.05 J)	CCB1 at 8:39 on 8/21/09	(see below)	>MDL but <RL	(see below)
R0904367	As (-2.29 J), Ba (2.1 J), Cd (0.28 J), Mg (25.24 J), Mn (0.62 J), Ni (0.73 J), Se (5.75 J), Tl (2.7 J), and Zn (5.07 J)	CCB2 at 9:49 on 8/21/09	Samples: S12EXSW-A-2-01, S12EXSW-B-1-01, S12EXSW-B-2-01, S12EXSW-C-1-01, S12EXSW-C-2-01, S12EXSW-D-1-01, and S12EXSW-D-2-01 were analyzed between CCB1 and CCB2.	>MDL but <RL	Qualify results for Ba, Cd, Ni, Se, Tl, and zn if results >=MDL but <=RL. Qualify samples results: S12EXSW-A-2-01 Cd (0.55 U) Se (1.1 U), S12EXSW-B-1-01 Cd (0.53 U) Se (1.1 U), S12EXSW-B-2-01 Cd (1.7 U) Se (3.5 U), S12EXSW-C-1-01 Cd (0.55 U), S12EXSW-C-2-01 Cd (0.55 U) Se (1.1 U), S12EXSW-D-1-01 Cd (0.53 U) Se (1.1 U), and S12EXSW-D-2-01 Cd (0.52 U) Se (1.0 U).
R0904367	Ba (2.4 J), Cd (0.33 J), Mg (28.62 J), Mn (0.77 J), Ni (0.93 J), Tl (2.72 J), and Zn (5.31 J)	CCB3 at 10:58 on 8/21/09	Samples: S12EXSW-E-1-01, S12EXSW-I-2-01, S12EXSW-I-3-01, S12EXSW-J-2-01, S12EXSW-J-3-01, S12EXSW-J-3-02, and S12EXSW-J-4-01 were analyzed between CCB2 and CCB3.	>MDL but <RL	Qualify results for Ba, Cd, Ni, Se, Tl, and Zn if results >=MDL but <=RL. Qualify samples results: S12EXSW-E-1-01 Cd (0.57 U), S12EXSW-I-2-01 Cd (0.57 U) Se (1.1 U), S12EXSW-I-3-01 Cd (0.55 U) Se (1.1 U), S12EXSW-J-2-01 Cd (0.54 U) Se (1.1 U), S12EXSW-J-3-01 Cd (0.59 U) Se (1.2 U), S12EXSW-J-3-02 Cd (0.54 U) Se (1.1 U), and S12EXSW-J-4-01 Se (1.1 U).
R0904367	Al (-20.33 J), Ba (2.45 J), Cd (0.32 J), Mg (29.78 J), Mn (0.76 J), Ni (0.85 J), Se (1.92 J), Tl (2.93 J), and Zn (5.11 J)	CCB4 at 11:39 on 8/21/09	Samples: S12EXSW-J-4-02 and S12EXSW-J-4-03 were analyzed between CCB3 and CCB4.	>MDL but <RL	Qualify results for Ba, Cd, Ni, Se, Tl, and Zn if results >=MDL but <=RL. Qualify samples results: S12EXSW-J-4-02 Cd (0.55 U) Se (1.1 U) and S12EXSW-J-4-03 Cd (0.54 U) Se (1.1 U).
R0904367	Al (-2.76 J), Ba (0.10 J), Ca (2.2 J), Cr (0.25 J), Fe (4.2 J), Mg (1.57 J), Mn (0.08 J), Ni (0.07 J), Se (0.72 J), Ag (0.03 J), Na (3.70 J), and Zn (0.73 J)	Preparation blank on 8/21/09	S12EXSW-A-2-01, S12EXSW-B-1-01, S12EXSW-B-2-01, S12EXSW-C-1-01, S12EXSW-C-2-01, S12EXSW-D-1-01, S12EXSW-D-2-01, S12EXSW-E-1-01, S12EXSW-I-2-01, S12EXSW-I-3-01, S12EXSW-J-2-01, S12EXSW-J-3-01, S12EXSW-J-3-02, S12EXSW-J-4-01, S12EXSW-J-4-02, and S12EXSW-J-4-03	<MDL	All results in the Prep Blank are <MDL and therefore no action is required.
R0904367	As (3.8 J), Ba (0.83 J), Cd (0.18 J), Mg (13.79 J), Se (2.91 J), and V (0.22 J)	ICB analyzed on 8/25/09 for metals		>MDL but <RL	No action was taken based on the ICB results since numerious metals were detected in subsequent CCBs analyses.

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SDG	Analytes Detected	Blank	Sample Affected	Blank Concentration	Action
R0904367	As (6.26 J), Ba (0.81 J), Cd (0.17 J), Mg (12.09 J), Se (4.89 J), Ag (-0.35 J), and Na (36.09 J)	CCB2 at 17:46 on 8/25/09	(see below)	>MDL but <RL	(see below)
R0904367	Ba (0.99 J), Cd (0.13 J), Mg (14.29 J), Mn (0.31 J), Ni (0.36 J), Se (4.08 J), and Ag (-0.45 J)	CCB3 at 18:56 on 8/25/09	Sample S12EXSW-E-1-01 was analyzed between CCB2 and CCB3 for Tl.	>MDL but <RL	No action was taken since Tl is not a contaminate in either CCB.
R0904367	As (2.3 J), Ba (0.76 J), Cr (0.44 J), Mg (13.09 J), Se (4.05 J), Ag (-0.37 J), and V (0.54 J)	CCB5 at 20:34 on 8/25/09	(see below)	>MDL but <RL	(see below)
R0904367	Ba (1.5 J), Cd (0.18 J), Mg (20.9 J), Mn (0.46 J), Ni (0.36 J), Se (4.21 J), Ag (-0.6 J), and Tl (-2.38 J)	CCB6 at 21:44 on 8/25/09	Samples: S12EXSW-J-5-01, S12EXSW-K-3-01, S12EXSW-K-4-01, S12EXSW-D-2-02, S12EXSW-N-10-01, and S12EXSW-N-10-02 were analyzed between CCB5 and CCB6.	>MDL but <RL	Qualify results for As, Ba, Cd, Cr, Ni, Se, Ag, Tl, and V if results >=MDL but <=RL. Qualify samples results: S12EXSW-J-5-01 Cd (0.54 U) Se (1.0 U), S12EXSW-K-3 01 Cd (0.54 U), S12EXSW-K-4-01 Cd (0.55 U), S12EXSW-D-2-02 Cd (0.56 U), and S12EXSW-N-10-01 Cd (0.57 U) Se (1.1 U).
R0904367	Ba (1.08 J), Cd (0.15 J), Mg (17.72 J), Mn (0.41 J), Se (2.97 J), and Ag (-0.45 J)	CCB7 at 22:55 on 8/25/09	Samples: S12EXSW-N-9-01, S12EXSW-O-10-01, S12EXSW-O-7-01, S12EXSW-O-8-01, S12EXSW-O-8-02, S12EXSW-O-8-03, S12EXSW-O-9-01, and S12EXSW-J-3-02 were analyzed between CCB6 and CCB7.	>MDL but <RL	Qualify results for Ba, Cd, Ni, Se, Ag, and Tl if results >=MDL but <=RL. Qualify samples results: S12EXSW-N-9-01 Cd (0.57 U), S12EXSW-O-10-01 Cd (0.55 U), S12EXSW-O-7-01 Cd (0.62 U) Se (1.2 U), S12EXSW-O-8-01 Cd (0.57 U) Se (1.1 U), S12EXSW-O-8-02 Cd (0.56 U), S12EXSW-O-8-03 Cd (0.58 U) Se (1.2 U), and S12EXSW-J-3-02 Cd (0.54 U) Se (1.1 U).
R0904367	Al (-2.28 J), aS (-0.25 J), Ba (0.04 J), Cd (-0.03 J), Cr (0.12 J), Fe (3.34 J), Mg (0.86 J), Mn (0.05 J), Se (0.29 J), Ag (-0.04 J), Na (5.53 J), Tl (-0.3 J), and V (0.03 J)	Preparation blank on 8/25/09	S12EXSW-E-1-01, S12EXSW-J-5-01, S12EXSW-K-3-01, S12EXSW-K-4-01, S12EXSW-D-2-02, S12EXSW-N-10-01, S12EXSW-N-10-02, S12EXSW-N-9-01, S12EXSW-O-10-01, S12EXSW-O-7-01, S12EXSW-O-8-01, S12EXSW-O-8-02, S12EXSW-O-8-03, S12EXSW-O-9-01, and S12EXSW-J-3-02	<MDL	All results in the Prep Blank are <MDL and therefore no action is required.
R0904367	Tl (2.72 J)	CCB3 at 10:57 on 8/26/09	Sample S12EXSW-J-3-01 was analyzed between CCB2 and CCB3 for Tl.	>MDL but <RL	No action was taken since Tl was non-detect in the samples.
R0904367	Tl (2.90 J)	ICB analyzed on 8/26/09 at 14:02 for Tl		>MDL but <RL	No action was taken based on the ICB results since numerious metals were detected in subsequent CCBs analyses.

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R0904367	Tl (2.33 J)	CCB2 at 15:41 on 8/26/09	Samples: S12EXSW-J-5-01, S12EXSW-K-3-01, S12EXSW-K-4-01, S12EXSW-N-10-01, S12EXSW-N-9-01, and S12EXSW-O-7-01 were analyzed between CCB1 and CCB2 for Tl.	>MDL but <RL	No action was taken since Tl was non-detect in the samples.
R0904367	Tl (2.88 J)	CCB3 at 16:45 on 8/26/09	Samples: S12EXSW-O-8-01, S12EXSW-O-8-02, S12EXSW-O-8-03, S12EXSW-O-9-01, and S12EXSW-J-3-02 were analyzed between CCB2 and CCB3 for Tl.	>MDL but <RL	No action was taken since Tl was non-detect in the samples.
R0904422	Ba (1.12 J) and V (0.28 J)	ICB analyzed for metals		>MDL but <RL	No action was taken based on the ICB results since numerious metals were detected in subsequent CCBs analyses.
R0904422	Al (-42.59 J), As (3.3 J), Ba (-0.26 J), Ca (21.53 J), Mg (-4.36 J), Ag (-0.34 J), and V (0.25 J).	CCB2	(see below)	>MDL but <RL	(see below)
R0904422	Al (-41.28 J), As (2.93 J), Ba (-0.25 J), Mg (-4.73 J), Ni (0.23 J), and Ag (-0.48 J)	CCB3	Samples: S12STOCK-C1-02, S12STOCK-C1-03, S12STOCK-C1-04, S12STOCK-C1-05, S12STOCK C1-06, and S12STOCK-C1-07 were analyzed between CCB2 and CCB3.	>MDL but <RL	All Samples results for As, Ca, Ni, and V were >RL, therefore no action was taken.
R0904422	Al (-39.07 J), As (4.69 J), Ba (-0.27 J), Mg (-9.86 J), and Ag (-0.45 J)	CCB4	Samples: S12STOCK-C1-08, S12STOCK-C1-09, S12STOCK-C1-10, S12STOCK-C1-11, and S12STOCK-C1-12 were analyzed between CCB3 and CCB4.	>MDL but <RL	All Samples results for As and Ni were >RL, therefore no action was taken.
R0904422	Al (-6.55 J), Ba (-0.09 J), Cd (-0.03 J), Cr (0.09 J), Fe (2.69 J), Mg (-1.20 J), Na (5.95 J), and Ag (-0.03 J)	Preparation blank	All project samples in this SDG.	<MDL	All results in the Prep Blank are <MDL and therefore no action is required.
R0904596	Sb (7.7 J), Ba (1.8 J), Cd (0.2 J), Cr (0.4 J), Co (0.5 J), Mg (8.3 J), Mn (0.3 J), Ni (0.5 J), Se (3.6 J), Ag (0.3 J), and V (1.0 J)	ICB analyzed for metals		>MDL but <RL	No action was taken based on the ICB results since numerious metals were detected in subsequent CCBs analyses.
R0904596	Sb (5.4 J), Ba (1.9 J), Cd (0.3 J), Mg (19.2 J), Mn (0.4 J), Ni (0.5 J), Se (7.1 J), Ag (0.3 J), and V (0.5 J)	CCB2	(see below)	>MDL but <RL	(see below)

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SDG	Analytes Detected	Blank	Sample Affected	Blank Concentration	Action
R0904596	Sb (5.4 J), Ba (1.9 J), Cd (0.3 J), Co (0.6 J), Mg (16.4 J), Mn (0.5 J), Ni (0.3 J), Se (4.0 J), and V (0.5 J)	CCB3	Sample S12EXFL-O-8-01 was analyzed between CCB2 and CCB3.	>MDL but <RL	Qualify sample S12EXFL-O-8-01 results for Cd (0.68 U), Ag (1.37 U), and Se (1.37 U).
R0904596	Al (-1.757 J), Sb (0.504 J), As (-0.43 J), Ba (0.031 J), Cd (-0.019 J), Cr (0.066 J), Fe (3.398 J), Mg (0.686 J), Mn (0.047 J), Ni (-0.022 J), Se (0.334 J), Na (2.685 J), and Tl (-0.244 J)	Preparation blank	S12EXFL-O-8-01	<MDL	All results in the Prep Blank are <MDL and therefore no action is required.
R0905678	Sb (4.15 J), Ba (2.76 J), Co (1.04 J), Mg (8.89 J), Ni (0.59 J), Tl (2.10 J), and V (0.73 J)	ICB analyzed for metals		>MDL but <RL	No action was taken based on the ICB results since numerious metals were detected in subsequent CCBs analyses.
R0905678	Sb (4.24 J), Ba (2.53 J), Cd (0.19 J), Co (0.54 J), Mg (18.49 J), Mn (0.25 J), Ni (0.45 J), Se (2.33 J), and V (0.50 J)	CCB1	(see below)	>MDL but <RL	(see below)
R0905678	Sb (5.25 J), Ba (4.07 J), Cd (0.24 J), Co (1.58 J), Cr (0.25 J), Mg (28.17 J), Mn (0.81 J), Hg (-0.01 J), Ni (1.01 J), Se (1.88 J), and V (0.47 J)	CCB2	Samples: S12EXFL-I-3-03, S12EXSW-I-3-05, and S12EXSW-I-3-02 were analyzed between CCB1 and CCB2.	>MDL but <RL	Qualify samples detects for Sb, Ba, Cd, Co, Cr, Mg, Mn, Hg, Ni, Se, and V if results >=MDL but <=RL. Qualify samples results: S12EXFL-I-3-03 Cd (0.557 U) Hg (0.032 U), S12EXSW-I-3-05 Cd (0.561 U) Hg (0.031 U) Se (1.1 U), and S12EXSW-I-3-02 Cd (0.564 U) Hg (0.033 U).
R0905678	Ba (4.13 J), Cd (0.28 J), Co (1.09 J), Cr (0.36 J), Mg (28.09 J), Mn (0.87 J), Ni (0.97 J), Tl (1.84 J), and V (0.37 J)	CCB3	Sample S12EXSW-I-3-03 was analyzed between CCB2 and CCB3.	>MDL but <RL	Qualify detects for Sb, Ba, Cd, Co, Cr, Mg, Mn, Hg, Ni, Se, Tl, and V if results >=MDL but <=RL. Qualify sample S12EXSW-I-3-03 results for Hg (0.032 U).

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R0905678	As (-0.23 J), Cd (-0.01 J), Ca (7.54 J), Cr (0.12 J), Cu (0.27 J), Fe (3.23 J), Mg (-0.56 J), Mn (0.02 J), Hg (-0.002 J), and Ni (0.05 J)	Preparation blank	All project samples in this SDG.	<MDL	All results in the Prep Blank are <MDL and therefore no action is required.
R0905778	Sb (5.37 J), As (3.03 J), Ba (4.16 J), Be (0.14 J), Cd (0.25 J), Co (1.04 J), Mg (11.14 J), Ni (0.90 J), Se (-1.82 J), and V (1.47 J)	ICB analyzed for metals		>MDL but <RL	No action was taken based on the ICB results since numerious metals were detected in subsequent CCBs analyses.
R0905778	Sb (4.25 J), As (2.31 J), Ba (2.77 J), Cd (0.19 J), Co (0.54 J), Mg (18.25 J), Ni (0.63 J), and V (0.71 J)	CCB1	No project samples were analyzed before or after CCB1	>MDL but <RL	No action was taken since no project samples were analyzed before or after CCB1.
R0905778	Sb (6.16 J), As (2.55 J), Ba (7.15 J), Be (0.23 J), Cd (0.36 J), Co (1.58 J), Mg (32.13 J), Mn (0.74 J), Ni (1.45 J), Ag (0.34 J), and V (2.33 J)	CCB2	(see below)	>MDL but <RL	(see below)
R0905778	Al (20.24 J), Sb (4.52 J), As (3.34 J), Ba (3.35 J), Cd (0.21 J), Co (1.09 J), Mn (0.73 J), Ni (0.45 J), Ag (0.55 J), and V (1.35 J)	CCB3	Samples: S12EXFL-J-2-02, S12EXSW-J-2-02, S12EXSW-I-2-03, S12EXSW-I-2-02, and S12EXPR I-2-02 were analyzed between CCB2 and CCB3.	>MDL but <RL	Qualify results for Al, Sb, As, Ba, Be, Cd, Co, Mg, Mn, Ni, Ag, and V if results >=MDL but <=RL. Qualify sample results: S12EXFL-J-2-02, S12EXSW-J-2-02 Cd (0.589 U), S12EXSW-I-2-03 Cd (0.629 U), S12EXSW-I-2-02 Cd (0.622 U), and S12EXPR-I-2-02 Cd (0.597 U).
R0905778	Ba (-0.07 J), Ca (8.5 J), Cr (0.12 J), Mg (-1.36 J), Ni (0.04 J), V (0.03 J), and Zn (0.38 J)	Preparation blank	All project samples in this SDG.	<MDL	All results in the Prep Blank are <MDL and therefore no action is required.

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SDG	Analytes Detected	Blank	Sample Affected	Blank Concentration	Action
Columbia Analytical Services					
Water Matrix					
Metals					
R0905678	Sb (7.43 J), Ba (3.47 J), Cd (0.18 J), Co (0.80 J), and V (0.67 J)	ICB analyzed for metals		>MDL but <RL	No action was taken based on the ICB results since numerious metals were detected in subsequent CCBs analyses.
R0905678	Sb (5.54 J), Ba (2.15 J), Cd (0.25 J), Co (0.48 J), Mg (14.5 J), and V (0.42 J)	CCB1	(see below)	>MDL but <RL	(see below)
R0905678	Sb (6.94 J), Ba (2.74 J), Cd (0.19 J), Co (0.48 J), Mg (15.93 J), Mn (0.35 J), and V (0.40 J)	CCB2	Sample WW1006-01 was analyzed between CCB1 and CCB2.	>MDL but <RL	Qualify results for Sb, Ba, Cd, Co, Mg, Mn, and V if results >=MDL but <=RL, change result to RL and qualify as U. Qualify sample WW1006-01 results for Sb (60 U) and V (50 U).
R0905678	Ba (1.23 J), Mg (29.11 J), Mn (0.62 J), Na (33.73 J), and V (-0.3 J)	Preparation blank	WW1006-01	>MDL but <RL	Prep Blank detected Ba, Mg, Mn, and Na > MDL but <RL, therefore qualify results for Ba, Mg, Mn, and V if results >=MDL but <=RL, change result to RL and qualify as U. Qualify sample WW1006-01 results for V (50 U).
Life Science Labarotories					
Soil Matrix					
Metals					
910067	Ca (6.82 J) and Fe (1.5 J)	Preparation blank	All project samples in this SDG.	<RL	All results in the Prep Blank are <CRDL. No action was taken, since all project sample results for Ca and Fe are >CRDL.

Table G-7
List of Parent/Field Duplicate Samples
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SDG	Parent Sample	Field Duplicate
R0904203	S12EXFL-I-3-01	S12EXFL-I-3-02
R0904203	S12EXPR-B-2-01	S12EXPR-B-2-02
R0904258	S12EXPR-O-8-03	S12EXPR-O-8-04
R0904367	S12EXSW-D-2-01	S12EXSW-D-2-02
R0904422	S12STOCK-C1-11	S12STOCK-C1-12
910067	S12EXFL-I-4-01	S12EXFL-I-4-02

Table G-8
Summary of Noncompliance Results for Parent/Field Duplicate Samples
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Sample	SDG	Noncompliance TCLs/TALs	Action
Columbia Analytical Services			
Soil matrix			
		Field Duplicate	
VOC			
S12EXSW-D-2-01/2	R0904367	Acetone and Toluene were detected in at least one of the samples.	Acetone %RPD = 57% due to low detected concentrations, qualify results as J. Toluene %RPD = 132% was due to a detect and non-detect results, no action was taken.
SVOC			
S12EXFL-I-3-01/2	R0904203	Pair S12EXFL-I-3-01/2 %RPD results were within the limits for most of the analytes, however Bis(2-Ethylhexyl)phthalate (132%) had RPD's >50%. Bis(2-Ethylhexyl)phthalate was detected in the parent samples (76 J), but non-detect (370 U) at difference concentrations.	Qualify Bis(2-Ethylhexyl)phthalate results in both samples as J.
S12EXPR-O-8-03/4	R0904258	The %RPD results were within the limits for most of the analytes, however Benzyl Alcohol (106%) had RPD's >50%. Benzyl Alcohol was detected in the parent samples (120 BJ), but non-detect (390U) at difference concentrations.	Qualify Benzyl Alcohol results in both samples as J.
S12EXSW-D-2-01/2	R0904367	The %RPD results were within the limits for most of the analytes, however the following analytes had RPD's >50%: Benzyl Alcohol (110%) and Bis(2-Ethylhexyl) Phthalate (150%). Bis(2-Ethylhexyl) Phthalate was detected in one sample and non-detect in the other . Benzyl Alcohol was detected in both samples but at difference concentrations (38 J and 130 J).	Qualify both analytes results in both samples as J.
S12STOCK-C1-11/12	R0904422	The %RPD results were within the limits for most of the analytes, however the following analytes had RPD's >50%: Anthracene (155%), Benzo(a)anthracene (-92%), Benzo(a)pyrene (-87%), Benzo(b)fluoranthene (104%), Benzo(k)fluoranthene (117%), Bis(2-Ethylhexyl) Phthalate (138%), Chrysene (-84%), Fluoranthene (-111%), Indeno (1,2,3-cd)pyrene (131%), and Pyrene (-107%). The following analytes were detected in one sample and non-detect in the other: Anthracene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Bis(2-Ethylhexyl) Phthalate, and Indeno (1,2,3-cd)pyrene. The remaining analytes were detected in both samples but at difference concentrations.	Qualify all results for the above analytes as J.
Metals			
S12EXPR-O-8-03/4	R0904258	All metal %RPD results were within limit %RPD < 50% or Abs Diff < 2xCRDL except Calcium.	Qualify Ca results as J for both samples.
S12STOCK-C1-11/12	R0904422	All metal %RPD results were within limit except lead (67%).	Qualify both samples Lead results as J.
Soil matrix			
		Matrix Spike/Laboratory Duplicate	
VOC			

Table G-8
Summary of Noncompliance Results for Parent/Field Duplicate Samples
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

Sample	SDG	Noncompliance TCLs/TALs	Action
S12EXPR-O-8-03	R0904258	MS/MSD %RPD was outisde the limits for 2-Hexanone (Methyl butyl ketone) (9% MS, 4% MSD w %RPD 74%), Methyl isobutyl ketone (19% MS, 9% MSD w %RPD 67%)	Qualify sample S12EXPR-O-8-03 2-Hexanone (Methyl butyl ketone) and Methyl isobutyl ketone results as J.
S12EXFL-O-8-01	R0904596	%Rec met requirements except for Acetone (158% MS, 347% MSD) with a %RPD = 75%.	Qualify sample S12EXFL-O-8-01 Acetone detect as J.
S12EXSW-I-3-02	R0905678	%RPD met requirements except Bromomethane (32%).	No action was taken based on the MS/MSD %RPD results alone.
SVOC			
S12EXFL-I-3-01	R0904203	MS/MSD %Rec and %RPD met requirements except Hexachlorocyclopentadiene (%RPD = 72%).	No action was taken based on the MS/MSD results alone.
S12EXSW-I-3-02	R0905678	The %RPD's were above 50% for all SVOC parameters except 2,4-Dinitrophenol.	No action was taken based on the MS/MSD results alone.
Pesticide			
S12STOCK-C1-11	R0904422	Endrin Ketone (139% MS, 341% MSD with RPD 84%)	Qualify sample S12STOCK-C1-11 results for Endrin Ketone as J.
PCB			
S12EXSW-I-3-02	R0905678	Column DB-17 had a %RPD for the MS (43.6%) and MSD (26.8%) for Aroclor-1260	No action was taken since all PCB results were non-detect.
S12EXSW-O-8-05	R0905818	The MS and MSD %Rec were within limits (98% and 69%, respectivitly), however the %RPD between the MS and MSD was 35%, which is above the lab limt (30%).	No action was taken based on MS/MSD results alone.
Metals			
S12EXFL-I-3-01	R0904203	For S12EXFL-I-3-01 all metals had %RPD < 35% except Ca (53%) and Mg (80%).	qualify all Ca and Mg results => CRDL as J
S12STOCK-C1-11	R0904422	The following metals have %RPD > 35%: calcium (78%) and lead (65%).	Qualify sample S12STOCK-C1-11 Ca and Pb results as J.
NA	R0904596	A laboratory duplicate analysis was not performed for this SDG. There was only one sample in the SDG.	Qualify all results as J since lab duplicate analysis was not performed.
Life Science Labarotories			
Soil matrix			
		Field Duplicate	
VOC			
S12EXFL-I-4-01/2	910067	The %RPD results were within the limits for most of the analytes, however Methylene Chloride (156%) had RPD's >50%. Methylene Chloride was detected in the parent samples (0.64 J), but non-detect (5.2 U) at difference concentrations.	Qualify Methylene Chloride results in both samples as J.
SVOC			
S12EXFL-I-4-01/2	910067	The %RPD results were within the limits for most of the analytes, however Bis(2-Ethylhexyl)phthalate (159%) had RPD's >50%. Bis(2-Ethylhexyl)phthalate was detected in the parent samples (42 J), but non-detect (370 U) at difference concentrations.	Qualify Bis(2-Ethylhexyl)phthalate results in both samples as J.

Table G-8
Summary of Noncompliance Results for Parent/Field Duplicate Samples
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

Sample	SDG	Noncompliance TCLs/TALs	Action
Metals			
S12EXFL-I-4-01/2	910067	All metal %RPD results were within limit %RPD < 50% or Abs Diff < 2xCRDL except Magnesium (88% RPD).	Qualify Mg results => CRDL as J.
Soil matrix			
		Matrix Spike/Laboratory Duplicate	
SVOC			
S12EXFL-I-4-01	910067	%Rec met requirements except: 1,2-Dichlorobenzene (19% MS with 121% RPD), 1,3-Dichlorobenzene (12% MS with 141% RPD), 1,4-Dichlorobenzene (14% with 136% RPD), 2,2'-oxybis(1-Chloropropane) (75% RPD), Bis(2-Chloroethyl)ether (32% MS with 86% RPD), Bis(2-Chloroisopropyl)ether (36% MS with 75% RPD), and Hexachlorobutadiene (36% MS with 71% RPD).	No action was taken based on MS/MSD results alone.
Pesticide			
S12EXFL-I-4-01 for Analysis Run #18587	910067	All pesticides had %Rec within the lab limits except: 4,4'-DDD (135% MS with 51% RPD), 4,4'-DDT (179% MS with 73% RPD), Aldrin (391% MS with 115% RPD), and Alpha-BHC (239% MS with 68% RPD) were above the lab limit; and Gamma-Chlordane (28% RPD) was above the lab limit.	No action was taken since recoveries were not outisde the limits for both the MS and MSD.
S12EXFL-I-4-01 for Analysis Run #18588	910067	All pesticides had %Rec within the lab limits except: 4,4'-DDE (154% MS with 61% RPD), 4,4'-DDT (262% MS with 102% RPD), Alpha-BHC (227% MS with 66% RPD), and Gamma-Chlordane (212% MS with 87% RPD) were above the lab limit	No action was taken since recoveries were not outisde the limits for both the MS and MSD.
Metals			
S12EXFL-I-4-01/2	910067	A laboratory duplicate associated with this SDG was not performed on this SDG.	Qualify all metal results as J, since a lab duplicate was not analyzed.

Table G-9
Summary of Noncompliance Results for Target Compound List
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

Sample	SDG	Noncompliance TCLs/TALs	Action
Columbia Analytical Services			
Soil matrix			
Pesticide			
S12EXFL-N-9-01	R0904258	S12EXFL-N-9-01 detected Alpha-BHC (%D = 25.13%)	No action was taken on sample S12EXFL-N-9-01 since %D between 25% and 26% have no action associated with them.
S12EXSW-E-1-01	R0904367	S12EXSW-E-1-01 detected 4,4-DDT (%D = 37.8%)	Qualify sample S12EXSW-E-1-01 4,4-DDT detect as J.
S12EXSW-I-3-02 and S12EXSW-I-3-03	R0905678	S12EXSW-I-3-02 detected Delta-BHC (61 ug/kg) with %D = 26.4%. S12EXSW-I-3-03 detected Delta-BHC (38 ug/kg) had %D = 33.3%	Qualify samples S12EXSW-I-3-02 and S12EXSW-I-3-03 results for Delta-BHC results as J.
PCB			
S12EXPR-J-4-01	R0904203	Aroclor-1254 in sample S12EXPR-J-4-01 with %D > 25% for the DB-17 column was 25.26%	Qualify sample S12EXPR-J-4-01 Aroclor-1254 results J.
S12EXPR-O-8-04 and S12DS05	R0904258	Aroclor-1254 in sample S12EXPR-O-8-04 with %D > 25% for the DB-17 column was 39.15%, and sample S12DS05 with %D > 25% for the DB-17 column was 52.26%	Qualify sample S12EXPR-O-8-04 Aroclor-1254 results J. Qualify sample S12DS05 Aroclor-1254 results JN.
S12STOCK-C1-07	R0904422	Aroclor-1254 in sample S12STOCK-C1-07 with %D > 25%. The %D for the DB-17 column was 49.57%.	Qualify sample S12STOCK-C1-07 Aroclor-1254 results J.
Columbia Analytical Services			
Water matrix			
Pesticide			
WW1006-01	R0905678	sample WW1006-01 Alpha-BHC (0.067) with %D = 46%.	Qualify sample WW1006-01 Alpha-BHC results as J.

Table G-10
Summary of Calibration Noncompliance Results
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SDG	Noncompliance	Calibration	Sample Affected	Action
Columbia Analytical Services				
Soil matrix				
VOC				
R0904203	SDG was outside the %RSD criteria for Nitrobenzene (25.3%). All RRFs were within the limits except: Isobutyl Alcohol (0.035) and 1,4-Dioxane (0.006)	ICV on 7/20/09	All soil samples in the SDG	Nitrobenzene, Isobutyl Alcohol, and 1,4-Dioxane were not reported in the results and therefore do not require action.
R0904203	%Ds were within the Method 8260B QC limit of 20% for all target compounds except: Chloromethane (-23.4%), Acrolein (-45.7%), Iodomethane (-26.8%), Carbon Disulfide (-25.4%), Vinyle Acetate (-39.1%), N-Heptane (26.4%), 4-Methyl-2-Pentanone (-20.6%), 2-Hexanone (-22.4%), 1,1,2,2-Tetrachloroethane (-21%), 1,2,3-Trichloropropane (-22.4%), 2-Chlorotoluene (-24.5%), and Hexachlorobu (25.6%). RRFs were within the limit except: Iso-Butyl Alcohol (0.038) and 1,4-Dioxane (0.007).	CCV (instrument MS #7) on 7/31/09 at 11:05	S12EXFL-B-2-01, S12EXFL-C-2-01, S12EXFL-E-1-01, S12EXPR-B-1-01, and S12EXFL-J-4-01	All of the above analytes except Chloromethane, Carbon Disulfide, 4-Methyl-2-Pentanone, 1,1,2,2-Tetrachloroethane, and 2-Hexanone were not reported in the results and therefore do not require action. Qualify Chloromethane, Carbon Disulfide, 4-Methyl-2-Pentanone, 1,1,2,2-Tetrachloroethane, and 2-Hexanone results as J.
R0904203	%Ds were within the Method 8260B QC limit of 20% for all target compounds. RRFs were within the limit except: Iso-Butyl Alcohol (0.038) and 1,4-Dioxane (0.006)	CCV (instrument MS #7) on 8/3/09 at 13:07	S12EXPR-E-1-01, S12EXPR-C-1-01, S12EXPR-C-2-01, S12EXPR-d-1-01, S12EXFL-I-3-02, S12EXFL-I-3-01, and S12EXPR-I-3-01	Iso-Butyl Alcohol and 1,4-Dioxane were not reported in the results and therefore do not require action.
R0904203	%Ds were within the Method 8260B QC limit of 20% for all target compounds except Dichlorodifluoromethane (21.1%), 1,1-Diclethane (20.7%), and N-Heptane (25%). RRFs were within the limit except: Iso-Butyl Alcohol (0.035) and 1,4-Dioxane (0.006).	CCV (instrument MS #7) on 8/4/09 at 16:57	S12EXPR-J-2-01, S12EXPR-J-3-01, S12EXPR-J-4-01, S12EXPR-J-4-02, S12EXPR-J-4-03, S12EXPR-J-5-01, S12EXPR-K-3-01, S12EXPR-K-4-01, S12EXPR-D-2-01, S12EXPR-B-2-01, and S12EXPR-B-2-02	Dichlorodifluoromethane, 1,1-Diclethane, N-Heptane, Iso-Butyl Alcohol, and 1,4-Dioxane were not reported in the results and therefore do not require action.
R0904203	%Ds were within the Method 8260B QC limit of 20% for all target compounds except Freon 113 (20.4%) and N-Heptane (20.1%). RRFs were within the limit except: Iso-Butyl Alcohol (0.032) and 1,4-Dioxane (0.006).	CCV (instrument MS #7) on 8/5/09	S12EXFL-K-3-01 and S12EXPR-I-2-01	Freon 113, N-Heptane, Iso-Butyl Alcohol, and 1,4-Dioxane were not reported in the results and therefore do not require action.
R0904203	RRFs were within the limit except: Iso-Butyl Alcohol (0.039) and 1,4-Dioxane (0.007).	CCV (instrument MS #7) on 8/7/09 at 10:51	S12EXPR-A-2-01	Iso-Butyl Alcohol and 1,4-Dioxane were not reported in the results and therefore do not require action.
R0904258	SDG was outside the %RSD criteria for Nitrobenzene (25.3%). All RRFs were within the limits except: Isobutyl Alcohol (0.035) and 1,4-Dioxane (0.006).	ICV on 7/20/09	All soil samples in the SDG	Nitrobenzene, Isobutyl Alcohol, and 1,4-Dioxane were not reported in the results and therefore do not require action.
R0904258	%Ds were within the Method 8260B QC limit of 20% for all target compounds except: Acetonitrile (20.7%), N-Heptane (20.5%), and Cyclohexanone (73.9%). RRFs were within the limit except: Iso-Butyl Alcohol (0.030) and 1,4-Dioxane (0.006)	CCV (instrument MS #7) on 8/6/09 at 00:21	S12EXFL-N-9-01, S12EXFL-N-9-02, S12EXFL-O-10-01, S12EXPR-N-10-01, S12EXPR-N-10-02, S12EXPR-N-9-01, S12EXPR-O-10-01, S12EXPR-O-8-03, S12EXPR-O-7-01, and S12-STOCK-C1-01	Acetonitrile, N-Heptane, Cyclohexanone, Isobutyl Alcohol and 1,4-Dioxane were not reported in the results and therefore do not require action.

Table G-10
Summary of Calibration Noncompliance Results
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SDG	Noncompliance	Calibration	Sample Affected	Action
R0904258	%Ds were within the Method 8260B QC limit of 20% for all target compounds except: Iodomethane (-27%) and Hexachlorobu (20.6%). RRFs were within the limit except: Acrolein (0.027), 2-Propanol (0.014), Acetonitrile (0.02), TBA (0.02), Vinyl Acetate (0.044), Propionitrile (0.035), Iso-Butyl Alcohol (0.007), 1,4-Dioxane (0.001), and Cyclohexanone (0.04)	CCV (instrument MS #7) on 8/6/09 at 10:49	S12EXPR-O-8-01, S12EXPR-O-8-02, and S12EXPR-O-8-04, S12EXPR-O-9-01	Iodomethane and Hexachlorobu were not reported in the results and therefore do not require action. Acrolein, 2-Propanol, Acetonitrile, TBA, Vinyl Acetate, Propionitrile, Iso-Butyl Alcohol, 1,4-Dioxane, and Cyclohexanone were not reported in the results and therefore do not require action.
R0904258	RRFs were within the limit except: Iso-Butyl Alcohol (0.035) and 1,4-Dioxane (0.006).	CCV (instrument MS #7) on 8/6/09 at 13:30	No project samples were analyzed after the CCV.	Iso-Butyl Alcohol and 1,4-Dioxane were not reported in the results and therefore do not require action.
R0904367	SDG was outside the %RSD criteria for Methyl Bromide (29.6%) and Iodomethane (42%). All RRFs were within the limits except: Vinyl Acetate (0.045), Isobutyl Alcohol (0.023), 1,4-Dioxane (0.003)	ICV on 8/6/09	All soil samples in the SDG	Iodomethane, Vinyl Acetate, Isobutyl Alcohol, and 1,4-Dioxane were not reported in the results and therefore do not require action. Qualify Methyl Bromide results as J.
R0904367	%Ds were within the Method 8260B QC limit of 20% for all target compounds except: Methyl Bromide (-20.9%), Acetone (-22.7%), Iodomethane (23.7%), Methyl Acetate (-29.7%), Acrylonitrile (-20.8%), and Tetrahydrofuran (-23.2%). RRFs were within the limit except: Vinyl Acetate (0.045), Iso-Butyl Alcohol (0.027), and 1,4-Dioxane (0.003).	CCV (instrument MS #12) on 8/7/09 at 12:51	S12EXSW-A-2-01, S12EXSW-B-1-01, S12EXSW-B-2-01, S12EXSW-C-1-01, S12EXSW-C-2-01, S12EXSW-D-1-01, S12EXSW-D-2-01, S12EXSW-E-1-01, S12EXSW-I-2-01, S12EXSW-I-3-01, S12EXSW-J-2-01, S12EXSW-J-3-01, S12EXSW-J-3-02, S12EXSW-J-4-01	The results for Methyl Bromide and Acetone in all samples were qualified (nondetects were qualified UJ and detects were qualified J). Vinyl Acetate, Isobutyl Alcohol, and 1,4-Dioxane were not reported in the results and therefore do not require action.
R0904367	%Ds were within the Method 8260B QC limit of 20% for all target compounds except: Iodomethane (24.2%), Methyl Acetate (63.5%), 2-Chloroethylvinyl Ether (95.7%), and 1,2,4-Tcbenzene (20.0%). RRFs were within the limit except: Vinyl Acetate (0.037), Iso-Butyl Alcohol (0.026), and 1,4-Dioxane (0.003).	CCV (instrument MS #12) on 8/8/09 at 02:12	S12EXSW-J-4-02, S12EXPR-J-3-02, S12EXSW-J-4-03, S12EXSW-J-5-01, S12EXSW-K-3-01, S12EXSW-K-4-01, S12EXSW-D-2-02, S12EXSW-N-10-01, S12EXSW-N-10-02, S12EXSW-N-9-01, S12EXSW-O-10-01, S12EXSW-O-7-01, S12EXSW-O-8-01, S12EXSW-O-8-02, S12EXSW-O-8-03, and S12EXSW-O-9-01.	Iodomethane, Methyl Acetate, 2-Chloroethylvinyl Ether, and 1,2,4-Tcbenzene were not reported in the results and therefore do not require action. Vinyl Acetate, Isobutyl Alcohol, and 1,4-Dioxane were not reported in the results and therefore do not require action.
R0904422	SDG was outside the %RSD criteria for Methyl Bromide (29.6%) and Iodomethane (42%). All RRFs were within the limits except: Vinyl Acetate (0.045), Isobutyl Alcohol (0.023), 1,4-Dioxane (0.003).	ICV on 8/6/09	All soil samples in the SDG	Iodomethane, Vinyl Acetate, Isobutyl Alcohol, and 1,4-Dioxane were not reported in the results and therefore do not require action. Qualify Methyl Bromide results as J.

Table G-10
Summary of Calibration Noncompliance Results
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SDG	Noncompliance	Calibration	Sample Affected	Action
R0904422	%Ds were within the Method 8260B QC limit of 20% for all target compounds except: Acetone (-22.7%), Iodomethane (28.5%), Methyl Acetate (-27.5%), TBA (-21.1%), Acrylonitrile (-22.6%), Iso-Butyl Alcohol (-26.1%), 2-Chloroethylvinyl Ether (90.3%), and Methyl butyl ketone (-24%). RRFs were within the limit except: Vinyl Acetate (0.039), Iso-Butyl Alcohol (0.029), 1,4-Dioxane (0.003), and 2-Choroethylvinyl Ether (0.018).	CCV (instrument MS #12) on 8/10/09 at 12:08	S12STOCK-C1-02, S12STOCK-C1-03, S12STOCK-C1-04, S12STOCK-C1-05, and S12STOCK-C1-06	The results for Methyl butyl ketone and Acetone in all samples were qualified (nondetects were qualified UJ and detects were qualified J). Vinyl Acetate, Isobutyl Alcohol, 1,4-Dioxane, and 2-Choroethylvinyl Ether were not reported in the results and therefore do not require action.
R0904596	SDG was outside the %RSD criteria for Iodomethane (28.24%) and 2-Chloroethylv (28.79%). All RRFs were within the limits except: Acetonitrile (0.049), Isobutyl Alcohol (0.026), 1,4-Dioxane (0.004), and 2-Chloroethylv (0.046)	ICV on 8/19/09	All soil samples in the SDG	Iodomethane, Acetonitrile, Isobutyl Alcohol, 1,4-Dioxane, and 2-Chloroethylv were not reported in the results and therefore do not require action.
R0904596	%Ds were within the Method 8260B QC limit of 20% for all target compounds except: Iodomethane (28.8%), Carbon Disulfide (22.4%), and 1,4-Dioxane (-25%).	CCV (instrument MS #7) on 8/19/09 at 12:13	All soil samples in the SDG	Iodomethane and 1,4-Dioxane results were not reported. The results for Carbon Disulfide in all samples were qualified (nondetects were qualified UJ and detects were qualified J).
R0905678	SDG was outside the %RSD criteria for Acetone (36.7%RSD) and Tetrahydrafuran (21.7%RSD). All RRFs were within the limits except: Vinyl Acetate (0.046), Isobutyl Alcohol (0.025), 1,4-Dioxane (0.004).	ICV on 9/13/09	All soil samples in the SDG	Tetrahydrafuran, Vinyl Acetate, Isobutyl Alcohol, and 1,4-Dioxane were not reported in the results and therefore do not require action. Qualify Acetone results as J.
R0905678	%Ds were within the Method 8260B QC limit of 20% for all target compounds except: Iodomethane (30.1%), 1,4-Dioxane (-25%), 2-Chloroethylvinyl Ether (55.4%), 4-Methyl-2-Pentanone (MIBK) (20.6%), Butyl Acetate (22.1%), 1,1,1,2-Tetrachloroethane (20.4%), 1,3,5-Trimethylbenzene (20.7%), tert-Butylbenzene (23.3%), 1,2-Dibromo-3-chloropropane (22.9%), Nitrobenzene (28.5%), Hexachlorobu (31.6%), Naphthalen (23.9%), and 1,2,3-Tclbenzene (23.8%).	CCV (instrument MS #7) on 10/10/09 at 12:10	All soil samples in the SDG	The results for 4-Methyl-2-Pentanone (MIBK) in all samples were qualified (nondetects were qualified UJ and detects were qualified J).
R0905778	SDG was outside the %RSD criteria for Acetone (36.7%RSD) and Tetrahydrafuran (21.7%RSD). All RRFs were within the limits except: Vinyl Acetate (0.046), Isobutyl Alcohol (0.025), 1,4-Dioxane (0.004).	ICV on 9/13/09	All soil samples in the SDG	Tetrahydrafuran, Vinyl Acetate, Isobutyl Alcohol, and 1,4-Dioxane were not reported in the results and therefore do not require action. Qualify Acetone results as J.

Table G-10
Summary of Calibration Noncompliance Results
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SDG	Noncompliance	Calibration	Sample Affected	Action
R0905778	%Ds were within the Method 8260B QC limit of 20% for all target compounds except: Dichorodifluoromethane (20.2%), Methyl Bromide (28.1%), Acetone (22%), Iodomethane (30.5%), 2-Nitropropane (25.8%), 2-Chloroethylvinyl Ether (44.6%), Cyclohexane (26.6%), 1,2,3-Trichloropropane (25%), tert-Butylbenzene (21.1%), 1,2-Dibromo-3-chloropropane (22.9%), Nitrobenzene (31.4%), Hexachlorobu (28.7%), and Naphthalen (27.3%).	CCV (instrument MS #7) on 10/12/09 at 11:14	All soil samples in the SDG	The results for Methyl Bromide and Acetone in all samples were qualified (nondetects were qualified UJ and detects were qualified J).
SVOC				
R0904203	%Ds were within the Method 8270C QC limit of 20%, and 40% for poor performers, for all target compounds except 2,2'-oxybis(1-Chloropropane) (-42.2%), Bis(2-Chloroethoxy)methane (-21.2%), and 4-Bromophenyl-phenylether (-23%).	ICV (instrument 5973-A) on 7/31/09 at 17:33	All soil samples in the SDG	No action was taken since Bis(2-Chloroethoxy)methane and 4-Bromophenyl-phenylether were non-detect in all samples.
R0904203	%Ds were within the Method 8270C QC limit of 20%, and 40% for poor performers, for all target except Benzoic Acid (28.9%)	CCV (instrument 5973-A) on 8/5/09 at 09:57	S12EXFL-B-2-01, S12EXFL-C-2-01, S12EXFL-E-1-01, S12EXPR-B-1-01, S12EXFL-J-4-01, S12EXFL-K-3-01, S12EXPR-E-1-01, S12EXPR-A-2-01, S12EXPR-C-1-01, S12EXPR-C-2-01, S12EXPR-D-1-01, S12EXFL-I-3-02, S12EXFL-I-3-01, S12EXPR-I-3-01, S12EXPR-J-2-01, S12EXPR-J-3-01, S12EXPR-J-4-01, and S12EXPR-J-4-02	No action was taken, since Benzoic Acid results were not reported.
R0904258	SDG were within the %RSD criteria for all compounds except for Aniline (21.17%).	ICV (instrument 5973-D) on 7/13/09	S12EXPR-O-8-03, S12EXPR-O-9-01, and S12-STOCK-C1-01	Aniline does not required qualification, since it was not reported in the sample results.
R0904258	%Ds were within the Method 8270C QC limit of 20%, and 40% for poor performers, for all target compounds except Benzoic Acid (27.8%).	CCV (instrument 5973-A) on 8/10/09 at 11:15	S12EXFL-N-9-02, S12EXFL-O-10-01, S12EXPR-N-10-01, S12EXPR-N-10-02, S12EXPR-N-9-01, S12EXPR-O-10-01, S12EXPR-O-7-01, S12EXPR-O-8-01, S12EXPR-O-8-02, and S12EXPR-O-8-04	No action was taken, since Benzoic Acid results were not reported.
R0904367	SDG was outside the %RSD criteria for Aniline (21.17%)	ICV on 7/13/09	All soil samples in the SDG	Aniline does not required qualification, since it was not reported in the sample results.
R0904367	%Ds were within the Method 8270C QC limit of 20%, and 40% for poor performers, for all target compounds except Benzoic Acid (39.2%) and 2,4-Dinitrophenol (47.5%).	CCV (instrument 5973-D) on 8/10/09 at 16:31	S12EXSW-A-2-01, S12EXSW-B-1-01, S12EXSW-B-2-01, S12EXSW-C-1-01, S12EXSW-C-2-01, S12EXSW-D-1-01, S12EXSW-D-2-01, S12EXSW-E-1-01, S12EXSW-I-2-01, and S12EXSW-I-3-01	The results for all the analytes were qualified (nondetects were qualified UJ and detects were qualified J)
R0904422	SDG was outside the %RSD criteria for Aniline (21.17%)	ICV on 7/13/09	All soil samples in the SDG	Aniline does not required qualification, since it was not reported in the sample results.

Table G-10
Summary of Calibration Noncompliance Results
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SDG	Noncompliance	Calibration	Sample Affected	Action
R0904596	%Ds were within the Method 8270C QC limit of 20% for all target compounds, and 40% for poor performers, except: Bis(2-Chloroethoxy)Methane (-23.8%) and 4-Bromophenyl-phenylether (-23.7%).	CCV (instrument 5973-D) on 8/24/09 at 20:28	All soil samples in the SDG	The results for all the analytes in the sample were qualified (nondetects were qualified UJ and detects were qualified J).
R0905678	%Ds were within the Method 8270C QC limit of 20% for all target compounds except: Aniline (32.3%) and Benzoic Acid (38.9%).	CCV (instrument 5973-A) on 10/12/09 at 9:45	All soil samples in the SDG	Neither analytes results were reported, therefore no action was taken.
R0905778	%Ds were within the Method 8270C QC limit of 20% for all target compounds except Aniline (33.7%).	CCV (instrument 5973-D) on 10/13/09 at 10:13	All soil samples in the SDG	Results for Aniline were not reported, therefore no action was taken.
Water matrix				
VOC				
R0905678	SDG was outside the %RSD criteria for 2-butanone (MEK) (53.5%), isobutyl alcohol (42.3%), n-heptane (25.3%), and hexachlorobutadiene (23.0%). All RRFs were within the limits except: Acrolein (0.027), 2-Propanol (0.013), Acetonitrile (0.017), tert-Butyl Alcohol (0.017), Vinyl Acetate (0.047), Propionitrile (0.032), Isobutyl Alcohol (0.008), 1,4-Dioxane (0.001), and Cyclohexanone (0.045).	ICV on 7/17/09	WW1006-01	Acrolein, 2-Propanol, Acetonitrile, tert-Butyl Alcohol, Vinyl Acetate, Propionitrile, Isobutyl Alcohol, n-Heptane, Hexachlorobutadiene, 1,4-Dioxane, and Cyclohexanone were not reported in the results and therefore do not require action. Qualify 2-butanone (MEK) detects as J.
R0905678	%Ds were within the Method 8260B QC limit of 20% for all target compounds except: Dichorodifluoromethane (23.6%), Chloromethane (27.8%), Acrolein (25.9%), and Acetonitrile (-29.4%).	CCV (instrument MS #8) on 10/9/09 at 10:14	WW1006-01	The results for Chloromethane in all samples were qualified (nondetects were qualified UJ and detects were qualified J).
SVOC				
R0905678	%Ds were within the Method 8270C QC limit of 20% for all target compounds except: Aniline (33.3%).	CCV (instrument 5973-A) on 10/9/09 at 15:41	WW1006-01	Aniline results are not reported, therefore no action was taken.
Life Science Labarotories				
Soil matrix				
VOC				
910067	SDG was within the %RSD criteria except for: Acrolein (24.92%), Acetone (33.24%), Vinyl Acetate (33.11%), 2,2-Dichloropropane (36.01%), Carbon Tetrachloride (20.31%), Cis-1,3-Dichloropro (22.58%), Trans-1,3-Dichloropro (34.89%), 1,1,1,2-Tetrachloro (26.3%), Bromoform (28.13%), Trans-1,4-Dichloro (53.27%), n-Butylbenzene (22.12%), 1,2-Dibromo-3-chlor (23.14%), 1,2,4-Trichlorobenz (28.26%), Naphthalene (31.58%), and 1,2,3-Trichlorobenz (29.15%). All RRFs were within the limits except for Acrolein (0.04).	ICV on 10/7/09	All soil samples in the SDG	All the above analytes except Acetone, Carbon Tetrachloride, Cis-1,3-Dichloropropene, Trans-1,3-Dichloropropene, and Bromoform were not reported in the results and therefore do not require action. Qualify all detects for Acetone, Carbon Tetrachloride, Cis-1,3-Dichloropropene, Trans-1,3-Dichloropropene, and Bromoform as J.

Table G-10
Summary of Calibration Noncompliance Results
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SDG	Noncompliance	Calibration	Sample Affected	Action
910067	%Ds were within the Method 8260B QC limit of 20% for all target compounds except for Trans-1,3-Dichloropropene (23.3%).	CCV (instrument #3MS10) on 10/16/09 at 14:26	All soil samples in the SDG	Qualify Trans-1,3-Dichloropropene results as J.
SVOC				
910067	SDG were within the %RSD criteria for all compounds except: Benzoic Acid (33.52%), Hexachlorocyclopentadiene (45.57%), and Pentachlorophenol (27.74%).	ICV on 10/12/09 for intrument #5MS26-A	All soil samples in the SDG	Qualify detects for Benzoic Acid, Hexachlorocyclopentadiene, and Pentachlorophenol as J.

Table G-11
Summary of CRQL Standard Check Results
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SDG	Noncompliance	Sample Affected	Action
Columbia Analytical Services			
Soil matrix			
R0904203	Initial CRDL checks for Selenium had %Rec for Se (136%)	S12EXPR-E-1-01	Qualify Selenium detects < 2xRL as J for sample S12EXPR-E-1-01.
R0904258	Final CRDL checks had %Rec for Se (133%)	All samples in this SDG.	Qualify Selenium detects < 2xRL as J.
R0904367	two Final CRDL checks had %Rec for Se (134% and 144%)	All samples in this SDG.	Qualify Selenium detects < 2xRL as J.
R0904422	Al with %Rec = 63% and 67%	All samples in this SDG.	Qualify Alumium detects < 2xRL as J and non-detects as UJ.

Table G-12
Summary of ICP Serial Dilution Results
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SDG	Noncompliance	Sample Affected	Action
Columbia Analytical Services			
Soil matrix			
R0904203	Sample S12EXFL-I-3-01 serial dilution for all metals with %D < 10% and sample conc > 50xMDL met requirements except Lead (17%) and Zinc (12.4%).	All samples in this SDG.	Qualify all samples Pb and Zn results as J.
R0904203	Sample S12EXPR-B-2-01 serial dilution for all metals with %D < 10% and sample conc > 50xMDL met requirements except Chromium (10.8%), Lead (18.3%), Magnesium (10.8%), Nickel (11.3%), Sodium (10.5%), and Zinc (15%).	All samples in this SDG.	Samples were analyzed for As, Mg, Se, and Tl; therefore qualify all samples Mg results as J.
R0904258	Sample S12EXPR-O-8-03 serial dilution for all metal with %D < 10% and sample conc > 50xMDL met requirements except Zinc (11%)	All samples in this SDG.	Qualify all samples Zn results as J.
R0904367	Sample S12EXSW-D-2-01 serial dilution for all metal with %D < 10% and sample conc > 50xMDL met requirements except Nickel (10%) and Zinc (13%)	S12EXSW-A-2-01, S12EXSW-B-1-01, S12EXSW-B-2-01, S12EXSW-C-1-01, S12EXSW-C-2-01, S12EXSW-D-1-01, S12EXSW-D-2-01, S12EXSW-E-1-01, S12EXSW-I-2-01, S12EXSW-I-3-01, S12EXSW-J-2-01, S12EXSW-J-3-01, S12EXSW-J-3-02, S12EXSW-J-4-01, S12EXSW-J-4-02, and S12EXSW-J-4-03	Qualify results as J (Ni and Zn).
R0904367	Sample S12EXSW-N-10-02 serial dilution for all metal with %D < 10% and sample conc > 50xMDL met requirements except Iron (10%), Magnesium (11%), Lead (11%), and Zinc (13%).	S12EXSW-J-5-01, S12EXSW-K-3-01, S12EXSW-K-4-01, S12EXSW-D-2-02, S12EXSW-N-10-01, S12EXSW-N-10-02, S12EXSW-N-9-01, S12EXSW-O-10-01, S12EXSW-O-7-01, S12EXSW-O-8-01, S12EXSW-O-8-02, S12EXSW-O-8-03, S12EXSW-O-9-01, and S12EXPR-J-3-02	Qualify the results as J (Mg, Pb, and Zn).
R0904422	All metal with %D < 10% and sample conc > 50xMDL met requirements except Arsenic (27%), Cadmium (34%), Selenium (253%), and Sodium (16%).	S12STOCK-C1-02, S12STOCK-C1-03, S12STOCK-C1-04, S12STOCK-C1-05, S12STOCK-C1-06, S12STOCK-C1-07, S12STOCK-C1-08, S12STOCK-C1-09, S12STOCK-C1-10, S12STOCK-C1-11, and S12STOCK-C1-12	Qualify the results as J (As, Na, and Cd) and reject Se detects.
R0905778	sample S12EXPR-I-2-02; lead was the only metal with %D > 10% and sample conc > 50xMDL.	All samples in this SDG.	Positive results for lead in the project samples were qualified "J".
Life Science Labarotories			
Soil matrix			
910067	Sample S12EXFL-I-4-01 serial dilution for all metals with %D < 10% and sample conc > 50xMDL met requirements except Cobalt (22%) and Potassium (10.3%)	All samples in this SDG.	Qualify all samples Co and K results as J.

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APPENDIX H

UPDATED SEAD-12 HUMAN HEALTH RISK ASSESSMENT

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TECHNICAL MEMORANDUM
UPDATED RISK ASSESSMENT
RADIOLOGICAL WASTE BURIAL SITES

DATE: November 18, 2011

TO: Julio Vazquez, USEPA
Mark Sergott, NYSDOH
Kuldeep K. Gupta, NYSDEC

FROM: Jeffrey Adams, Parsons

COPIES: Stephen Absolom, USACE
Randall Battaglia, USACE - NY
Tom Battaglia, USACE - NY
Keith Hoddinott, USACHPPM
John Nohrstedt, USACE, CEHNC

SUBJECT: Update of SEAD-12 Historic Disposal Pit Risk Assessment, Seneca Army Depot Activity

1.0 Purpose and Organization of Memorandum

Parsons Infrastructure & Technology Group Inc. (Parsons) has prepared an update to the baseline human health risk assessment previously prepared for SEAD-12, the Radiological Waste Burial Sites, as part of the remedial investigation (RI) in 2002 (Parsons, 2002). The update was conducted to assess whether changes in carcinogenic risk or non-carcinogenic hazard levels result due to the collection of new soil data from the Disposal Pits (Pits A, B, C1 and C2) excavated by the Army during the summer and fall of 2009 to recover military-related items and other forms of debris that were buried during the Army's ownership and occupation of the property.

After the Seneca Army Depot Activity (SEDA or the Depot) was listed as a National Priorities List (NPL) Site by EPA, the Army identified two areas within the former Weapons Storage Area (WSA) of the Depot as locations where hazardous substances had been handled, and where releases to the environment may have occurred. These areas were generally described as Radiological Waste Burial Pits and were designated as SEAD-12A (area north of Building 813) and SEAD-12B (area north of building 804). Geophysical investigations conducted as part of the Expanded Site Inspection identified the locations of the suspected burial pits at SEAD-12A and SEAD-12B. The geophysical investigation of SEAD-12A suggested there were four areas, initially identified as Areas 1 - 4, located within the northeastern corner of the former WSA where burial pits were likely to exist. Burial pit locations 1 - 4 subsequently were designated as Disposal Pit A, B, C2, and C1, respectively, during continuing site investigations. Subsequent to the identification of the suspected burial pits, test pits were dug to characterize materials that were contained in the pits, and soil, sediment, surface water,

and groundwater were collected from the region around the four identified burial areas, and the results obtained from the analysis of these samples suggested that there were hazardous substances present. Based on these data and results, the Army developed plans for a larger scaled remedial investigation of the burial sites.

During the planning stages of the RI for SEAD-12A and SEAD-12B, the Army conducted reviews of information and data contained in Depot files, and concluded that other areas within the greater WSA also had the potential to be locations where materials equivalent to those identified in SEAD-12A and SEAD-12B had been historically handled. Based on this determination, the Army expanded the scope of the RI beyond the bounds of SEAD-12A and SEAD-12B and conducted extensive geophysical, chemical, and radiological investigations of the land within the greater WSA. The expanded investigation of the WSA resulted in the Army's decision to re-define SEAD-12 as a 360 acre site that extended from a southern boundary line, set just north of the Row A0300 storage igloos, outwardly to the western, northern, and eastern perimeter security fences surrounding the WSA, exclusive of land previously designated as SEAD-63 (the Miscellaneous Component Burial Site) that is located roughly halfway up the western border of WSA.

The results of the RI for SEAD-12 indicated there were nine subareas of SEAD-12 that exhibited varying levels for potential hazardous substance release. These nine areas were identified as:

- Building 819 and EM-27;
- Building 815, Building 816, and EM-28;
- Disposal Pits A/B (a portion of the former SEAD-12A including burial pit areas 1 and 2, re-designated as Disposal Pit A and B);
- Disposal Pit C (a portion of former SEAD-12A including burial pit areas 3 and 4, re-designated as C2 and C1);
- Dry Waste Disposal Pit (former SEAD-12B);
- EM-5;
- EM-6;
- Open areas; and
- Building 715 Wastewater Treatment Plant.

At the conclusion of the RI, the Army prepared human health and ecological risk assessments for three of the nine areas identified in SEAD-12. These areas included Disposal Pit A/B, Disposal Pit C, and the Former Dry Waste Disposal Pit (previously designated as SEAD-12B). "These three areas were selected on the basis of site evaluation criteria including areas of documented activity associated with WSA activities; areas where RI investigations (geophysical and test pitting operations) confirmed significant 'military' activity, and proximity to buildings associated with activities of potential concern. Overall, the Former Dry Waste Disposal Pit area, Disposal Pits A/B, and Disposal

Pit C were impacted to the greatest extent by former activities in the Former Weapons Storage Area (SEAD-12)"[1].

In the summer and fall of 2009, the Army excavated the historic burial pits areas 1 – 4 (re-designated as A, B, and C including C2 [ESI area 3], and C1 [ESI area 4], respectively) to provide access to materials that were previously buried at the sites. The goal of this work was to allow the Army to recover, secure, demilitarize, and dispose of any military-related items that were present in the burial pits to ensure that they could not be accessed by future users/owners of the SEAD-12 property. During the recovery of the military-related items and other debris that was found in the historic burial pits approximately 5,400 cubic yards of material was excavated. After the military-related items and other debris were separated from the soil and fill that surrounded it, soil samples were collected and analyzed and the resulting data were used to assess if any of the excavated soil/fill could be re-used as backfill at the excavation sites. Based on the analysis of this data, approximately 2,300 cubic yards of soil was used as backfill at the locations of historic burial pits A and B. In addition, confirmatory soil samples were collected from the base, sidewall, and perimeter of all of the excavation sites to verify that unacceptable levels of residual risk did not remain at the sites.

The Army intends to transfer all of the land within SEAD-12, including the areas of the former Disposal Pits, for non-military reuse purposes. At present, a tenant is occupying some of the facilities within the bounds of SEAD-12 for commercial purposes, and this tenant has indicated that they may want to expand their operations in the future to include the land that is currently within the area where the historic burial pits were previously located. The Army has used the new analytical data developed from soil samples collected from the area of the historic disposal pits to update the previously accepted risk assessments for Disposal Pits A/B and C prepared during the RI.

All estimations of risk or hazards previously determined for human receptors exposed to groundwater, surface water, or sediment within the SEAD-12 site remain as they were reported in the 2002 *Remedial Investigation Report at the Radiological Waste Burial Sites* (RI Report, Parsons, 2002). No samples of these three media were collected during the SEAD-12 Removal Action, and thus the data has not changed.

Section 2 of this memorandum provides background information for the risk assessment, Section 3 identifies and presents the data used to update the soil exposure component of the previously accepted risk assessment, Sections 4 through 7 summarize each step of the four-step risk assessment process (i.e., hazard identification, exposure assessment, toxicity assessment, and risk characterization), Section 8 discusses the risk uncertainties associated with the risk assessment, section 9 lists reference materials used. Discussions presented in each of these sections focus only on changes that result due to the update of the location-specific soil datasets used.

[1] Section 6 "Human Health Risk Assessment", Page 6-1, 3rd paragraph, *Final Remedial Investigation Report at the Radiological Waste Burial Sites (SEAD-12)*, Parsons, August 2002.

2.0 Background

2.1 Site History

The former military facility was owned by the U.S. Government and operated by the Army between 1941 and 2000 when SEDA's military mission ceased. The Depot occupied approximately 10,600 acres of land in the towns of Varick and Romulus in Seneca County, New York. The Depot's historic military mission included receipt, storage, distribution, maintenance, and demilitarization of conventional ammunition, explosives, and special weapons.

In September 2000, the Army assumed the role of caretaker of the former Depot. As caretaker, the Army maintains control of the Depot's land until the time when parcels are transferred to new owners for alternate uses. Areas in the Depot that are subject to continuing investigation and remedial action under the requirements of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), remain under the control of the Army. To date, more than 9,250 acres of the former Depot have been transferred to the Seneca County Industrial Development Agency (SCIDA), the State of New York, and other federal entities.

2.2 Areas of Concern

The historic radiological burial pits (Disposal Pit A, B, and C) are all located in the area previously designated as SEAD-12A, which is located in the northeastern portion of SEAD-12. SEAD-12A is bounded to the north and east by a high-security fence line and Patrol Road, to the south by a wooded area that is located to the north of Buildings 813/814 and 815 between the area's eastern security fence and Service Road No. 1, and to the west by a narrow, north-south oriented row of trees that are located roughly 200 feet east of Service Road No. 1. Prior to the removal action, land within SEAD-12A was classified as generally open and vacant, with intermixed areas that were either vegetated with grass, weeds, and scrub brush or free of vegetative cover.

During the summer and fall of 2009, the Army excavated the former disposal pit sites to gain access to, and to allow the inspection of, materials that had been disposed in the pits during the time of the Army's occupation and use of the land. The primary purpose of this work was to remove and dispose of military-related items that had been buried on site. Because of this work, approximately 5,400 cubic yards of material were excavated from the historic disposal pit sites. Of the total material excavated, approximately 13.25 tons of military-related items were recovered and secured by the Army, and disposed of as low-level radioactive waste at Energy Solutions, LLC in Utah. An additional 122 tons of assorted varieties of scrap metal were recovered and sent to a metals recycler for recovery. More than 5,400 tons of soil and fill material were also transported off-site and disposed at a licensed landfill, while approximately 2,300 cubic yards of the material excavated was used as backfill at the site.

During the excavation activities, the Army collected confirmatory soil data from each of the excavation sites and from the potential backfill material pile to characterize soils that remained at the historic burial pit locations after the completion of the removal action. Each of these soil samples was characterized for Target Compound and Target Analyte List (TCL/TAL, respectively)

contaminants of concern. Excavations at the historic disposal pit sites expanded if soil samples collected exterior of the debris caches from perimeter, sidewall, or excavation base locations indicated that elevated levels of contaminants of potential concern (COPCs) remained at the disposal sites. The excavations were terminated once debris was no longer found in the soil and fill material, and once soil samples indicated that TCL and TAL contaminant levels were consistent with State of New York unrestricted use soil cleanup objective (SCO) levels. In addition, stockpiled soil that was found to be consistent with New York's unrestricted use SCO levels was used to backfill some of the excavation sites.

3.0 Data Used for the Risk Assessment

3.1 Chemical Constituents

All soil data for chemical (non-radiological) constituents used to update the risk assessment calculations were validated by Parsons' chemists in accordance with US Environmental Protection Agency (USEPA) Region 2 Standard Operating Procedures (SOPs).

3.1.1 Soil Data – Disposal Pit A/B

All of the RI soil data previously included in the Disposal Pit A/B risk assessment dataset was evaluated on a location-by-location basis to determine if it was interior or exterior of the excavation sites. Analytical results from RI samples collected within the limits of the soil that was excavated and disturbed during the removal action were eliminated from the Pit A/B soil dataset and replaced by analytical results from confirmatory soil samples (i.e., perimeter, sidewall, excavation base) collected from excavations opened for Pit A and B and from soil samples collected from the Overburden/C1 stockpile of soils recovered from each of the four disposal pit excavations. A listing of the RI soil samples previously used for the Pit A/B risk assessment is presented in **Table 1**, along with information that indicates whether the data have been included with the new analytical results or removed from the updated risk assessment's dataset. The soil dataset used in the updated Disposal Pit A/B human health risk assessment is presented in **Attachment A**, **Table 1**. The Disposal Pit A/B dataset is evaluated as a single combined total soil dataset, which was used to estimate exposure point concentrations (EPCs) that were used throughout the evaluation. This is a departure from the prior RI risk assessment evaluation process in which only the construction worker was exposed to the total soil (i.e., surface and subsurface soil), while other human receptors were exposed to surface soils only. The decision to use this approach was made because the absolute depth of the soil samples is uncertain due to the Disposal Pit backfill and grading operations that were performed at the end of the removal action. The total soil was assumed accessible by all potential receptors evaluated in this risk assessment (construction workers, park workers, recreational child visitors, resident adults, and resident children).

3.1.2 Soil Data – Disposal Pit C

The historic RI dataset for Disposal Pit C was also reviewed as described above in the Pit A/B discussion to identify sample results that were located within the zone disturbed by the SEAD-12 Removal Action. **Table 1** also provides the specific list of soil samples previously used in the risk

assessment for Pit C that were eliminated from the dataset. These data were then eliminated from the updated dataset and replaced by analytical results developed for excavation confirmatory samples collected from Disposal Pits C1 and C2. Data from the Overburden/C1 stockpile samples were not included in this location specific dataset, as all of the Overburden/C1 soil was used as backfill in the area of Disposal Pit A/B once it was verified to be suitable for this purpose.

The soil dataset used in the updated Disposal Pit C human health risk assessment is presented in **Attachment B**, **Table 1**. The Disposal Pit C dataset was also evaluated as a single combined total soil dataset, which was used to estimate exposure point concentrations that were used throughout the evaluation. The total soil was assumed accessible by all potential receptors evaluated in this risk assessment (construction workers, park workers, recreational child visitors, resident adults, and resident children).

3.1.3 Datasets for other media (groundwater, surface water, and sediment)

Exposure point concentrations for surface water, sediment, and groundwater were derived from SEAD-12 site-wide data developed during the RI. Summaries of groundwater, surface water, and sediment exposure point concentrations used in this update of the risk assessment are presented in **Attachment D**, **Tables 1**, **2**, and **3**, respectively.

4.0 Hazard Identification

All contaminants that were detected in soil samples that remained in the vicinity of one of the removal action excavation sites (e.g., post excavation confirmatory soil sample, ESI or RI sample not removed during the removal action, backfill soil characterization sample, etc.) were evaluated for inclusion in the updated human health risk assessment that was performed for the Disposal Pit A/B and C sites.

Non-radiological (i.e., chemical) contaminants found in soil evaluated in this risk assessment (i.e., Contaminants of Potential Concern [COPCs]) were selected by comparing maximum detected concentrations (MDCs) left at an exposure point location (i.e., Disposal Pit A/B or C) with USEPA Regional Screening Level (RSLs) for residential soil (June 2011 Version). RSLs for carcinogenic chemical compounds were used at USEPA's listed value, which corresponds to a target cancer risk of 1×10^{-6}; comparator RSLs for non-carcinogenic chemical compounds were reduced by a factor of 10 (i.e., 0.1 times the listed RSL value), which corresponds to a hazard quotient of 0.1. Chemicals with concentrations below the comparator RSLs were eliminated from the list of COPCs evaluated in the updated risk assessments. Chemicals with no available screening values and chemicals with maximum detected concentrations above the screening values were considered COPCs. In addition, all members of a chemical class that had any one member selected as a COPC were considered COPCs (e.g., all detected carcinogenic polycyclic aromatic hydrocarbons [cPAHs] were retained as COPCs if any one cPAH was identified as a COPC based on the aforementioned screening process).

Fifty-six (56) soil contaminants, including 10 VOCs, 19 SVOCs, five pesticide/PCBs and 22 metals were initially evaluated as COPCs for Disposal Pit A/B. The maximum concentration for each COPC was then compared to the appropriate residential soil RSL value (i.e., full value for carcinogenic

compound or 0.1 times the non-carcinogenic residential soil RSL value) and if the maximum concentration remaining at the site exceeded the RSL comparator value, the compound was retained for further evaluation during the risk assessment. Based on this determination, three cPAHs and seven metals were initially retained as COPCs, and due to the selection of three of the cPAHs, four other cPAHs that were also detected in the soil at Disposal Pit A/B, but which were not observed to exceed screening values, were also retained as "chemicals of the same group" (CSG) for further evaluation in the risk assessment. In addition, three other SVOCs and four other metals were also retained for further evaluation under the risk assessment based on the determination that no comparator RSL screening value existed for them. The soil screening results for Disposal Pit A/B are summarized in **Attachment A**, **Table 2**.

Data for the identified metal COPCs were then compared to SEDA background soil concentrations found for the same metals to assess whether there was any indication that the metals found at the disposal pit excavation site could be attributed to the release of material from activities historically conducted in the area of concern (AOC), or could be associated with natural conditions. This comparison had been used and allowed during the risk assessment performed during the 2002 RI, and was repeated in the update to ensure that data considered in both risk assessments were equivalent. The comparison to background was performed using the Wilcoxon Mann-Whitney (WMW) Test, which is provided in the USEPA's ProUCL Software package (version 4.01.00). This analysis procedure was used in place of the Wilcoxon Rank Sum test that was applied to the SEAD-12 datasets during the SEAD-12 RI.

The WMW test is a non-parametric statistical procedure used for determining whether a difference exists between site and background population distributions. The WMW Test tests whether measurements from one population tend to be larger or smaller than those found in the other population on the assumption that the dispersion of the two sample population distributions is roughly the same. The procedure determines which distribution is higher by comparing the relative ranks of the two datasets when the data from both sets are sorted and rank-ordered in a single list. The underlying assumption in the WMW test is that any difference between background and site concentration distributions results due to a shift in the sample population's mean or median that is attributable to the presence of site-specific contamination adding to background levels.

The hypotheses used in the application of the WMW test are:

H_o (the null hypothesis):	The populations from which the two data sets have been drawn have the same mean.
H_a (the alternative hypothesis):	The measurements from the site population tend to exceed those from the background populations.

where H_o is assumed true unless the test indicates H_o should be rejected in favor of H_a. If H_o cannot be rejected, then it is accepted that the distribution of measurements in the background area is very similar in shape and central tendency (average) to the distribution of measurements in the area being investigated. The WRS test does not require that either data set by normally distributed.

The results of the WMW Test for the 11 metals retained after the comparison to RSL values are summarized in **Attachment A**, **Table 3**. As is reflected in this table, the residual metal concentration statistic (i.e., Mean WMW Value) for six of the 11 retained metals is lower than the comparable value reported sample concentrations in the SEDA background dataset. Therefore, the identified concentrations of these six metals in the vicinity of Disposal Pit A/B cannot be distinguished from background concentrations and there is no indication that a release has occurred at the site. The WMW analysis results for four other metals (i.e., calcium, potassium, selenium, and thallium) indicate that levels of these metals found in the vicinity of former Disposal Pit A/B are higher than those identified in the background soil; therefore, these are retained for further analysis under the risk assessment. The WMW results for sodium provided conflicting information as the results indicate that all of the tested hypotheses (i.e., site equals background, site greater than or equal to background, site less than or equal to background) were true. However, since it is not mathematically possible for two datasets to be greater than and less than each other at the same time it is assumed that the sodium concentrations found at Disposal Pit A/B and the background are equal, and that no release of sodium is likely to have occurred at Disposal Pit A/B. Therefore, based on risk assessment pre-screening and background evaluations, 14 COPCs (i.e., 10 SVOCs, four metals) were evaluated for soil in the updated risk assessment for Disposal Pit A/B.

Fifty-eight (58) soil contaminants, including nine VOCs, 18 SVOCs, seven pesticides, and 24 metals/cyanide were initially evaluated as potential COPCs for Disposal Pit C. Again, the maximum concentration detected for each of the contaminants at Disposal Pit C was compared to the appropriate residential soil RSL value (i.e., full value or 0.1 time soil RSL value, as appropriate) and the compound was retained for further evaluation in the risk assessment if the maximum exceeded the screening value. Based on this determination, four cPAHs, one organochlorine pesticide and nine metals were retained as COPCs. Four other SVOCs, one organochlorine pesticide, and four metals were also retained for further evaluation based on the determination that no comparator RSL screening value existed for them. Due to the retention of the four cPAHs, the other three cPAHs were also retained as "chemicals of the same group" (CSG), and one additional organochlorine pesticide was retained since it was an isomer of the two other organochlorine pesticides selected. The soil screening results for Disposal Pit C are summarized in **Attachment B**, **Table 2**.

The results of the WMW Test for the 13 metals retained after the comparison to RSL values are summarized in **Attachment B**, **Table 3**. As is reflected in this table, the residual metal concentration statistic (i.e., Mean WMW Value) for eight of the 13 retained metals is lower than the comparable value reported for sample concentrations in the SEDA background dataset. Therefore, effects from these metals cannot be distinguished from those of background conditions. WMW Test results for the other five metals indicated that residual soil concentrations found at the Pit C excavation sites were higher than background, so these metals were retained for further processing in the risk assessment. Therefore, based on risk assessment pre-screening and background evaluations, 19 COPCs were evaluated for soil in the updated risk assessment for Disposal Pit C.

5.0 Exposure Assessment

This section describes the receptors and exposure pathways evaluated in the updated risk assessment. The objectives of the exposure assessment were to estimate the magnitude, frequency, duration, and routes of potential human exposures to COPCs at the Disposal Pit AOCs. Potential receptor groups are identified in the exposure assessment and estimates of exposure or chemical and radionuclide intake are calculated based on assumptions regarding exposure pathways and exposure parameters. The following sections of the report summarize the exposure assessment process utilized during this risk assessment.

5.1 Receptors, Exposure Pathways, and Exposure Profiles

The human health risk assessment previously conducted for the Disposal Pits site was completed based on the assumption that land within the AOC would be used for recreational or conservation purposes. Since the submittal of the RI in 2002, the SCIDA has re-designated use of the land within SEAD-12 as future institutional and training areas. In addition, a tenant has leased a portion of SEAD-12 and is currently using the property for commercial purposes (telecommunications / data warehousing). Nevertheless, the Army has updated the risk assessment previously prepared for Disposal Pits A/B and C in SEAD-12, which assumes that the land will be used for conservation/recreational purposes. Assuming that the land will continue to be used for conservation/recreational activities makes the risk assessment more conservative (i.e., more stringent because it applies restrictive exposure assumptions) than would one that assumes the property will be used for institutional/training purposes which is aligned with commercial purposes. In addition, a future 30-year resident (child, adult, and lifetime) was also included to assess potential risks and hazards to receptors under the unrestricted use scenario which is provided to address the State of New York's goal for site remediation to "restore the site to pre-disposal conditions, to the extent feasible and authorized by law". The resident scenarios assume that a child resident is present for six (age 0 to 6) of the 30-year duration and an adult is present for 24 (age 18 to 42) of the 30-year exposure period. Therefore, for this risk assessment the following receptors were evaluated:

1. Current site worker,
2. Future park worker,
3. Future recreational visitor (child),
4. Future construction worker,
5. Future adult and child resident (for hazard assessment), and
6. Future lifetime resident (for carcinogenic risk assessment).

5.1.1 Identification of Exposure Pathways

Exposures are estimated only for exposure pathways that are considered plausible and complete. A complete exposure pathway has the following four elements:

- a source and mechanism for chemical release,
- an environmental transport medium,
- an exposure point, and

- a human receptor and a feasible route of exposure at the exposure point.

A pathway cannot be completed unless each of these elements is present. **Figure 1** illustrates the completed exposure pathways for SEAD-12.

5.1.2 Sources and Receiving Media

Historic maintenance, testing, storage, and disposal operations conducted within the former WSA are the source of potential contaminants that remain at SEAD-12. Soil may be impacted directly because of these operations. Groundwater may be affected due to leaching of potential contaminants in the soil. Sediment and surface water may be affected due to run-off from the affected disposal areas.

5.1.3 Integration of Exposure Pathways

The proper framework of an exposure pathway involves a source, transport medium, exposure point, and an exposure route. The pertinent exposure pathways for SEAD-12 are summarized in **Figure 1**. According to RAGS (USEPA, 1989a), a pathway is considered incomplete if one or more of these components is not present with the exception of the transport medium, which may be absent in the case of direct exposures. Hence, the conclusion, if there is not a complete pathway, there can be no risk resulting from that theoretical pathway. For the purposes of this baseline risk assessment (BRA), current and future human exposure pathways have been identified as potential pathways, which meet the criteria for an exposure pathway.

The following pathways were not quantified based on the rationale below:

1. Ingestion and dermal contact with soil by current off-site area residents was eliminated from the risk assessment based on the unlikely occurrence of a trespasser at SEAD-12. Perimeter security fences remain in place at the WSA and the commercial tenant occupying land to the north and northwest of the former disposal pits controls access to the area via a security force.
2. The most realistic current on-site exposure scenario is considered the site worker scenario. Because the assumptions are based on present data, it was determined that modeling a future site worker would yield no different risks than the current land use scenario.

5.1.4 Summary of Exposure Pathways Quantified

The pathways presented reflect the current onsite and the projected future onsite use of the former Weapons Storage Area. This section presents the rationale for including these exposure pathways in this risk assessment.

<u>Inhalation of Particulate Matter in Ambient Air</u>

Surface soil particles may become airborne via wind erosion, which in turn may be inhaled by individuals at the site. Construction workers may also be exposed to subsurface soil particles. Therefore, inhalation exposure to soil particulates in ambient air was assessed for all current and future onsite receptors.

Incidental Ingestion of On-Site Soils

During the course of daily activities, an on-site worker, a construction worker, recreational visitor, or resident could contact site soils and involuntarily ingest and/or have their skin exposed to them. Therefore, exposure to on-site surface-soils via dermal contact and soil ingestion was assessed for all current and future onsite receptors.

Incidental Dermal Contact (Submersion) to Surface Water and Sediment

There are drainage ditches throughout SEAD-12. This surface water and the associated wet soil, or sediment, may contain chemicals found in the surface soils, since these ditches will collect runoff and soil eroded by the storm events. Because this site is located in the conservation area, park workers and recreational visitors may contact and have their skin exposed to surface water or sediment. Due to current site access restrictions, a trespasser could not contact these water bodies. Therefore, exposures to surface water and sediments via dermal contact were assessed for a future recreational visitor, a future outdoor park worker, and a future resident.

Incidental Ingestion of Sediment

When the drainage ditches are dry, there is potential for contact with the sediment contained in the ditches. While dermal contact with this sediment has been addressed above, there is also the potential that a future recreational visitor or resident might ingest some of this sediment (similar to soil ingestion). Ingestion exposure to sediment would be limited, since the sediment would often be covered by surface water or snow. Exposure to sediment by ingestion was assessed quantitatively for a future resident only.

Ingestion of Groundwater

The groundwater beneath the SEAD-12 is not currently used as a drinking water source for current site workers and there is no current on-site use of groundwater as a potable water source. Additionally, it is unlikely that a well will be installed for use by future construction workers. Therefore, ingestion of groundwater is not considered a completed pathway for each of these scenarios. For other future receptors, the plan is to obtain potable water from the existing water supply line. Potable water is supplied to the Depot from a water supply line that passes through the Town of Varick. Varick's water is obtained from the municipal water treatment plant at the Town of Waterloo. The source of this water is Lake Seneca. It is unlikely that groundwater wells would be installed for future drinking water use since a potable water pipeline exists. Furthermore, numerous investigation within the Depot indicate that the shallow groundwater aquifer at the site is inadequate with respect to both yield and quality, and provide evidence that the shallow aquifer is subject to considerable elevation variation during the year which would its use as a potential supply inconsistent. Nonetheless, since such use is not prevented via an institutional control such as a deed restriction, it is assumed that wells could be installed on site for potable water. Therefore, this is considered a complete pathway and data from the on-site wells are used to calculate exposure concentrations. Exposure via ingestion of groundwater was assessed for a future outdoor park worker, a future recreational visitor, and a future resident.

Inhalation and Dermal Contact (Submersion) with Groundwater while Showering

Recreational visitors and residents may contact groundwater while taking daily showers. These receptors may be exposed to all chemicals contained in groundwater during showering by dermal contact and volatile chemicals that partition into the air via inhalation. Therefore, this is considered a complete pathway and data from the on-site wells are used to calculate exposure concentrations. Exposure via inhalation of groundwater and dermal contact (submersion) was assessed for a future recreational visitor and a future resident.

Chemical (non-ROPC) contaminant exposure assumptions for the current site worker, future park worker, future construction worker, future recreational child visitor, adult resident, and child resident receptors are summarized in **Attachment C**, **Tables 1, 2, 3, 4, 5,** and **6**, respectively. These assumptions approximate the frequency, duration, and manner in which receptors would be exposed to environmental media.

Under USEPA guidelines, the likelihood of carcinogenic and non-carcinogenic effects due to exposure to site-related contaminants are considered separately. Non-carcinogenic risks were assessed by calculation of a Hazard Index (HI), which is an expression of the chronic daily intake of a contaminant divided by its safe or Reference Dose (RfD). A HI that exceeds 1.0 indicates the potential for non-carcinogenic effects to occur. Carcinogenic risks were evaluated using a cancer Slope Factor (SF), which is a measure of the cancer-causing potential of a chemical. Slope Factors are multiplied by daily intake estimates to generate an upper-bound estimate of excess lifetime cancer risk. For known or suspected carcinogens, USEPA has generally established 10^{-4} (i.e., one-in-ten thousand) as the upper bound of the acceptable cancer risk range that defines when action is warranted and when it may not be warranted at a site. USEPA's preferred upper bound for carcinogenic risk is 10^{-6} (i.e., one-in-one million). Between the two values, action is generally not warranted, but may be required if a chemical specific standard that defines acceptable risk is violated or unless there are non-carcinogenic effects or an adverse environmental impact that warrants action.

5.2 COPC Exposure Point Concentrations (EPCs)

Carcinogenic risk and non-carcinogenic hazard indices attributable to exposure to COPCs in soil and ambient air dust were updated and evaluated for both of the Disposal Pit areas (i.e., Pit A/B and Pit C) of concern. Risks and hazards associated with COPCs in groundwater, surface water, and sediment were not re-evaluated as part of this risk assessment update, as no new data for any of these medial were collected and characterized during the SEAD-12 Removal Action.

Risks and hazards were evaluated via reasonable maximum exposure (RME) scenario for each receptor. Soil and ambient air dust EPCs were set either equal to a contaminant's MDC or the contaminant's recommended upper confidence limit (UCL) of the arithmetic mean concentration for the available dataset. MDCs were used as EPCs where limited contaminant data existed, or when the recommended UCL EPC exceeded the maximum concentration detected at the site of interest. UCLs were used for EPCs where large-enough contaminant datasets exist to allow for the calculation of the UCL. When UCLs were used, they were calculated via the USEPA's Software for Calculating Upper

Confidence Limits (ProUCL). When necessary, datasets were analyzed in ProUCL with "ND" to account for non-detect values. This EPC calculation is consistent with USEPA guidance.

Risk due to ambient air dust exposure was evaluated based on total soil EPCs. COPCs for ambient air were determined from soil EPCs and concentrations of particulate matter that were below 10 µm in aerodynamic diameter (PM_{10}) in ambient air. Ambient PM_{10} concentrations for the construction worker were estimated using an emission and dispersion model. PM_{10} concentrations for industrial workers and residents at the Depot were set at 17 $\mu g/m^3$, which is based on particulate measurements collected at the Depot.

EPCs for soil associated with Disposal Pit A/B and C, and ambient air are presented in:

- Disposal Pit A/B: **Attachment A**, **Tables 4A** through **4B**, respectively.
- Disposal Pit C: **Attachment B**, **Tables 4A** through **4B**, respectively.

5.3 Quantification of Exposure

Each receptor's potential exposure to the identified COPCs was quantified for each of the applicable exposure pathways. Potential exposures were calculated following methods recommended in USEPA guidance documents, such as the USEPA Risk Assessment Guidance for Superfund (RAGS) (USEPA, 1989). Human health intake, or absorbed dose (depending on the exposure route), was calculated with EPCs and exposure assumptions. The total exposure of any receptor to any COPC is divided by the period of interest to obtain an average exposure. The period of interest, or averaging time, is a function of the toxic endpoint. For non-carcinogenic effects, the period of interest is the receptor's exposure time (specific to the scenario being assessed); for carcinogenic effects, it is the receptor's lifetime (assumed 70 years).

6.0 Toxicity Assessment

Toxicity variables considered in this assessment include the reference dose (RfD) and the reference concentration (RfC) to evaluate non-carcinogenic effects, and the slope factor and the unit risk to evaluate carcinogenic effects. Toxicity values for the risk assessment were selected in accordance with the USEPA-recommended (2003a) human health toxicity value hierarchy.

For the evaluation of carcinogenic cPAHs, Parsons used toxicity equivalency factors (TEFs) that are based on the toxicity of benzo(a)pyrene as published by the USEPA (1993) (see below).

PAH	TEF
Benzo(a)pyrene	1.0
Benzo(a)anthracene	0.1
Benzo(b)fluoranthene	0.1
Benzo(k)fluoranthene	0.01
Dibenzo(a,h)anthracene	1.0
Chrysene	0.001
Indeno(1,2,3-cd)pyrene	0.1

To calculate the slope factor for any given cPAH, the appropriate TEF was multiplied by the slope factor for benzo(a)pyrene.

Information regarding Gastrointestinal (GI) absorption efficiency for administered doses was used for the development of dermal toxicity factors. Specifically, oral slope factors were converted to dermal slope factors by dividing by the GI absorption efficiency; likewise, oral reference doses were converted to dermal reference doses by multiplying by the GI absorption efficiency. The derivation of dermal toxicity values for the risk assessment is consistent with USEPA (2004) recommendations. The GI absorption efficiency that was used in this risk assessment is the value recommended by the USEPA in its Supplemental Guidance for Dermal Risk Assessment. In the event that information regarding absorption of a particular substance could not be located, an oral absorption efficiency of 100% was assumed. This method is consistent with USEPA Region 2 guidance (personal communication between A. Schatz of Parsons and M. Maddeloni of USEPA Region 2).

For the development of inhalation toxicity values, RfCs were converted into inhalation RfDs with units of milligrams of chemical per kilogram of body weight per day (mg/kg-day). Similarly, inhalation unit risk factors were converted into inhalation slope factors in units of per milligrams of chemical per kilogram of body weight per day ($(mg/kg\text{-}day)^{-1}$).

Ideally, chronic RfDs and RfCs are based on chronic exposure studies of humans or animals. "Chronic exposure" for humans is considered to be exposure of seven years or more; therefore, RfDs and RfCs for chronic exposure are appropriate for evaluating adult and child residential receptor exposures. On the other hand, RfDs and RfCs for subchronic exposure, which is defined as exposure between 1 and 6 years, are appropriate for evaluating construction worker, recreational child visitor, and child resident receptor exposures. Nevertheless, as a conservative approach, chronic RfDs and RfCs were used to assess risk for all receptors.

7.0 Risk Characterization

The detailed risk calculations for soils (i.e., inhalation of dusts, ingestion, and dermal contact) associated with Disposal Pit A/B and Disposal Pit C are provided in **Attachment A**, **Tables 5** through **7** and **Attachment B**, **Tables 5** through **7** respectively. Non-cancer hazard indices and cancer risks calculated for the receptors evaluated based on their exposure to site soils are presented in **Table 2** for Disposal Pit A/B and **Table 3** for Disposal Pit C. Non-cancer hazard indices and cancer risks calculated for the receptors evaluated based on their exposure to all site media are presented in **Table 4** for Disposal Pit A/B and **Table 5** for Disposal Pit C. Non-cancer hazard indices and cancer risks calculated for the receptors evaluated based on their exposure to groundwater, surface water, and sediment are presented in **Attachment D**, **Tables 4** through **9**.

The USEPA-recommended limit for the non-carcinogenic hazard index (HI) is 1.0. The USEPA upper limit for the cancer risk level is 1×10^{-4} and the preferred limit is 1×10^{-6}.

7.1 Risk Characterization Results – Soil

7.1.1 Disposal Pit A/B

7.1.1.1 Conservation/Recreation Scenario

The following table summarizes the non-carcinogenic hazard indices (HIs) and the carcinogenic risk levels that are estimated to remain in the area of historic Disposal Pit A/B due to exposure to site soils via inhalation, ingestion, and dermal contact at the conclusion of the SEAD-12 removal action. This table also compares them to the levels previously estimated to exist due to soil exposures at the location at the conclusion of the RI.

	Removal Action Soils Risk Levels		**RI Soils Risk Levels**	
Receptor	**Hazard Index**	**Cancer Risk**	**Hazard Index**	**Cancer Risk**
Current Site Worker	2.1E-04	3.6E-08	2.6E-03	4.7E-08
Outdoor Park Worker	1.8E-03	3.2E-07	2.2E-02	4.1E-07
Recreational Child Visitor	1.3E-03	3.6E-08	1.4E-02	4.6E-08
Construction Worker	1.1E-02	4.7E-08	1.3E-01	1.5E-07

As is shown, non-carcinogenic HIs estimated to remain at the conclusion of the removal action have decreased for the current site worker, the future outdoor park worker, the future recreational child visitor, and the future construction worker receptors at Disposal Pit A/B and all are below the USEPA threshold limit of 1. Comparably, the estimated cancer risk levels estimated due to exposure to site soils for the site worker, the outdoor park worker, the recreational child visitor, and the construction worker have also all decreased from levels previously predicted at the conclusion of the RI, and are each lower than USEPA's preferred level of 1×10^{-6} for carcinogenic risk.

7.1.1.2 Residential Scenario

The following table summarizes the non-carcinogenic HIs and the carcinogenic risk levels for the adult, child, and lifetime resident that are estimated to remain in the area of historic Disposal Pit A/B due to inhalation, ingestion, and dermal contact with site soils at the conclusion of the SEAD-12 removal action, and compares them to the levels that were previously estimated to exist due to exposure to soil at the location at the conclusion of the RI.

	Removal Action Soils Risk Levels		**RI Soils Risk Levels**	
Receptor	**Hazard Index**	**Cancer Risk**	**Hazard Index**	**Cancer Risk**
Adult Resident	3.5E-03	--	4.2E-02	--
Child Resident	3.0E-02	--	3.5E-01	--
Lifetime Resident	--	1.5E-06	--	2.0E-06

The projected non-carcinogenic HIs for the adult and child resident associated with their exposure to site soils have decreased by approximately 90% from levels projected at the end of the RI, and are all below USEPA's HI target level of 1. Similarly, the lifetime resident's estimated carcinogenic risk

level associated with exposure to site soils at the conclusion of the SEAD-12 removal action has also decreased by approximately 25%, and is close to the USEPA's preferred carcinogenic risk limit (i.e., 1×10^{-6}).

7.1.2 Disposal Pit C

7.1.2.1 Conservation/Recreation Scenario

The table presented below identifies the non-carcinogenic HIs and the carcinogenic risk levels that are estimated to remain in the area of historic Disposal Pit C due to inhalation, ingestion, and dermal contact to site soils at the conclusion of the SEAD-12 removal action. This table also compares them to the levels that were estimated to exist due to soil exposures in the same area at the conclusion of the RI.

	Removal Action Soils Risk Levels		**RI Soils Risk Levels**	
Receptor	**Hazard Index**	**Cancer Risk**	**Hazard Index**	**Cancer Risk**
Current Site Worker	2.6E-04	2.2E-07	1.5E-03	2.0E-08
Outdoor Park Worker	2.3E-03	1.9E-06	1.3E-02	1.7E-07
Recreational Child Visitor	1.1E-03	8.8E-08	9.5E-03	1.9E-08
Construction Worker	1.0E-02	1.7E-08	6.5E-02	1.3E-07

As was previously observed for the Disposal Pit A/B results, the estimated levels of non-carcinogenic HIs for each receptor decreased by 80 – 90% from the prior estimated levels, and are less than USEPA's target of 1.

The estimated cancer risk levels for the site worker, the outdoor park worker, and the recreational child visitor due to exposure to soils remaining in the area of Pit C have all increased over levels previously estimated for the same receptors during the RI, while the carcinogenic risk level predicted for the construction worker has decreased. The noted increases for the site worker, park worker, and the recreational child visitor are partially attributable to the fact that inhalation of dusts containing the carcinogenic PAHs are now included in the risk calculation, whereas during the RI they were not included in the risks estimated due to the lack of an inhalation reference dose. Additionally, the EPCs for indeno(1,2,3-cd)pyrene computed for the souls remaining at Disposal Pit C after the removal action, and which is derived from a limited dataset (i.e., four detections in 71 samples during the RA compared to 16 detections in 46 samples observed during the RI), is roughly five times higher than was detected during the RI, which results in elevated soil dermal and soil ingestion risk levels. However, despite these differences, the carcinogenic risk attributable to soul alone at Disposal Pit C are less than or approximately equivalent to the USEPA's preferred carcinogenic risk threshold of 1×10^{-6}.

7.1.2.2 Residential Scenario

The following table identifies the non-carcinogenic hazard indices and the carcinogenic risk levels for the adult, child, and lifetime resident that are estimated to remain at Disposal Pit C due to inhalation, ingestion, and dermal contact exposure with site soils at the conclusion of the SEAD-12 removal action, and compares them to the levels that were previously estimated to exist due to exposure to soil at the location at the conclusion of the RI.

	Removal Action Soils Risk Levels		**RI Soils Risk Levels**	
Receptor	**Hazard Index**	**Cancer Risk**	**Hazard Index**	**Cancer Risk**
Adult Resident	4.6E-03	--	2.5E-02	--
Child Resident	2.8E-02	--	2.4E-01	--
Lifetime Resident	--	6.3E-06	--	8.4E-07

The provided data again indicate that HIs estimated due to exposure to site soils for the adult and child residents have decreased by 80% to 90% and are both below the USEPA's accepted level of 1. The estimated cancer risk for the lifetime resident due to exposure to site soils has increased over prior RI estimated levels, but is still less than the USEPA's upper carcinogenic risk limit (i.e., 1×10^{-4}), but above the USEPA's preferred lower limit of 1×10^{-6}.

The increased cancer risk levels that are now estimated for the lifetime resident, current site worker, the future outdoor park worker, and the future child residential visitor to the Disposal Pit C area are primarily associated with each receptor's ingestion and inhalation of soil that contains alpha-BHC. Alpha-BHC was found in four soil samples (three sidewall and one perimeter sample) at the conclusion of the removal action, and each of these samples was collected from Disposal Pit C2 near the northern end of the excavation. Excavations performed in this portion of Pit C2 extended to depths greater than 10 or 11 feet below grade, with surrounding slope stabilization benches set at levels that were between 3 and 6 feet below grade. Normally analytical results for soils collected at these depths are excluded from datasets that are assembled for resident and non-construction worker receptor scenario evaluations, as typically these types of receptors do not have repetitive, long-term exposures to buried soils. If the risk associated with the ingestion and inhalation of alpha-BHC was eliminated from each of these risk calculations, the lifetime resident's carcinogenic risk due to soil exposure would drop to 1.0×10^{-6}, which is at the USEPA's preferred lower carcinogenic risk limit. Comparably, the carcinogenic risk levels for each of the other receptors would decrease to levels within or below the USEPA's risk management range (i.e., 1×10^{-4} to 1×10^{-6}).

The excavation at Pit C2 was not backfilled with borrow material at the conclusion of the removal action; instead the area was filled using available surrounding soils. Therefore as a conservative measure, soil risks for each receptor were assessed versus the total soil dataset that was assembled at the outset of the risk assessment update. Furthermore, the maximum detected concentration (210 µg/kg) was used as the EPC evaluated for alpha-BHC in the risk assessment, and using the maximum concentration also adds to the conservatism of the updated risk assessment.

7.2 Risk Characterization Results – Other Media

Non-carcinogenic hazard and carcinogenic risk levels predicted to results due to these media due to inhalation of groundwater, ingestion of groundwater, dermal contact with groundwater, dermal contact with surface water, ingestion of sediment, and dermal contact with sediment are identified in **Attachment D**, **Tables 4** through **9**, respectively.

7.3 Overall Site Risks due to Chemical Contaminants

7.3.1 Disposal Pit A/B

7.3.1.1 Conservation/Recreational Receptors

The table presented below summarizes the calculated reasonable maximum exposure carcinogenic risks and the non-carcinogenic hazard indices for conservation/recreational receptor due to all chemical exposure scenarios considered in this risk assessment for Disposal Pits A/B. Comparative risk assessment results are also presented from the 2002 RI risk assessment for chemical contaminants.

	Removal Action Risk Levels		**RI Risk Levels**	
Receptor	**Hazard Index**	**Cancer Risk**	**Hazard Index**	**Cancer Risk**
Current Site Worker	2.1E-04	3.6E-08	3.E-03	5E-08
Outdoor Park Worker	1.2E-01	2.0E-05	9E-02	2E-05
Recreational Child Visitor	3.1E-01	2.0E-05	3E-01	2E-05
Construction Worker	1.1E-02	4.7E-08	1E-01	1E-07

Current Site Worker

Three chemical exposure routes were evaluated for the site worker. The total cancer risk from all chemical exposure routes is below the USEPA target range for the RME. Likewise, the total non-cancer hazard index from all exposure routes is less than one for the RME. Carcinogenic risk and non-carcinogenic hazard levels reported at the end of the RA are lower than those reported at the conclusion of the RI.

Future Outdoor Park Worker

Six chemical exposure routes were evaluated for the outdoor park worker. The total cancer risk from all chemical exposure routes is within the USEPA target range for the RME. The total non-cancer hazard index from all exposure routes is less than one for the RME. The non-carcinogenic hazard level is slightly higher than was calculated at the time of the RI risk assessment, with noted increases due to the dermal contact with surface water and the ingestion of groundwater. The ingestion of cobalt in groundwater is the major contributor to the non-carcinogenic hazard increase noted between the RI and the RA and results from the fact that this effect was not quantified in the earlier risk calculation.

Future Recreational Visitor (Child)

Eight chemical exposure routes were evaluated for the child recreational visitor. The total cancer risk from all chemical exposure routes is within the USEPA target range for the RME. The total non-cancer hazard index from all exposure routes is less than one for the RME. Calculated non-carcinogenic hazard and carcinogenic risk levels are generally consistent with those reported at the end of the RI.

Future Construction Worker

Three chemical exposure routes were evaluated for the construction worker. The total cancer risk from all chemical exposure routes is below the USEPA target range for the RME. Likewise, the total non-cancer hazard index from all exposure routes is less than one for the RME. Carcinogenic risk and non-carcinogenic hazard levels reported at the end of the RA are lower than those reported at the conclusion of the RI.

7.3.1.2 Residential Receptors

	Removal Action Risk Levels		RI Risk Levels	
Receptor	**Hazard Index**	**Cancer Risk**	**Hazard Index**	**Cancer Risk**
Adult Resident	9.6E-01	--	7E-01	--
Child Resident	2.8E+00	--	2E+00	--
Lifetime Resident	--	7.0E-04	--	7E-04

Future Resident

Nine chemical exposure routes were evaluated for the future resident. For the RME, the total cancer risk from all chemical exposure routes, 7.0×10^{-4}, exceeds the USEPA target range. The total non-cancer hazard index from all chemical exposure routes for the adult resident is below, while the child resident's hazard index exceeds (HI = 2.8), USEPA's preferred limit of 1. Reported carcinogenic risk levels reported for the lifetime resident are consistent with those reported at the completion of the RI, while the non-carcinogenic hazard indices for both the adult and the child resident have increased since the completion of the risk assessment in the RI.

Dermal Contact with groundwater and surface water are the exposure routes responsible for the calculated RME cancer risk. The chemical that drives both of the noted carcinogenic risk levels is benzo(a)pyrene: cancer risk for dermal contact to groundwater equals 3.3×10^{-4}; cancer risk for dermal contact to surface water equals 2.2×10^{-4}.

The adult and child resident's elevated HI are primarily driven by dermal contact with surface water, with other significant impacts from ingestion of groundwater, and lesser contributions from dermal contact and inhalation of with groundwater. The non-carcinogenic hazard quotient due to the presence of chrysene in surface water is the contaminant most responsible for the noted HI increases; chrysene impact was not quantified in the RI because no dermal RfD was identified. The noted hazard indices increase for the adult and child resident is due to ingestion of cobalt in the

groundwater, which was not quantified in the RI risk assessment. The noted increase in the HI levels due to dermal contact with groundwater is also attributable to cobalt.

7.3.2 Disposal Pit C (C1 and C2)

7.3.2.1 Conservation/Recreational Receptors

The next table summarizes the calculated reasonable maximum exposure carcinogenic risks and the non-carcinogenic hazard indices for conservation/recreational receptor due to all chemical exposure scenarios considered in this risk assessment for Disposal Pits A/B. Comparative risk assessment results are also presented from the 2002 RI risk assessment for chemical contaminants.

	Removal Action Risk Levels		**RI Risk Levels**	
Receptor	**Hazard Index**	**Cancer Risk**	**Hazard Index**	**Cancer Risk**
Current Site Worker	2.6E-04	2.2E-07	1.E-03	2E-08
Outdoor Park Worker	1.2E-01	2.2E-05	8E-02	2E-05
Recreational Child Visitor	3.1E-01	2.0E-05	2E-01	2E-05
Construction Worker	1.0E-02	1.7E-07	6E-02	1E-07

Current Site Worker

Three chemical exposure routes were evaluated for the current site worker at Pit C. The total cancer risk from all chemical exposure routes is below the USEPA's target range of $1 \times 10^{-4} - 1 \times 10^{-6}$, based on a RME. Likewise, the total non-cancer hazard index from all exposure routes is less than 1. The carcinogenic risk level reported at the end of the RA is higher than comparable values reported at the conclusion of the RI. The primary driver contributing to the increase in the carcinogenic risk dermal contact with soil that contains alpha- and beta-BHC; potential carcinogenic risk due to contact with these pesticides were not quantified during the RI risk evaluation. The post-RA non-carcinogenic hazard index for the current site worker is lower than the one determined during the RI risk assessment.

Future Outdoor Park Worker

Six chemical exposure routes were evaluated for the outdoor park worker at Pit C. The total cancer risk from all chemical exposure routes is within the USEPA's target range for the RME. The total non-cancer hazard index from all exposure routes is less than 1 for the RME. The post-RA non-carcinogenic hazard level is slightly higher than was calculated at the time of the RI, with noted increases due to the dermal contact with surface water and the ingestion of groundwater. The ingestion of cobalt in groundwater is the major contributor to the non-carcinogenic hazard increase noted between the RI and the RA and results from the fact that this effect was not quantified in the earlier risk calculation. Dermal contact with chrysene in surface water is the major contributor to this noted shift between the post-RA and post-RI results, as this effect was not quantified during the earlier risk evaluation.

Future Recreational Visitor (Child)

Eight chemical exposure routes were evaluated for the child recreational visitor at Pit C. The total cancer risk from all chemical exposure routes is within the USEPA's target range for the RME. The total non-cancer hazard index from all exposure routes is less than one for the RME. Calculated non-carcinogenic hazard and carcinogenic risk levels are generally consistent with those reported at the end of the RI, with the small increase noted in the HI level being attributable to dermal contact with chrysene in surface water that was not quantified during the RI.

Future Construction Worker

Three chemical exposure routes were evaluated for the future construction worker at Pit C. The total cancer risk from all chemical exposure routes is below the USEPA's target range for the RME. Likewise, the total non-cancer hazard index from all exposure routes is less than one for the RME. Carcinogenic risk and non-carcinogenic hazard levels reported at the end of the RA are lower than those reported at the conclusion of the RI.

7.3.2.2 Residential Receptors

	Removal Action Risk Levels		RI Risk Levels	
Receptor	**Hazard Index**	**Cancer Risk**	**Hazard Index**	**Cancer Risk**
Adult Resident	9.6E-01	--	7E-01	--
Child Resident	2.8E+00	--	2E+00	--
Lifetime Resident	--	7.0E-04	--	7E-04

Future Resident

Nine chemical exposure routes were evaluated for the future resident. For the RME, the total cancer risk from all chemical exposure routes, 7.0×10^{-4}, exceeds the USEPA target range. The total non-cancer hazard index from all chemical exposure routes for the adult resident is below, while the child resident's hazard index exceeds (HI = 2.8), USEPA's preferred limit of 1. Reported carcinogenic risk levels reported for the lifetime resident are consistent with those reported at the completion of the RI, while the non-carcinogenic hazard indices for both the adult and the child resident have increased since the completion of the risk assessment in the RI.

Dermal Contact with groundwater and surface water are the exposure routes responsible for the calculated RME cancer risk. The chemical that drives both of the noted carcinogenic risk levels is benzo(a)pyrene: cancer risk for dermal contact to groundwater $= 3.3 \times 10^{-4}$; cancer risk for dermal contact to surface water 2.2×10^{-4}.

The adult and child resident's elevated HIs are primarily driven by dermal contact with surface water, with other impacts from ingestion of groundwater, and lesser contributions from dermal contact and inhalation of with groundwater. The quantitation of a non-carcinogenic hazard quotient due to the presence of chrysene in surface water is the contaminant most responsible for the noted HI increases; chrysene impact was not quantified in the RI because no dermal RfD was identified. The noted

hazard indices increase for the adult and child resident is due to ingestion of cobalt in the groundwater, which was not quantified in the RI risk assessment. The noted increase in the HI levels due to dermal contact with groundwater is also attributable to cobalt.

The reader is cautioned that the cancer risk values attributed to benzo(a)pyrene due to dermal contact with water are highly uncertain and may grossly overestimate actual risks. In groundwater this compound was detected in only two wells during the same sampling event and was not confirmed during the second round of groundwater sampling (i.e. results were non detect for this compound). In both cases, the reported concentration was a very low estimated value, lower than the quantitation limit for the samples. In surface water this compound was detected in one sample during the ESI study phase; the compound was not detected during the RI study phase. Therefore, it is highly unlikely that the compound is pervasive in either groundwater or surface water across SEAD-12, and it is possible that the detections were analytical artifacts associated with the laboratory's effort to identify and semi-quantify compounds at very low concentrations. Also, in "Dermal Exposure Assessment: Principals and Applications", USEPA warns that its exposure assessment method for dermal contact with water during showering may yield seemingly unreasonable (i.e., counterintuitive) results. For instance, the absorbed dose due to dermal contact may exceed the dose received by direct ingestion of the same water. This was the case for benzo(a)pyrene in groundwater at SEAD-12.

7.4 Risk Characterization Results for Lead Exposures

Determination of receptor exposure to lead was not performed as part of this risk assessment since lead was not identified as a contaminant of concern in any of the datasets analyzed during this assessment.

8.0 Uncertainty Assessment

All risk assessments involve the use of assumptions, judgments, and imperfect data to varying degrees. This results in uncertainty in the final estimates of risk. There are uncertainties associated with each component of the risk assessment from data collection through risk characterization. For example, there is uncertainty in the initial selection of substances used to characterize exposures and risk on the basis of the sampling data and available toxicity information. Other sources of uncertainty are inherent in the toxicity values for each substance and the exposure assessments used to characterize risk. Finally, additional uncertainties are incorporated into the risk assessment when exposures to several substances across multiple pathways are summed. Areas of uncertainty in each risk assessment step are discussed below.

8.1 Uncertainty in Data Collection and Evaluation

Uncertainties in the data collection/evaluation step of the risk assessment focus on determining whether enough samples were collected to characterize the risk, and if sample analyses were conducted in a qualified manner to maximize the confidence in the results. Results of the sample analyses were used to develop a database that includes a complete list of the chemicals by media and their representative concentrations used in the risk assessment. The sampling and analysis for this risk assessment included soil, surface water, sediment, and groundwater components of the

comprehensive RI effort that was undertaken at the site in the 1998 to 2002 timeframe, and focused confirmational soil sampling that took place as part of the RA. Therefore, the samples collected and characterized were not collected randomly but were collected either from areas of the site known or suspected to be to be contaminated (RI samples) or from areas the sampling and analysis effort focused on the attainment of an acceptable cleanup level. This type of non-random sampling biases the data collected, in the case of the RI toward overestimating chemical concentrations from the site, as opposed to the RA sampling where lesser levels of contamination are sought.

The judgmental bias in the sample collection also limits the applicability of statistics to the database. Because the statistics used to calculate the upper limit of the 95th-percentile confidence interval assume that the data represents a randomly distributed population, and the database does not, there is inherent uncertainty in the application of statistics. Collection of non-random, judgmental samples was necessary to characterize the nature and extent of contamination that is an objective of the site investigations and actions.

All chemicals detected that were potentially site-related were retained in this assessment. Chemicals that were never detected were eliminated from the assessment. This practice may slightly underestimate risks due to low levels (i.e., below the sample quantitation limit) of eliminated chemicals. Since the RI samples were collected at areas where concentrations were expected to be high, it is very unlikely that any chemicals were present at the site at health-significant levels and not detected in at least one sample. However, if this did occur, this assumption will underestimate risk. The 95th UCLs were used to calculate site-related risks. Since that assumption implies chronic exposure to the 95th UCL concentration, this assumption is likely to overestimate risk.

For surface water, sediment, and groundwater data collected during the RI, if a chemical was detected, it was retained in the risk assessment regardless of how frequently it was detected. To calculate the upper limit of the 95th-percentile confidence interval, chemicals were assumed present in all samples in a media. When the chemical was not detected in a sample, one-half of the SQL was used. Especially for chemicals that were detected in only a few samples, the upper limit of the 95th-percentile confidence interval probably greatly overestimates the amount of the chemical present and, consequently, the risk from the chemical.

Comparatively, all soil data collected during the RI and RA and used to comprise the dataset for the risk evaluation, if a chemical was detected, it was retained in the risk assessment regardless of how frequently it was detected. The EPC for this media was based on the USEPA's ProUCL software package, from which either the highest of the recommended UCL values was used as the EPC, or in the event that the recommended UCL value exceeded the maximum detected at the site, the maximum was substituted in its place. This computational and selection process probably leads to the overestimation of the chemical present and, consequently, the risk predicted from the chemical in soil.

The database also includes a number of data validation flags, indicating uncertainty in the reliability of the performance of the analyses done by the laboratory. Flagged data were retained following RAGS guidance.

8.2 Uncertainty in Exposure Assessment

There are inherent uncertainties in predicting future land uses and future chemical concentrations. Future land use scenarios were based on current plans for redevelopment of this portion of SEDA. Current land uses were identified by characterizing the site's physical setting.

A large part of the risk assessment is the estimation of risks for a broad set of exposure scenarios and pathways. If exposure does not occur, no risks are present. This assessment does not factor in the probability of the exposure occurring. For certain pathways, exposure may be extremely unlikely. For example, the future park worker, the future recreational visitor and the future resident all are assumed to ingest groundwater under exposure pathways assessed even though it is unlikely that such future use will ever be needed or realized due to the presence of an alternative, non-groundwater derived source of potable water at the site.

Once pathways are identified, exposure point concentrations must be estimated. There is always some doubt as to how well an exposure model approximates the actual conditions receptors will be exposed to at a given site. Key assumptions in estimating exposure point concentrations and exposure assumptions and their potential impact on the assessment are described in the following paragraphs.

As summarized in **Attachment C**, **Tables 1** though **6**, there are many factors that determine the level of exposure for each exposure pathway. These factors include inhalation rates, ingestion rates, exposure frequencies, exposure durations, body weight, etc. The values for these exposure factors must be selected by the risk assessor to represent each receptor. For the RME scenarios particularly, upper bound values were selected for each exposure factor. In the calculations of RME exposure, these multiple upper-bound exposure factor estimates compound to yield intakes and absorbed doses that overestimate likely exposure levels.

There is further uncertainty in the quantitative dermal exposure assessments for soil and sediment, since these assessments have been limited to just five compounds with credible dermal absorption factors. Many other compounds were measured in soil and sediment that might be absorbed through the skin, although reliable quantitative absorption factors are not available. Ignoring this larger group of chemicals results in quantitative exposure estimates (absorbed doses), which underestimate the true potential exposures from dermal contact. Consequently, any risk associated with these compounds is also underestimated.

There is considerable uncertainty in the quantitative dermal exposure assessments for surface water (during swimming or wading) and groundwater (during showering). EPA has cautioned that its recommended approach for calculating dermal exposures to organic chemicals in water may be overly conservative. USEPA expressed concern that for some compounds its model estimates absorbed dose from dermal exposure during showering that are much greater than the dose from ingestion of 2 L/day of water. USEPA further states that model validation is difficult due to a lack of data. This effect is most notable for compound with high estimated Kp values (Kp > 0.1 cm/hr), such as PCBs and PAHs. Consequently, risks associated with these compounds may be overestimated.

There is also uncertainty associated with using oral toxicity values to calculate dermal risks. As seen in the literature, there are differences between oral and inhalation absorption efficiencies. These differences vary and will likely cause either underestimation or overestimation of dermal risks. The efficiencies are generally within 1 order of magnitude of each other, so the uncertainty introduced is less than 1 order of magnitude.

The EPCs derived from the measured chemical concentrations are assumed to persist without change for the entire duration of each exposure scenario. It is likely that some degradation would occur over time, particularly for some of the organic compounds that would reduce the current concentrations. Therefore, this steady state assumption tends to overestimate exposure levels.

8.3 Uncertainty in Toxicity Assessment

Of the chemicals of potential concern, a number had no reference dose or slope factors. Several of these compounds have toxicity information such as weight of evidence classification indicating a strong potential for adverse health effects, particularly lead. The absence of toxicity values of these chemicals tends to underestimate risks.

There is considerable uncertainty inherent in the toxicity values for both carcinogens and noncarcinogens. Many of the studies are based on animals and extrapolated to humans, and in some cases, subchronic studies must be used to assess chronic effects. Most cancer slope factors are calculated using a model that extrapolates low dose effects from high dose animal studies. Because toxicity constants are generally based on the upper limit of the 95th-percentile confidence interval or incorporate safety factors to compensate for uncertainty, chemical-specific risks may be overestimated.

Toxicity information was not available for dermal exposure; hence, several assumptions had to be made which may tend to over- or underestimate risk. Oral toxicity values were used without adjustment to calculate risks from dermal exposure because the EPA has not derived toxicity values for this route of exposure. However, values found in the literature (Owen, 1990) indicate that the uncertainty associated with using oral absorption to estimate dermal absorption is likely less than one order of magnitude. This is due to the lack of scientific studies available to quantify dermal toxicity and carcinogenic potential for the vast majority of priority pollutants and because chemical specific information needed to convert ingested dose to absorbed dose is not available.

8.4 Uncertainty in Risk Characterization

Uncertainties in the toxicity assessment are compounded under the assumption of dose additivity for multiple substance exposure. That assumption ignores possible synergisms and antagonisms among chemicals, and assumes similarity in mechanisms of action and metabolism. Synergism is the amplification of one chemical's toxic effect by the presence of a second chemical. For example, it is known that smokers also exposed to asbestos have higher lung cancer incidence than either smokers or asbestos workers alone. Ignoring synergism to the extent that it may occur at environmental levels tends to underestimate risk. Antagonism is the reduction of one chemical's toxic effect by the presence of a second chemical. For example, certain foods (such as broccoli) contain chemicals

believed to be anti-carcinogenic. Ignoring antagonism tends to overestimate risk. Risks summed for chemicals having various weight-of-evidence classifications as well as different target organs may also tend to overestimate risk.

8.5 Uncertainty Pertaining to Dermal Risks from PAHs in Water

There is considerable uncertainty associated specifically with dermal exposures PAHs in groundwater and surface water at SEAD-12. Areas of uncertainty are discussed below:

1. Low frequency of detection. Benzo(a)pyrene was detected in just two of 89 groundwater samples and one of 52 surface water samples. The statistical treatment of these datasets to develop EPCs is highly uncertain, since it is dominated by "non-detect" values and the underlying distributions cannot be determined. Potential exposures to compounds detected so sporadically cannot be characterized with confidence.

2. Compound detected in one of two sampling rounds. Benzo(a)pyrene in groundwater was detected in just one of two sampling rounds from the same two set of wells. Therefore, its presence is unconfirmed in the second set of tests. Benzo(a)pyrene in surface water was detected in the first study phase, the ESI, but not in the second study, the RI.

3. Concentrations reported below the Sample Quantitation Limit (SQL). The detected results for benzo(a)pyrene in both groundwater and surface water were estimated values below the SQL. Identification and quantitation near the analytical detection is highly uncertain, and these results may be artifacts of the analytical process.

4. Dermal exposure modeling is highly uncertain. EPA believes that its recommended model for estimating absorbed doses of organic compounds from dermal contact with water may overestimate true potential doses, with factors used here being even more conservative than recent guidance. This would tend to further discount the risk associated with dermal exposure to benzo(a)pyrene (future risk assessment calculations will utilize the lower adherence factor values). Absorbed doses from dermal exposure that greatly exceed the ingestion dose from the same water are counterintuitive and do not appear to be realistic. The model has not been adequately validated.

9.0 Conclusion

The update of the risk assessment based on the analysis and inclusion of confirmatory soil samples collected during the removal action along with other historic site soil samples that remain in proximity to the former burial sites indicates that there is no unacceptable levels of carcinogenic risk or non-carcinogenic hazards associated with the levels of chemicals that are now documented to remain in the soil at the locations of former Disposal Pits A/B and C. Therefore, the levels of risk that remain at the site of the excavations are equivalent to those previously identified during the Remedial Investigation of SEAD-12, which were previously accepted by the agencies based on the risk management and uncertainty discussion presented in the SEAD-12 Remedial Investigation Report.

10.0 References

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TABLES

Table 1
Status of SEAD-12 RI Soil Samples Associated Previously Used for RI Risk Assessment

Seneca Army Depot Activity
Romulus, NY

Location ID	Sample ID	Pit	Sample Depth (ft)	Currect Location Status	Final Deposition	Data Status
MW12-10	123007	AB	0-0.2	Outside Excavation	Retained	Used
MW12-10	123008	AB	4-5.7	Outside Excavation	Retained	Used
MW12-10	123009	AB	8-9.8	Outside Excavation	Retained	Used
MW12-11	123010	AB	0-0.2	Outside Excavation	Retained	Used
MW12-11	123011	AB	4-5.6	Outside Excavation	Retained	Used
MW12-11	123012	AB	8-10	Outside Excavation	Retained	Used
MW12-12	123013	AB	0-0.2	Outside Excavation	Retained	Used
MW12-12	123014	AB	4-6	Outside Excavation	Retained	Used
MW12-12	123015	AB	9-11	Outside Excavation	Retained	Used
MW12-13	123016	AB	0-0.2	Outside Excavation	Retained	Used
MW12-13	123017	AB	4-6	Outside Excavation	Retained	Used
MW12-13	123018	AB	8-9.6	Outside Excavation	Retained	Used
MW12-8	123183	AB	0-0.2	Within Excavation	Retained	Used
MW12-8	123184	AB	4-6	Outside Excavation	Retained	Used
MW12-8	123185	AB	8-10	Outside Excavation	Retained	Used
SB12-1	12209	AB	0-0.2	Excavated	Overburden C1 Stockpile (1)	Re-Analyzed (2)
SB12-1	12534	AB	0-0.2	Excavated	Overburden C1 Stockpile (1)	Re-Analyzed (2)
SB12-2	12531	AB	0-0.2	Excavated	Overburden C1 Stockpile (1)	Re-Analyzed (2)
SB12-2	12532	AB	0.2-2	Excavated	Overburden C1 Stockpile (1)	Re-Analyzed (2)
SB12-2	123113	AB	6-8	Within Excavation	Retained	Used
SB12-2	12533	AB	8-10	Within Excavation	Retained	Used
SB12-2	123114	AB	10-12	Within Excavation	Retained	Used
SB12-2B	123064	AB	0-0.2	Excavated	Overburden C1 Stockpile (1)	Re-Analyzed (2)
SB12-3	12524	AB	0-0.2	Excavated	Overburden C1 Stockpile (1)	Re-Analyzed (2)
SB12-3	12525	AB	1-4	Excavated	Overburden C1 Stockpile (1)	Re-Analyzed (2)
SB12-3	12527	AB	8-10	Excavated	Landfilled	Eliminated
SB12-3	12526	AB	10-11.9	Excavated	Landfilled	Eliminated
SB12-4	12530	AB	0-0.2	Excavated	Overburden C1 Stockpile (1)	Re-Analyzed (2)
SB12-4	12528	AB	2-4	Within Excavation	Retained	Used
SB12-4	12529	AB	4-6	Within Excavation	Retained	Used
SS12-15	123211	AB	0-0.2	Excavated	Overburden C1 Stockpile (1)	Re-Analyzed (2)
SS12-16	123102	AB	0-0.2	Excavated	Overburden C1 Stockpile (1)	Re-Analyzed (2)
SS12-17	123212	AB	0-0.2	Excavated	Overburden C1 Stockpile (1)	Re-Analyzed (2)
SS12-183	123377	AB	0-0.2	Excavated	Overburden C1 Stockpile (1)	Re-Analyzed (2)
TP12-1A	123142	AB	0.5-0.5	Excavated	Overburden C1 Stockpile (1)	Re-Analyzed (2)
TP12-1B	123143	AB	3-3	Within Excavation	Retained	Used
TP12-1C	123144	AB	6-6	Within Excavation	Retained	Used
TP12-2A	123145	AB	3-3	Within Excavation	Retained	Used
TP12-2B	123146	AB	3.5-3.5	Within Excavation	Retained	Used
TP12-2C	123147	AB	6-6	Within Excavation	Retained	Used
TP12A-1	TP12A-1-1	AB	2.5-2.5	Excavated	Landfilled	Eliminated
TP12A-1	TP12A-1-2	AB	3-3	Excavated	Landfilled	Eliminated
TP12A-2	TP12A-2-2	AB	5-5	Excavated	Landfilled	Eliminated
TP12A-2	TP12A-2-1	AB	6-6	Excavated	Landfilled	Eliminated
MW12-33	123195	C1	0-0.2	Excavated	Overburden C1 Stockpile (1)	Re-Analyzed (2)
MW12-33	123196	C1	6-8	Within Excavation	Retained	Used
MW12-33	123197	C1	10-0	Within Excavation	Retained	Used
MW12-34	123198	C1	0-0.2	Excavated	Overburden C1 Stockpile (1)	Re-Analyzed (2)
MW12-34	123199	C1	4-6	Excavated	Landfilled	Eliminated
MW12-34	123200	C1	10-12	Within Excavation	Retained	Used

Table 1
Status of SEAD-12 RI Soil Samples Associated Previously Used for RI Risk Assessment

Seneca Army Depot Activity
Romulus, NY

Location ID	Sample ID	Pit	Sample Depth (ft)	Currect Location Status	Final Deposition	Data Status
SS12-150	123345	C1	0-0.2	Outside Excavation	Retained	Used
SS12-155	123350	C1	0-0.2	Outside Excavation	Retained	Used
SS12-155	123479	C1	0-0.2	Outside Excavation	Retained	Used
TP12-23A	123139	C1	1-1	Excavated	Overburden C1 Stockpile (1)	Re-Analyzed (2)
TP12-23B	123140	C1	2-2	Within Excavation	Retained	Used
TP12-23C	123141	C1	3-3	Within Excavation	Retained	Used
TP12-5A	123089	C1	0.5-0.5	Excavated	Overburden C1 Stockpile (1)	Re-Analyzed (2)
TP12-5A	123092	C1	0.5-0.5	Excavated	Overburden C1 Stockpile (1)	Re-Analyzed (2)
TP12-5B	123090	C1	2-2	Excavated	Overburden C1 Stockpile (1)	Re-Analyzed (2)
TP12-5C	123091	C1	8-8	Within Excavation	Retained	Used
TP12-7AA	123128	C1	1-1	Excavated	Overburden C1 Stockpile (1)	Re-Analyzed (2)
TP12-7BA	123127	C1	1-1	Excavated	Overburden C1 Stockpile (1)	Re-Analyzed (2)
TP12-7BB	123129	C1	2-2	Excavated	Overburden C1 Stockpile (1)	Re-Analyzed (2)
TP12-8A	123130	C1	1-1	Excavated	Overburden C1 Stockpile (1)	Re-Analyzed (2)
TP12-8B	123132	C1	3-3	Excavated	Overburden C1 Stockpile (1)	Re-Analyzed (2)
TP12-8C	123131	C1	2-2	Excavated	Landfilled	Eliminated
TP12A-5	TP12A-5-1	C1	3-3	Excavated	Landfilled	Eliminated
TP12A-6	TP12A-6-1	C1	1-1	Excavated	Overburden C1 Stockpile (1)	Re-Analyzed (2)
TP12A-6	TP12A-6-2	C1	7-7	Within Excavation	Retained	Used
TP12A-7	TP12A-7-1	C1	4-4	Excavated	Landfilled	Eliminated
TP12A-8	TP12A-8-1	C1	7-7	Outside Excavation	Retained	Used
MW12-14	123099	C2	0-0.2	Outside Excavation	Retained	Used
MW12-14	123100	C2	8-10	Outside Excavation	Retained	Used
MW12-14	123101	C2	10-12	Outside Excavation	Retained	Used
MW12-15	123028	C2	0-0.2	Excavated	Overburden C1 Stockpile (1)	Re-Analyzed (2)
MW12-15	123029	C2	6-8	Excavated	Landfilled	Eliminated
MW12-15	123030	C2	8-10	Retained	Landfilled	Eliminated
MW12-7	123180	C2	0-0.2	Outside Excavation	Retained	Used
MW12-7	123181	C2	4-6	Outside Excavation	Retained	Used
MW12-7	123182	C2	8-10	Outside Excavation	Retained	Used
SS12-18	123103	C2	0-0.2	Excavated	Overburden C1 Stockpile (1)	Re-Analyzed (2)
TP12-3A	123082	C2	0.8-0.8	Excavated	Overburden C1 Stockpile (1)	Re-Analyzed (2)
TP12-3A	123085	C2	0.8-0.8	Excavated	Overburden C1 Stockpile (1)	Re-Analyzed (2)
TP12-3B	123083	C2	5.5-5.5	Excavated	Landfilled	Eliminated
TP12-3C	123084	C2	4-4	Excavated	Landfilled	Eliminated
TP12-4A	123086	C2	0.5-0.5	Excavated	Overburden C1 Stockpile (1)	Re-Analyzed (2)
TP12-4B	123087	C2	6-6	Excavated	Landfilled	Eliminated
TP12-4C	123088	C2	8-8	Excavated	Landfilled	Eliminated
TP12-6A	123158	C2	2.5-2.5	Outside Excavation	Retained	Used
TP12-6B	123159	C2	3-3	Outside Excavation	Retained	Used
TP12-6C	123160	C2	3.5-3.5	Outside Excavation	Retained	Used
TP12A-3	TP12A-3-1	C2	2.5-2.5	Excavated	Landfilled	Eliminated
TP12A-3	TP12A-3-2	C2	6-6	Excavated	Landfilled	Eliminated
TP12A-4	TP12A-4-1	C2	4-4	Excavated	Landfilled	Eliminated
TP12A-4	TP12A-4-2	C2	4-4	Excavated	Landfilled	Eliminated

Notes:
(1) Material within depth range that have been free of debris and therefore recovered for potential use as backfill.
(2) Overburden/C1 soil sampled and analyzed, and reused as backfill for Pit A/B based on new data.
Old data for RI samples eliminated from soil data set.

TABLE 2 (Disposal Pits A/B)
CALCULATION OF TOTAL NONCARCINOGENIC AND CARCINOGENIC RISKS
REASONABLE MAXIMUM EXPOSURE (RME) - SEAD-12
SEAD- 12 Construction Completion Report
Seneca Army Depot Activity

RECEPTOR	EXPOSURE ROUTE	EXPOSURE/RISK CALCULATIONS Table Number	HAZARD INDEX	CANCER RISK
CURRENT SITE WORKER	**Inhalation of Dust in Ambient Air**	**ATTACHMENT A** TABLE 5	**0.0E+00**	**1.7E-11**
	Ingestion of Soil	**ATTACHMENT A** TABLE 6	**1.8E-04**	**1.9E-08**
	Dermal Contact to Soil	**ATTACHMENT A** TABLE 7	**2.6E-05**	**1.7E-08**
	TOTAL RECEPTOR RISK (Nc & Car)		***2.1E-04***	***3.6E-08***
FUTURE OUTDOOR PARK WORKER	**Inhalation of Dust in Ambient Air**	**ATTACHMENT A** TABLE 5	**0.0E+00**	**1.2E-10**
	Ingestion of Soil	**ATTACHMENT A** TABLE 6	**1.6E-03**	**1.7E-07**
	Dermal Contact to Soil	**ATTACHMENT A** TABLE 7	**2.3E-04**	**1.5E-07**
	TOTAL RECEPTOR RISK (Nc & Car)		***1.8E-03***	***3.2E-07***
FUTURE RECREATIONAL\ VISITOR (CHILD)	**Inhalation of Dust Ambient Air**	**ATTACHMENT A** TABLE 5	**0.0E+00**	**9.9E-12**
	Ingestion of Soil	**ATTACHMENT A** TABLE 6	**1.2E-03**	**2.5E-08**
	Dermal Contact to Soil	**ATTACHMENT A** TABLE 7	**7.2E-05**	**9.2E-09**
	Inhalation of Ground Water	**ATTACHMENT C** TABLE 4	**3.7E-06**	**9.5E-10**
	TOTAL RECEPTOR RISK (Nc & Car)		***1.3E-03***	***3.6E-08***
FUTURE CONSTRUCTION WORKER	**Inhalation of Dust in Ambient Air**	**ATTACHMENT A** TABLE 5	**0.0E+00**	**7.4E-11**
	Ingestion of Soil	**ATTACHMENT A** TABLE 6	**1.1E-02**	**4.7E-08**
	Dermal Contact to Soil	**ATTACHMENT A** TABLE 7	**4.8E-04**	**1.2E-08**
	TOTAL RECEPTOR RISK (Nc & Car)		***1.1E-02***	***4.7E-08***

TABLE 2 (Disposal Pits A/B, cont.)
CALCULATION OF TOTAL NONCARCINOGENIC AND CARCINOGENIC RISKS
REASONABLE MAXIMUM EXPOSURE (RME) - SEAD-12
SEAD- 12 Construction Completion Report
Seneca Army Depot Activity

RECEPTOR	EXPOSURE ROUTE	EXPOSURE/RISK CALCULATIONS Table Number	ADULT HAZARD INDEX	CHILD HAZARD INDEX	LIFETIME CANCER RISK
FUTURE RESIDENT	**Inhalation of Dust in Ambient Air**	**ATTACHMENT A** TABLE 5	**0.0E+00**	**0.0E+00**	**8.8E-10**
	Ingestion of Soil	**ATTACHMENT A** TABLE 6	**3.2E-03**	**3.0E-02**	**1.1E-06**
	Dermal Contact to Soil	**ATTACHMENT A** TABLE 7	**2.7E-04**	**1.4E-04**	**3.9E-07**
	TOTAL RECEPTOR RISK (Nc & Car)		***3.5E-03***	***3.0E-02***	***1.5E-06***

TABLE 3 (Disposal Pit C)
CALCULATION OF TOTAL NONCARCINOGENIC AND CARCINOGENIC RISKS
REASONABLE MAXIMUM EXPOSURE (RME) - SEAD-12
SEAD- 12 Updated Risk Assessment
Seneca Army Depot Activity

RECEPTOR	EXPOSURE ROUTE	EXPOSURE/RISK CALCULATIONS Table Number	HAZARD INDEX	CANCER RISK
CURRENT SITE WORKER	**Inhalation of Dust in Ambient Air**	**Attachment B** TABLE 5	**0.0E+00**	**4.7E-11**
	Ingestion of Soil	**Attachment B** TABLE 6	**1.5E-04**	**3.1E-08**
	Dermal Contact to Soil	**Attachment B** TABLE 7	**1.1E-04**	**1.9E-07**
	TOTAL RECEPTOR RISK (Nc & Car)		**2.6E-04**	**2.2E-07**
FUTURE OUTDOOR PARK WORKER	**Inhalation of Dust in Ambient Air**	**Attachment B** TABLE 5	**0.0E+00**	**3.4E-10**
	Ingestion of Soil	**Attachment B** TABLE 6	**1.3E-03**	**2.7E-07**
	Dermal Contact to Soil	**Attachment B** TABLE 7	**9.6E-04**	**1.6E-06**
	TOTAL RECEPTOR RISK (Nc & Car)		**2.3E-03**	**1.9E-06**
FUTURE RECREATIONAL VISITOR (CHILD)	**Inhalation of Dust Ambient Air**	**Attachment B** TABLE 5	**0.0E+00**	**2.8E-11**
	Ingestion of Soil	**Attachment B** TABLE 6	**9.8E-04**	**4.0E-08**
	Dermal Contact to Soil	**Attachment B** TABLE 7	**1.4E-04**	**4.8E-08**
	TOTAL RECEPTOR RISK (Nc & Car)		**1.1E-03**	**8.8E-08**
FUTURE CONSTRUCTION WORKER	**Inhalation of Dust in Ambient Air**	**Attachment B** TABLE 5	**0.0E+00**	**2.1E-10**
	Ingestion of Soil	**Attachment B** TABLE 6	**9.0E-03**	**7.4E-08**
	Dermal Contact to Soil	**Attachment B** TABLE 7	**1.4E-03**	**9.3E-08**
	TOTAL RECEPTOR RISK (Nc & Car)		**1.0E-02**	**1.7E-07**

TABLE 3 (Disposal Pit C - cont.)
CALCULATION OF TOTAL NONCARCINOGENIC AND CARCINOGENIC RISKS
REASONABLE MAXIMUM EXPOSURE (RME) - SEAD-12
SEAD-12 Updated Risk Assessment
Seneca Army Depot Activity

RECEPTOR	EXPOSURE ROUTE	EXPOSURE/RISK CALCULATIONS Table Number	ADULT HAZARD INDEX	CHILD HAZARD INDEX	LIFETIME CANCER RISK
FUTURE RESIDENT	**Inhalation of Dust in Ambient Air**	**Attachment B** TABLE 5	**0.0E+00**	**0.0E+00**	**2.5E-09**
	Ingestion of Soil	**Attachment B** TABLE 6	**2.6E-03**	**2.5E-02**	**1.7E-06**
	Dermal Contact to Soil	**Attachment B** TABLE 7	**1.9E-03**	**3.5E-03**	**4.6E-06**
	TOTAL RECEPTOR RISK (Nc & Car)	**Attachment C**	***4.6E-03***	***2.8E-02***	***6.3E-06***

TABLE 4 (Disposal Pits A/B)
CALCULATION OF TOTAL NONCARCINOGENIC AND CARCINOGENIC RISKS
REASONABLE MAXIMUM EXPOSURE (RME) - SEAD-12
SEAD-12 Updated Risk Assessment
Seneca Army Depot Activity

RECEPTOR	EXPOSURE ROUTE	EXPOSURE/RISK CALCULATIONS Table Number	HAZARD INDEX	CANCER RISK
CURRENT SITE WORKER	**Inhalation of Dust in Ambient Air**	**ATTACHMENT A** TABLE 5	**0.0E+00**	**1.7E-11**
	Ingestion of Soil	**ATTACHMENT A** TABLE 6	**1.8E-04**	**1.9E-08**
	Dermal Contact to Soil	**ATTACHMENT A** TABLE 7	**2.6E-05**	**1.7E-08**
	TOTAL RECEPTOR RISK (Nc & Car)		***2.1E-04***	***3.6E-08***
FUTURE OUTDOOR PARK WORKER	**Inhalation of Dust in Ambient Air**	**ATTACHMENT A** TABLE 5	**0.0E+00**	**1.2E-10**
	Ingestion of Soil	**ATTACHMENT A** TABLE 6	**1.6E-03**	**1.7E-07**
	Dermal Contact to Soil	**ATTACHMENT A** TABLE 7	**2.3E-04**	**1.5E-07**
	Ingestion of Ground Water	**ATTACHMENT D** TABLE 5	**5.9E-02**	**2.2E-06**
	Dermal Contact to Surface Water	**ATTACHMENT D** TABLE 7	**6.0E-02**	**1.8E-05**
	Dermal Contact to Sediment	**ATTACHMENT D** TABLE 9	**6.4E-04**	**1.3E-07**
	TOTAL RECEPTOR RISK (Nc & Car)		***1.2E-01***	***2.0E-05***
FUTURE RECREATIONAL\ VISITOR (CHILD)	**Inhalation of Dust Ambient Air**	**ATTACHMENT A** TABLE 5	**0.0E+00**	**9.9E-12**
	Ingestion of Soil	**ATTACHMENT A** TABLE 6	**1.2E-03**	**2.5E-08**
	Dermal Contact to Soil	**ATTACHMENT A** TABLE 7	**7.2E-05**	**9.2E-09**
	Inhalation of Ground Water	**ATTACHMENT D** TABLE 4	**3.7E-06**	**9.5E-10**
	Ingestion of Ground Water	**ATTACHMENT D** TABLE 5	**2.2E-02**	**1.6E-07**
	Dermal Contact to Ground Water	**ATTACHMENT D** TABLE 6	**1.7E-02**	**4.3E-06**
	Dermal Contact to Surface Water	**ATTACHMENT D** TABLE 7	**2.5E-01**	**1.5E-05**
	Dermal Contact to Sediment	**ATTACHMENT D** TABLE 9	**1.3E-02**	**5.5E-07**
	TOTAL RECEPTOR RISK (Nc & Car)		***3.1E-01***	***2.0E-05***
FUTURE CONSTRUCTION WORKER	**Inhalation of Dust in Ambient Air**	**ATTACHMENT A** TABLE 5	**0.0E+00**	**7.4E-11**
	Ingestion of Soil	**ATTACHMENT A** TABLE 6	**1.1E-02**	**4.7E-08**
	Dermal Contact to Soil	**ATTACHMENT A** TABLE 7	**4.8E-04**	**1.2E-08**
	TOTAL RECEPTOR RISK (Nc & Car)		***1.1E-02***	***4.7E-08***

TABLE 4 (Disposal Pits A/B, cont.)
CALCULATION OF TOTAL NONCARCINOGENIC AND CARCINOGENIC RISKS
REASONABLE MAXIMUM EXPOSURE (RME) - SEAD-12
SEAD-12 Updated Risk Assessment
Seneca Army Depot Activity

RECEPTOR	EXPOSURE ROUTE	EXPOSURE/RISK CALCULATIONS Table Number	ADULT HAZARD INDEX	CHILD HAZARD INDEX	LIFETIME CANCER RISK
FUTURE RESIDENT	**Inhalation of Dust in Ambient Air**	**ATTACHMENT A** TABLE 5	**0.0E+00**	**0.0E+00**	**8.8E-10**
	Ingestion of Soil	**ATTACHMENT A** TABLE 6	**3.2E-03**	**3.0E-02**	**1.1E-06**
	Dermal Contact to Soil	**ATTACHMENT A** TABLE 7	**2.7E-04**	**1.4E-04**	**3.9E-07**
	Inhalation of Ground Water	**ATTACHMENT D** TABLE 4	**5.0E-05**	**1.5E-04**	**1.0E-07**
	Ingestion of Ground Water	**ATTACHMENT D** TABLE 5	**2.4E-01**	**5.5E-01**	**1.3E-05**
	Dermal Contact to Ground Water	**ATTACHMENT D** TABLE 6	**2.5E-01**	**4.2E-01**	**4.3E-04**
	Dermal Contact to Surface Water	**ATTACHMENT D** TABLE 7	**4.6E-01**	**1.6E+00**	**2.5E-04**
	Ingestion of Sediment	**ATTACHMENT D** TABLE 8	**1.0E-02**	**9.4E-02**	**2.8E-06**
	Dermal Contact to Sediment	**ATTACHMENT D** TABLE 9	**9.7E-04**	**8.6E-02**	**4.4E-06**
	TOTAL RECEPTOR RISK (Nc & Car)		***9.6E-01***	***2.8E+00***	***7.0E-04***

TABLE 5 (Disposal Pit C)
CALCULATION OF TOTAL NONCARCINOGENIC AND CARCINOGENIC RISKS
REASONABLE MAXIMUM EXPOSURE (RME) - SEAD-12
SEAD- 12 Updated Risk Assessment
Seneca Army Depot Activity

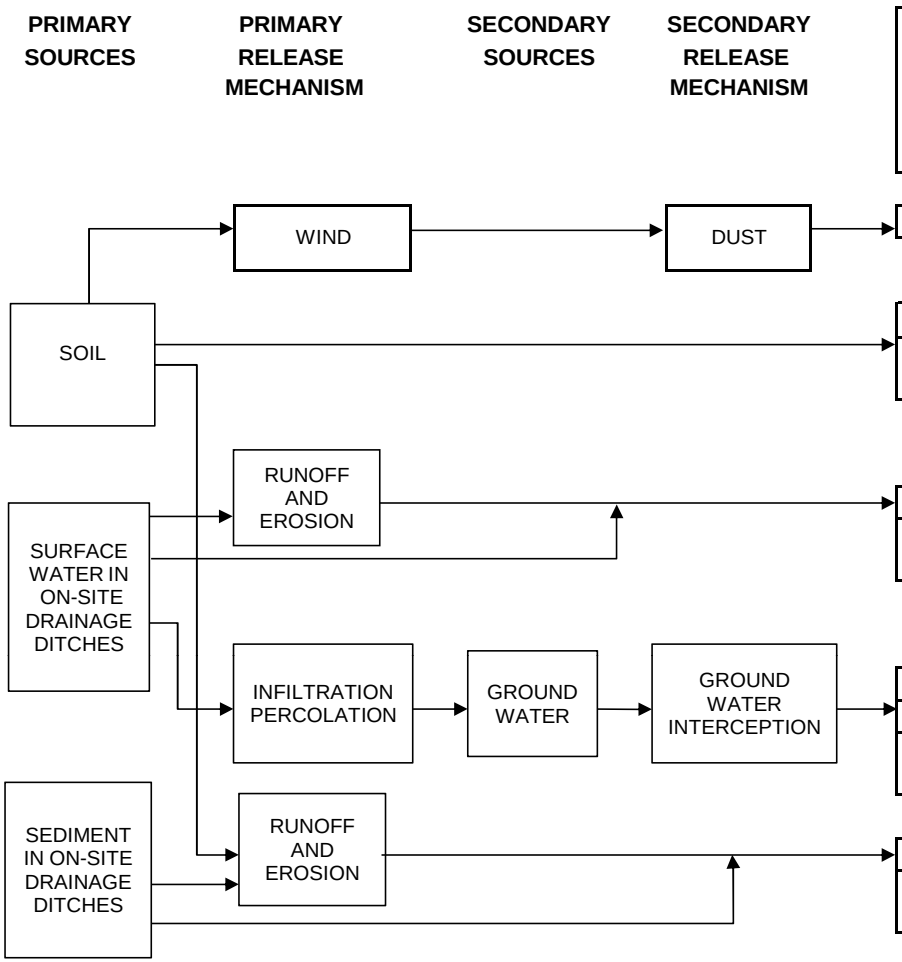
RECEPTOR	EXPOSURE ROUTE	EXPOSURE/RISK CALCULATIONS Table Number	HAZARD INDEX	CANCER RISK
CURRENT SITE WORKER	**Inhalation of Dust in Ambient Air**	**Attachment B** TABLE 5	**0.0E+00**	**4.7E-11**
	Ingestion of Soil	**Attachment B** TABLE 6	**1.5E-04**	**3.1E-08**
	Dermal Contact to Soil	**Attachment B** TABLE 7	**1.1E-04**	**1.9E-07**
	TOTAL RECEPTOR RISK (Nc & Car)		**2.6E-04**	**2.2E-07**
FUTURE OUTDOOR PARK WORKER	**Inhalation of Dust in Ambient Air**	**Attachment B** TABLE 5	**0.0E+00**	**3.4E-10**
	Ingestion of Soil	**Attachment B** TABLE 6	**1.3E-03**	**2.7E-07**
	Dermal Contact to Soil	**Attachment B** TABLE 7	**9.6E-04**	**1.6E-06**
	Ingestion of Ground Water	**Attachment D** TABLE 5	**5.9E-02**	**2.2E-06**
	Dermal Contact to Surface Water	**Attachment D** TABLE 7	**6.0E-02**	**1.8E-05**
	Dermal Contact to Sediment	**Attachment D** TABLE 9	**6.4E-04**	**1.3E-07**
	TOTAL RECEPTOR RISK (Nc & Car)		**1.2E-01**	**2.2E-05**
FUTURE RECREATIONAL VISITOR (CHILD)	**Inhalation of Dust Ambient Air**	**Attachment B** TABLE 5	**0.0E+00**	**2.8E-11**
	Ingestion of Soil	**Attachment B** TABLE 6	**9.8E-04**	**4.0E-08**
	Dermal Contact to Soil	**Attachment B** TABLE 7	**1.4E-04**	**4.8E-08**
	Inhalation of Ground Water	**Attachment D** TABLE 4	**3.7E-06**	**9.5E-10**
	Ingestion of Ground Water	**Attachment D** TABLE 5	**2.2E-02**	**1.6E-07**
	Dermal Contact to Ground Water	**Attachment D** TABLE 6	**1.7E-02**	**4.3E-06**
	Dermal Contact to Surface Water	**Attachment D** TABLE 7	**2.5E-01**	**1.5E-05**
	Dermal Contact to Sediment	**Attachment D** TABLE 9	**1.3E-02**	**5.5E-07**
	TOTAL RECEPTOR RISK (Nc & Car)		**3.1E-01**	**2.0E-05**
FUTURE CONSTRUCTION WORKER	**Inhalation of Dust in Ambient Air**	**Attachment B** TABLE 5	**0.0E+00**	**2.1E-10**
	Ingestion of Soil	**Attachment B** TABLE 6	**9.0E-03**	**7.4E-08**
	Dermal Contact to Soil	**Attachment B** TABLE 7	**1.4E-03**	**9.3E-08**
	TOTAL RECEPTOR RISK (Nc & Car)		**1.0E-02**	**1.7E-07**

TABLE 5 (Disposal Pit C - cont.)
CALCULATION OF TOTAL NONCARCINOGENIC AND CARCINOGENIC RISKS
REASONABLE MAXIMUM EXPOSURE (RME) - SEAD-12
SEAD-12 Updated Risk Assessment
Seneca Army Depot Activity

RECEPTOR	EXPOSURE ROUTE	EXPOSURE/RISK CALCULATIONS Table Number	ADULT HAZARD INDEX	CHILD HAZARD INDEX	LIFETIME CANCER RISK
FUTURE RESIDENT	**Inhalation of Dust in Ambient Air**	**Attachment B** TABLE 5	**0.0E+00**	**0.0E+00**	**2.5E-09**
	Ingestion of Soil	**Attachment B** TABLE 6	**2.6E-03**	**2.5E-02**	**1.7E-06**
	Dermal Contact to Soil	**Attachment B** TABLE 7	**1.9E-03**	**3.5E-03**	**4.6E-06**
	Inhalation of Ground Water	**Attachment D** TABLE 4	**5.0E-05**	**1.5E-04**	**1.0E-07**
	Ingestion of Ground Water	**Attachment D** TABLE 5	**2.4E-01**	**5.5E-01**	**1.3E-05**
	Dermal Contact to Ground Water	**Attachment D** TABLE 6	**2.5E-01**	**4.2E-01**	**4.3E-04**
	Dermal Contact to Surface Water	**Attachment D** TABLE 7	**4.6E-01**	**1.6E+00**	**2.5E-04**
	Ingestion of Sediment	**Attachment D** TABLE 8	**1.0E-02**	**9.4E-02**	**2.8E-06**
	Dermal Contact to Sediment	**Attachment D** TABLE 9	**9.7E-04**	**8.6E-02**	**4.4E-06**
	TOTAL RECEPTOR RISK (Nc & Car)		***9.6E-01***	***2.8E+00***	***7.0E-04***

FIGURES

FIGURE 1 - Exposure Pathway - Updated SEAD-12 Risk Assessment



EXPOSURE ROUTE	RECEPTOR: HUMAN					
	CURRENT SITE WORKER	FUTURE PARK WORKER OUTDOOR	OFF SITE WADER	FUTURE RECREATIONAL VISITOR	FUTURE CONSTRUCTION WORKER	RESIDENTIAL (1)
INHALATION	C	C	NA	C	C	C
INGESTION	C	C	NA	C	C	C
DERMAL CONTACT	C	C	NA	C	C	C
INGESTION	NA	NA	NA	NA	NA	NA
DERMAL CONTACT	NA	C	NA	C	NA	C
INGESTION	NA	C	NA	C	NA	C
INHALATION	NA	NA	NA	C	NA	C
DERMAL CONTACT	NA	NA	NA	C	NA	C
INGESTION	NA	NA	NA	C	NA	C
DERMAL CONTACT	NA	C	NA	C	NA	C

C Pathway considered to pose potential chemical risk

NA Not applicable to receptor

ATTACHMENTS

ATTACHMENT A	DISPOSAL PIT A/B DATA
ATTACHMENT B	DISPOSAL PIT C DATA
ATTACHMENT C	EXPOSURE POINT ASSUMPTION
ATTACHMENT D	RISK CHARACTERIZATION, OTHER SITE MEDIA (Surface Water, Sediment, Groundwater)

ATTACHMENT A

DISPOSAL PIT A/B DATA

Attachment A Table 1
Soil Samples Considered in Updated Risk Assessment
SEAD-12 Disposal Pit A/B

Seneca Army Depot Activity
Romulus, NY

							Area	SEAD-12 A/B		SEAD-12 A/B		SEAD-12 A/B		SEAD-12 A/B		SEAD-12 A/B	
							Location_Id	S12EXFL-N-9-01		S12EXFL-N-9-02		S12EXFL-O-10-01		S12EXPR-N-10-01		S12EXPR-N-10-02	
							Matrix	SOIL		SOIL		SOIL		SOIL		SOIL	
							Sample_Id	S12EXFL-N-9-01		S12EXFL-N-9-02		S12EXFL-O-10-01		S12EXPR-N-10-01		S12EXPR-N-10-02	
							Samp_Depth_Top	0		0		0		0		0	
							Samp_Depth_Bot	0.2		0.2		0.2		0.2		0.2	
							Sample_Date	07/30/09		07/30/09		07/30/09		07/30/09		07/30/09	
								SA		SA		SA		SA		SA	
		Maximum	Frequency		Number	Number	Number	RA		RA		RA		RA		RA	
		Concentration	of	Action	of	of Times	of	Pit A		Pit A		Pit A		Pit A		Pit A	
Parameter	**Units**	**Detected**	**Detection**	**Level (1)**	**Exceedances**	**Detected**	**Samples**	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)
Acetone	UG/KG	52	21%	50	1	12	58	25	U	23	U	22	U	22	U	23	U
Carbon disulfide	UG/KG	2.5	2%		0	1	58	2.5	J	0.58	U	0.57	U	0.57	U	0.59	U
Ethyl benzene	UG/KG	49	5%	1000	0	3	58	2.7	J	1	U	0.97	U	0.99	U	1.1	U
Meta/Para Xylene	UG/KG	1.3	3%	260	0	1	33	1.3	J	0.72	U	0.7	U	0.71	U	0.72	U
Methyl ethyl ketone	UG/KG	1.1	2%	120	0	1	58	1.1	J	0.87	U	0.84	U	0.85	U	0.87	U
Methylene chloride	UG/KG	1	7%	50	0	4	58	0.49	U	0.44	U	0.42	U	0.43	U	0.44	U
Styrene	UG/KG	0.57	3%		0	2	58	0.36	U	0.57	J	0.54	J	0.32	U	0.32	U
Toluene	UG/KG	15	36%	700	0	21	58	0.68	J	0.37	U	0.58	J	0.66	J	0.37	U
Total Xylenes	UG/KG	520	8%	260	1	2	25										
Trichloroethene	UG/KG	11	21%	470	0	12	58	0.51	U	0.46	U	0.83	J	0.49	J	0.46	U
Semoivolatile Organic Compounds																	
2-Methylnaphthalene	UG/KG	56	3%		0	2	58	41	U	37	U	36	U	36	U	37	U
Acenaphthene	UG/KG	23	2%	20000	0	1	58	50	U	45	U	43	U	44	U	45	U
Anthracene	UG/KG	58	12%	100000	0	7	58	47	U	42	U	41	U	42	U	43	U
Benzo(a)anthracene	UG/KG	190	26%	1000	0	15	58	50	U	45	U	43	U	44	U	45	U
Benzo(a)pyrene	UG/KG	140	26%	1000	0	15	58	42	U	38	U	37	U	37	U	38	U
Benzo(b)fluoranthene	UG/KG	170	24%	1000	0	14	58	60	U	54	U	52	U	53	U	54	U
Benzo(ghi)perylene	UG/KG	6.7	5%	100000	0	3	58	120	U	110	U	98	U	100	U	110	U
Benzo(k)fluoranthene	UG/KG	150	21%	800	0	12	58	61	U	55	U	53	U	54	U	55	U
Bis(2-Ethylhexyl)phthalate	UG/KG	930	24%		0	14	58	70	U	63	U	120	J	62	U	63	U
Butylbenzylphthalate	UG/KG	5.1	2%		0	1	58	51	U	46	U	45	U	45	U	46	U
Chrysene	UG/KG	250	28%	1000	0	16	58	51	U	46	U	45	U	45	U	46	U
Di-n-butylphthalate	UG/KG	4	2%		0	1	58	180	U	160	U	150	U	160	U	160	U
Di-n-octylphthalate	UG/KG	45	17%		0	10	58	42	U	38	U	37	U	37	U	38	U
Dibenz(a,h)anthracene	UG/KG	6	2%	330	0	1	58	49	U	44	U	42	U	43	U	44	U
Fluoranthene	UG/KG	320	28%	100000	0	16	58	50	U	45	U	43	U	44	U	45	U
Fluorene	UG/KG	10	2%	30000	0	1	58	41	U	37	U	36	U	36	U	37	U
Indeno(1,2,3-cd)pyrene	UG/KG	93	19%	500	0	11	58	46	U	41	U	40	U	41	U	42	U
Naphthalene	UG/KG	600	3%	12000	0	2	58	37	U	33	U	32	U	33	U	34	U
Phenanthrene	UG/KG	240	26%	100000	0	15	58	51	U	46	U	45	U	45	U	46	U
Pyrene	UG/KG	290	28%	100000	0	16	58	45	U	40	U	39	U	40	U	40	U
Pesticides/PCBs																	
Aroclor-1254	UG/KG	63	5%	100	0	3	60	22	U	20	U	63		19	U	20	U
Alpha-BHC	UG/KG	24	5%	20	1	3	58	8.5		0.96	U	0.93	U	0.94	U	0.96	U
Beta-BHC	UG/KG	2.2	2%	36	0	1	58	1.1	U	0.96	U	0.93	U	0.94	U	0.96	U
Heptachlor	UG/KG	13	3%	42	0	2	58	1.1	U	0.96	U	0.93	U	0.94	U	0.96	U
Heptachlor epoxide	UG/KG	1.7	2%		0	1	58	1.1	U	0.96	U	0.93	U	0.94	U	0.96	U
Metals																	
Aluminum	MG/KG	14900	100%		0	58	58	11500		13700		7340		13100		13300	
Antimony	MG/KG	0.81	3%		0	1	36	0.492	U	0.445	U	0.427	U	0.446	U	0.456	U
Arsenic	MG/KG	6.4	100%	13	0	58	58	4.9		6.4		4.5		5.9		5.9	
Barium	MG/KG	223	100%	350	0	58	58	79.3		92.8		223		111		89.4	
Beryllium	MG/KG	0.778	100%	7.2	0	58	58	0.609	J	0.778		0.403	J	0.773		0.706	
Cadmium	MG/KG	3	34%	2.5	1	20	58	2.4		2.5		1.8		0.282	J	0.569	U
Calcium	MG/KG	142000	100%		0	58	58	50400		35700		108000		3550		24600	

Attachment A Table 1
Soil Samples Considered in Updated Risk Assessment
SEAD-12 Disposal Pit A/B

Seneca Army Depot Activity
Romulus, NY

								Area	SEAD-12 A/B		SEAD-12 A/B		SEAD-12 A/B		SEAD-12 A/B		SEAD-12 A/B	
								Location_Id	S12EXFL-N-9-01		S12EXFL-N-9-02		S12EXFL-O-10-01		S12EXPR-N-10-01		S12EXPR-N-10-02	
								Matrix	SOIL		SOIL		SOIL		SOIL		SOIL	
								Sample_Id	S12EXFL-N-9-01		S12EXFL-N-9-02		S12EXFL-O-10-01		S12EXPR-N-10-01		S12EXPR-N-10-02	
								Samp_Depth_Top	0		0		0		0		0	
								Samp_Depth_Bot	0.2		0.2		0.2		0.2		0.2	
								Sample_Date	07/30/09		07/30/09		07/30/09		07/30/09		07/30/09	
									SA		SA		SA		SA		SA	
		Maximum	Frequency						RA		RA		RA		RA		RA	
		Concentration	of	Action	Number	Number	Number		Pit A		Pit A		Pit A		Pit A		Pit A	
Parameter	**Units**	**Detected**	**Detection**	**Level (1)**	**of Exceedances**	**of Times Detected**	**of Samples**		Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)
Chromium	MG/KG	46.7	100%	30	1	58	58		19.8		**46.7**		17.9		19.8		19.7	
Cobalt	MG/KG	15.2	100%		0	58	58		11		13.3		6.2		11.4		10.8	
Copper	MG/KG	41	100%	50	0	58	58		20.7		29.1		18.7		30.5		23.7	
Cyanide	MG/KG	1.6	7%	27	0	4	58		0.6	U	0.42	U	0.42	U	0.42	U	0.5	U
Iron	MG/KG	27800	100%		0	58	58		21100		26800		15100		23400		23300	
Lead	MG/KG	33.3	100%	63	0	58	58		13.1		15.4		12.6		11.8		11.8	
Magnesium	MG/KG	37400	100%		0	58	58		10300		9560		37400		4350		7280	
Manganese	MG/KG	1030	100%	1600	0	58	58		551		551		409		634		580	
Mercury	MG/KG	0.11	60%	0.18	0	35	58		0.024	J	0.029	J	0.018	J	0.034	J	0.035	J
Nickel	MG/KG	48.9	95%	30	20	55	58		**33.4**		**39.6**		**34.7**		**37.8**		**31.8**	
Potassium	MG/KG	2110	100%		0	58	58		1600		1630		1540		1360		1420	
Selenium	MG/KG	1.9	13%	3.9	0	6	48		1.2	U	1.1	U	0.185	U	1.1	U	1.6	
Sodium	MG/KG	180	78%		0	45	58		110	J	88.9	J	154		38.7	J	65	J
Thallium	MG/KG	1.8	9%		0	5	58		0.866	U	0.783	U	0.94	U	0.589	U	0.601	U
Vanadium	MG/KG	27.3	100%		0	58	58		20.3		22.9		13.6		24.3		22.8	
Zinc	MG/KG	110	100%	109	1	58	58		65.1	J	73.6	J	62.7	J	55.7	J	54.2	J

Attachment A Table 1
Soil Samples Considered in Updated Risk Assessment
SEAD-12 Disposal Pit A/B

Seneca Army Depot Activity
Romulus, NY

								Area		SEAD-12 A/B		SEAD-12 A/B		SEAD-12 A/B		SEAD-12 A/B		SEAD-12 A/B	
								Location_Id		S12EXPR-N-9-01		S12EXPR-O-10-01		S12EXPR-O-9-01		S12EXSW-N-10-01		S12EXSW-N-10-02	
								Matrix		SOIL		SOIL		SOIL		SOIL		SOIL	
								Sample_Id		S12EXPR-N-9-01		S12EXPR-O-10-01		S12EXPR-O-9-01		S12EXSW-N-10-01		S12EXSW-N-10-02	
								Samp_Depth_Top		0		0		0		0		0	
								Samp_Depth_Bot		0.2		0.2		0.2		0		0	
								Sample_Date		07/30/09		07/30/09		07/30/09		08/05/09		08/05/09	
										SA		SA		SA		SA		SA	
		Maximum	Frequency							RA		RA		RA		RA		RA	
		Concentration	of	Action	Number	Number	Number			Pit A		Pit A		Pit A		Pit A		Pit A	
Parameter	**Units**	**Detected**	**Detection**	**Level (1)**	**of Exceedances**	**of Times Detected**	**of Samples**			Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)
Acetone	UG/KG	52	21%	50	1	12	58			22	U	22	U	3.2	J	1.8	UJ	22	UJ
Carbon disulfide	UG/KG	2.5	2%		0	1	58			0.56	U	0.57	U	0.56	U	0.59	U	0.57	U
Ethyl benzene	UG/KG	49	5%	1000	0	3	58			0.95	U	0.97	U	0.97	U	1.1	U	0.98	U
Meta/Para Xylene	UG/KG	1.3	3%	260	0	1	33			0.68	U	0.7	U	0.7	U	1.1	U	1.1	U
Methyl ethyl ketone	UG/KG	1.1	2%	120	0	1	58			0.82	U	0.84	U	0.84	U	0.87	U	0.84	U
Methylene chloride	UG/KG	1	7%	50	0	4	58			0.41	U	0.42	U	0.42	U	0.44	U	5.5	U
Styrene	UG/KG	0.57	3%		0	2	58			0.31	U	0.31	U	0.31	U	0.52	U	0.5	U
Toluene	UG/KG	15	36%	700	0	21	58			0.73	J	0.36	U	0.55	J	0.49	J	1.1	J
Total Xylenes	UG/KG	520	8%	260	1	2	25												
Trichloroethene	UG/KG	11	21%	470	0	12	58			0.44	J	0.45	U	0.44	U	0.94	J	1.2	J
Semoivolatile Organic Compounds																			
2-Methylnaphthalene	UG/KG	56	3%		0	2	58			35	U	36	U	36	U	37	U	36	U
Acenaphthene	UG/KG	23	2%	20000	0	1	58			43	U	43	U	43	U	45	U	43	U
Anthracene	UG/KG	58	12%	100000	0	7	58			40	U	41	U	41	U	43	U	41	U
Benzo(a)anthracene	UG/KG	190	26%	1000	0	15	58			43	U	43	U	43	U	45	U	43	U
Benzo(a)pyrene	UG/KG	140	26%	1000	0	15	58			36	U	37	U	37	U	38	U	37	U
Benzo(b)fluoranthene	UG/KG	170	24%	1000	0	14	58			51	U	52	U	52	U	54	U	52	U
Benzo(ghi)perylene	UG/KG	6.7	5%	100000	0	3	58			97	U	99	U	98	U	110	U	99	U
Benzo(k)fluoranthene	UG/KG	150	21%	800	0	12	58			52	U	53	U	53	U	55	U	53	U
Bis(2-Ethylhexyl)phthalate	UG/KG	930	24%		0	14	58			60	U	61	U	61	U	63	U	61	U
Butylbenzylphthalate	UG/KG	5.1	2%		0	1	58			44	U	45	U	44	U	46	U	45	U
Chrysene	UG/KG	250	28%	1000	0	16	58			44	U	45	U	44	U	46	U	45	U
Di-n-butylphthalate	UG/KG	4	2%		0	1	58			150	U	150	U	150	U	160	U	150	U
Di-n-octylphthalate	UG/KG	45	17%		0	10	58			36	U	37	U	37	U	38	U	37	U
Dibenz(a,h)anthracene	UG/KG	6	2%	330	0	1	58			41	U	42	U	42	U	44	U	42	U
Fluoranthene	UG/KG	320	28%	100000	0	16	58			43	U	43	U	43	U	45	U	43	U
Fluorene	UG/KG	10	2%	30000	0	1	58			35	U	36	U	36	U	37	U	36	U
Indeno(1,2,3-cd)pyrene	UG/KG	93	19%	500	0	11	58			39	U	40	U	40	U	41	U	40	U
Naphthalene	UG/KG	600	3%	12000	0	2	58			32	U	32	U	32	U	33	U	32	U
Phenanthrene	UG/KG	240	26%	100000	0	15	58			44	U	45	U	44	U	46	U	45	U
Pyrene	UG/KG	290	28%	100000	0	16	58			38	U	39	U	39	U	40	U	39	U
Pesticides/PCBs																			
Aroclor-1254	UG/KG	63	5%	100	0	3	60			19	U	19	U	19	U	20	U	19	U
Alpha-BHC	UG/KG	24	5%	20	1	3	58			0.91	U	0.93	U	0.93	U	0.96	U	0.93	U
Beta-BHC	UG/KG	2.2	2%	36	0	1	58			0.91	U	0.93	U	0.93	U	0.96	U	0.93	U
Heptachlor	UG/KG	13	3%	42	0	2	58			0.91	U	0.93	U	0.93	U	0.96	U	0.93	U
Heptachlor epoxide	UG/KG	1.7	2%		0	1	58			0.91	U	0.93	U	0.93	U	0.96	U	0.93	U
Metals																			
Aluminum	MG/KG	14900	100%		0	58	58			9600		11500		9090		12100		9690	
Antimony	MG/KG	0.81	3%		0	1	36			0.431	U	0.432	U	0.439	U	0.5	UJ	0.5	UJ
Arsenic	MG/KG	6.4	100%	13	0	58	58			4		5.2		4.2		3.7		5.8	
Barium	MG/KG	223	100%	350	0	58	58			84.6		63.2		66.5		81.4		81	
Beryllium	MG/KG	0.778	100%	7.2	0	58	58			0.518	J	0.625		0.485	J	0.64		0.56	
Cadmium	MG/KG	3	34%	2.5	1	20	58			0.539	U	0.54	U	0.549	U	0.57	U	1.13	
Calcium	MG/KG	142000	100%		0	58	58			92200		50800		98800		49500		89700	

Attachment A Table 1
Soil Samples Considered in Updated Risk Assessment
SEAD-12 Disposal Pit A/B

Seneca Army Depot Activity
Romulus, NY

								Area		SEAD-12 A/B		SEAD-12 A/B		SEAD-12 A/B		SEAD-12 A/B		SEAD-12 A/B	
								Location_Id		S12EXPR-N-9-01		S12EXPR-O-10-01		S12EXPR-O-9-01		S12EXSW-N-10-01		S12EXSW-N-10-02	
								Matrix		SOIL		SOIL		SOIL		SOIL		SOIL	
								Sample_Id		S12EXPR-N-9-01		S12EXPR-O-10-01		S12EXPR-O-9-01		S12EXSW-N-10-01		S12EXSW-N-10-02	
								Samp_Depth_Top		0		0		0		0		0	
								Samp_Depth_Bot		0.2		0.2		0.2		0		0	
								Sample_Date		07/30/09		07/30/09		07/30/09		08/05/09		08/05/09	
										SA		SA		SA		SA		SA	
		Maximum	Frequency			Number	Number	Number		RA		RA		RA		RA		RA	
		Concentration	of	Action		of	of Times	of		Pit A		Pit A		Pit A		Pit A		Pit A	
Parameter	**Units**	**Detected**	**Detection**	**Level (1)**		**Exceedances**	**Detected**	**Samples**		Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)
Chromium	MG/KG	46.7	100%	30		1	58	58		15.2		17.8		15.1		18.9		20.7	
Cobalt	MG/KG	15.2	100%			0	58	58		8.4		10.3		8.1		9.1		11.1	
Copper	MG/KG	41	100%	50		0	58	58		19.4		24.9		21.3		23.2		41	
Cyanide	MG/KG	1.6	7%	27		0	4	58		0.5	U	0.42	U	0.42	U	0.42	U	0.5	U
Iron	MG/KG	27800	100%			0	58	58		17800		21400		18500		20100		19700	
Lead	MG/KG	33.3	100%	63		0	58	58		9		10.1		9.1		16.4	J	33.3	J
Magnesium	MG/KG	37400	100%			0	58	58		11700		10900		16300		11600	J	14600	J
Manganese	MG/KG	1030	100%	1600		0	58	58		424		548		376		536		415	
Mercury	MG/KG	0.11	60%	0.18		0	35	58		0.017	J	0.021	J	0.018	J	0.039	J	0.021	J
Nickel	MG/KG	48.9	95%	30		20	55	58		26.1		**30.2**		25.6		26.8		**36.9**	
Potassium	MG/KG	2110	100%			0	58	58		1550		1470		1730		1680	J	1660	J
Selenium	MG/KG	1.9	13%	3.9		0	6	48		1.1	U	1.1	U	0.403	J	1.1	U	0.2	U
Sodium	MG/KG	180	78%			0	45	58		129		94.5	J	134		90	J	140	
Thallium	MG/KG	1.8	9%			0	5	58		0.57	U	0.76	U	0.58	U	0.7	U	0.2	U
Vanadium	MG/KG	27.3	100%			0	58	58		17		20.8		16.4		21.6		19.7	
Zinc	MG/KG	110	100%	109		1	58	58		46	J	45.1	J	45.7	J	57.8	J	49.5	J

Attachment A Table 1
Soil Samples Considered in Updated Risk Assessment
SEAD-12 Disposal Pit A/B

Seneca Army Depot Activity
Romulus, NY

								Area		SEAD-12 A/B		SEAD-12 A/B		SEAD-12 A/B		SEAD-12 A/B		SEAD-12 A/B	
								Location_Id		S12EXSW-N-9-01		S12EXSW-O-10-01		S12EXSW-O-9-01		S12EXFL-O-8-01		S12EXPR-O-7-01	
								Matrix		SOIL		SOIL		SOIL		SOIL		SOIL	
								Sample_Id		S12EXSW-N-9-01		S12EXSW-O-10-01		S12EXSW-O-9-01		S12EXFL-O-8-01		S12EXPR-O-7-01	
								Samp_Depth_Top		0		0		0		0		0	
								Samp_Depth_Bot		0		0		0		0.2		0.2	
								Sample_Date		08/05/09		08/05/09		08/05/09		08/13/09		07/30/09	
										SA		SA		SA		SA		SA	
		Maximum	Frequency							RA		RA		RA		RA		RA	
		Concentration	of	Action	Number	Number	Number			Pit A		Pit A		Pit A		Pit B		Pit B	
Parameter	**Units**	**Detected**	**Detection**	**Level (1)**	**of Exceedances**	**of Times Detected**	**of Samples**			Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)
Acetone	UG/KG	52	21%	50	1	12	58			23	UJ	22	UJ	22	UJ	2.1	UJ	24	U
Carbon disulfide	UG/KG	2.5	2%		0	1	58			0.58	U	0.57	U	0.57	U	0.71	UJ	0.63	U
Ethyl benzene	UG/KG	49	5%	1000	0	3	58			1	U	0.98	U	0.99	U	1.3	UJ	1.1	U
Meta/Para Xylene	UG/KG	1.3	3%	260	0	1	33			1.1	U	1.1	U	1.1	U	1.3	UJ	0.77	U
Methyl ethyl ketone	UG/KG	1.1	2%	120	0	1	58			0.87	U	0.85	U	0.85	U	1.1	UJ	0.93	U
Methylene chloride	UG/KG	1	7%	50	0	4	58			5.7	U	5.5	U	5.6	U	0.53	UJ	0.47	U
Styrene	UG/KG	0.57	3%		0	2	58			0.51	U	0.5	U	0.51	U	0.63	UJ	0.35	U
Toluene	UG/KG	15	36%	700	0	21	58			0.37	U	0.94	J	0.36	U	0.45	UJ	0.39	U
Total Xylenes	UG/KG	520	8%	260	1	2	25												
Trichloroethene	UG/KG	11	21%	470	0	12	58			0.46	U	0.71	J	0.53	J	0.56	UJ	0.49	U
Semoivolatile Organic Compounds																			
2-Methylnaphthalene	UG/KG	56	3%		0	2	58			37	U	36	U	36	U	45	UJ	39	U
Acenaphthene	UG/KG	23	2%	20000	0	1	58			45	U	44	U	44	U	54	UJ	48	U
Anthracene	UG/KG	58	12%	100000	0	7	58			42	U	41	U	42	U	52	UJ	46	U
Benzo(a)anthracene	UG/KG	190	26%	1000	0	15	58			45	U	44	U	44	U	54	UJ	48	U
Benzo(a)pyrene	UG/KG	140	26%	1000	0	15	58			38	U	37	U	37	U	46	UJ	41	U
Benzo(b)fluoranthene	UG/KG	170	24%	1000	0	14	58			54	U	53	U	53	U	66	UJ	58	U
Benzo(ghi)perylene	UG/KG	6.7	5%	100000	0	3	58			110	U	99	U	100	U	130	UJ	110	U
Benzo(k)fluoranthene	UG/KG	150	21%	800	0	12	58			55	U	54	U	54	U	67	UJ	59	U
Bis(2-Ethylhexyl)phthalate	UG/KG	930	24%		0	14	58			63	U	370	U	370	U	77	UJ	67	U
Butylbenzylphthalate	UG/KG	5.1	2%		0	1	58			46	U	45	U	45	U	56	UJ	49	U
Chrysene	UG/KG	250	28%	1000	0	16	58			46	U	45	U	45	U	56	UJ	49	U
Di-n-butylphthalate	UG/KG	4	2%		0	1	58			160	U	150	U	160	U	190	UJ	170	U
Di-n-octylphthalate	UG/KG	45	17%		0	10	58			38	U	37	U	37	U	46	UJ	41	U
Dibenz(a,h)anthracene	UG/KG	6	2%	330	0	1	58			44	U	43	U	43	U	53	UJ	47	U
Fluoranthene	UG/KG	320	28%	100000	0	16	58			45	U	44	U	44	U	54	UJ	48	U
Fluorene	UG/KG	10	2%	30000	0	1	58			37	U	36	U	36	U	45	UJ	39	U
Indeno(1,2,3-cd)pyrene	UG/KG	93	19%	500	0	11	58			41	U	40	U	41	U	50	UJ	44	U
Naphthalene	UG/KG	600	3%	12000	0	2	58			33	U	33	U	33	U	41	UJ	36	U
Phenanthrene	UG/KG	240	26%	100000	0	15	58			46	U	45	U	45	U	56	UJ	49	U
Pyrene	UG/KG	290	28%	100000	0	16	58			40	U	39	U	40	U	49	UJ	43	U
Pesticides/PCBs																			
Aroclor-1254	UG/KG	63	5%	100	0	3	60			20	U	19	U	19	U	24	UJ	21	U
Alpha-BHC	UG/KG	24	5%	20	1	3	58			0.96	U	0.94	U	0.94	U	1.2	UJ	1.1	U
Beta-BHC	UG/KG	2.2	2%	36	0	1	58			0.96	U	0.94	U	0.94	U	1.2	UJ	1.1	U
Heptachlor	UG/KG	13	3%	42	0	2	58			0.96	U	0.94	U	0.94	U	1.2	UJ	1.1	U
Heptachlor epoxide	UG/KG	1.7	2%		0	1	58			0.96	U	0.94	U	0.94	U	1.2	UJ	1.1	U
Metals																			
Aluminum	MG/KG	14900	100%		0	58	58			10400		9840		9540		12700	J	13800	
Antimony	MG/KG	0.81	3%		0	1	36			0.5	UJ	0.5	UJ	0.5	UJ	0.55	UJ	0.482	U
Arsenic	MG/KG	6.4	100%	13	0	58	58			3.6		3		3.2		1.9	J	5.5	
Barium	MG/KG	223	100%	350	0	58	58			90.7		68.3		75.4		71.4	J	100	
Beryllium	MG/KG	0.778	100%	7.2	0	58	58			0.57	J	0.51	J	0.52	J	0.6	J	0.741	
Cadmium	MG/KG	3	34%	2.5	1	20	58			0.57	U	0.55	U	0.68		0.68	UJ	0.603	U
Calcium	MG/KG	142000	100%		0	58	58			78800		89600		119000		20600	J	7530	

Attachment A Table 1
Soil Samples Considered in Updated Risk Assessment
SEAD-12 Disposal Pit A/B

Seneca Army Depot Activity
Romulus, NY

							Area	SEAD-12 A/B		SEAD-12 A/B		SEAD-12 A/B		SEAD-12 A/B		SEAD-12 A/B					
							Location_Id	S12EXSW-N-9-01		S12EXSW-O-10-01		S12EXSW-O-9-01		S12EXFL-O-8-01		S12EXPR-O-7-01					
							Matrix	SOIL		SOIL		SOIL		SOIL		SOIL					
							Sample_Id	S12EXSW-N-9-01		S12EXSW-O-10-01		S12EXSW-O-9-01		S12EXFL-O-8-01		S12EXPR-O-7-01					
							Samp_Depth_Top	0		0		0		0		0					
							Samp_Depth_Bot	0		0		0		0.2		0.2					
							Sample_Date	08/05/09		08/05/09		08/05/09		08/13/09		07/30/09					
								SA		SA		SA		SA		SA					
		Maximum	Frequency			Number	Number	Number		RA		RA		RA		RA					
		Concentration	of	Action		of	of Times	of		Pit A		Pit A		Pit B		Pit B					
Parameter	**Units**	**Detected**	**Detection**	**Level (1)**		**Exceedances**	**Detected**	**Samples**		Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)				
Chromium	MG/KG	46.7	100%	30		1	58	58		17.1		15.7		16.6		18.7	J	19.3			
Cobalt	MG/KG	15.2	100%			0	58	58		8.8		8.8		9.9		10.6	J	14			
Copper	MG/KG	41	100%	50		0	58	58		24.5		22.8		21.3		19	J	19			
Cyanide	MG/KG	1.6	7%	27		0	4	58		0.5	U	0.42	U	0.42	U	0.5	UJ	0.5	U		
Iron	MG/KG	27800	100%			0	58	58		19300		17300		17700		19100	J	21900			
Lead	MG/KG	33.3	100%	63		0	58	58		9.2	J	8.3	J	8.7	J	13.3	J	20.8			
Magnesium	MG/KG	37400	100%			0	58	58		12000	J	14400	J	15900	J	6740	J	4540			
Manganese	MG/KG	1030	100%	1600		0	58	58		472		435		493		550	J	1030			
Mercury	MG/KG	0.11	60%	0.18		0	35	58		0.018	J	0.017	J	0.016	J	0.04	J	0.047			
Nickel	MG/KG	48.9	95%	30		20	55	58		29.7		25.4		27.9		27.3	J	25.4			
Potassium	MG/KG	2110	100%			0	58	58		1650	J	1770	J	1770	J	1320	J	1330			
Selenium	MG/KG	1.9	13%	3.9		0	6	48		0.2	U	0.2	U	0.2	U	1.37	UJ	1.9			
Sodium	MG/KG	180	78%			0	45	58		130		140		180		63.8	J	42.1	J		
Thallium	MG/KG	1.8	9%			0	5	58		0.7	U	0.2	U	0.6	U	0.72	UJ	1.1	U		
Vanadium	MG/KG	27.3	100%			0	58	58		18.8		18.2		17		20.8	J	24.1			
Zinc	MG/KG	110	100%	109		1	58	58		51.1	J	49.4	J	47.5	J	61.1	J	62.4	J		

Attachment A Table 1
Soil Samples Considered in Updated Risk Assessment
SEAD-12 Disposal Pit A/B

Seneca Army Depot Activity
Romulus, NY

							Area	SEAD-12 A/B		SEAD-12 A/B		SEAD-12 A/B		SEAD-12 A/B		SEAD-12 A/B	
							Location_Id	S12EXPR-O-8-02		S12EXPR-O-8-03		S12EXPR-O-8-03		S12EXPR-O-8-06		S12EXSW-O-7-01	
							Matrix	SOIL		SOIL		SOIL		SOIL		SOIL	
							Sample_Id	S12EXPR-O-8-02		S12EXPR-O-8-04		S12EXPR-O-8-03		S12EXPR-O-8-05		S12EXSW-O-7-01	
							Samp_Depth_Top	0		0		0		0		0	
							Samp_Depth_Bot	0.2		0.2		0.2		0.2		0	
							Sample_Date	07/30/09		07/30/09		07/30/09		10/09/09		08/05/09	
								SA		DU		SA		SA		SA	
		Maximum	Frequency			Number	Number	Number	RA		RA		RA		RA		RA	
		Concentration	of	Action	Number	of Times	of	Pit B		Pit B		Pit B		Pit B		Pit B	
Parameter	**Units**	**Detected**	**Detection**	**Level (1)**	**of Exceedances**	**Detected**	**Samples**	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)
Acetone	UG/KG	52	21%	50	1	12	58	2.1	J	1.8	U	1.8	U			1.9	UJ
Carbon disulfide	UG/KG	2.5	2%		0	1	58	0.57	U	0.61	U	0.61	U			0.64	U
Ethyl benzene	UG/KG	49	5%	1000	0	3	58	0.99	U	1.1	U	1.1	U			1.2	U
Meta/Para Xylene	UG/KG	1.3	3%	260	0	1	33	0.71	U	0.76	U	0.75	U			1.2	U
Methyl ethyl ketone	UG/KG	1.1	2%	120	0	1	58	0.85	U	0.91	U	0.9	UJ			0.96	U
Methylene chloride	UG/KG	1	7%	50	0	4	58	0.43	U	0.46	U	0.45	U			0.48	U
Styrene	UG/KG	0.57	3%		0	2	58	0.32	U	0.34	U	0.33	UJ			0.57	U
Toluene	UG/KG	15	36%	700	0	21	58	0.36	U	0.39	U	0.38	U			0.41	U
Total Xylenes	UG/KG	520	8%	260	1	2	25										
Trichloroethene	UG/KG	11	21%	470	0	12	58	0.45	U	0.54	J	0.55	J			0.51	U
Semoivolatile Organic Compounds																	
2-Methylnaphthalene	UG/KG	56	3%		0	2	58	36	U	39	U	38	U			41	U
Acenaphthene	UG/KG	23	2%	20000	0	1	58	44	U	47	U	46	U			49	U
Anthracene	UG/KG	58	12%	100000	0	7	58	42	U	45	U	44	U			47	U
Benzo(a)anthracene	UG/KG	190	26%	1000	0	15	58	44	U	47	U	46	U			49	U
Benzo(a)pyrene	UG/KG	140	26%	1000	0	15	58	37	U	40	U	39	U			42	U
Benzo(b)fluoranthene	UG/KG	170	24%	1000	0	14	58	53	U	57	U	56	U			59	U
Benzo(ghi)perylene	UG/KG	6.7	5%	100000	0	3	58	100	U	110	U	110	U			120	U
Benzo(k)fluoranthene	UG/KG	150	21%	800	0	12	58	54	U	58	U	57	U			61	U
Bis(2-Ethylhexyl)phthalate	UG/KG	930	24%		0	14	58	62	U	66	U	65	U			70	U
Butylbenzylphthalate	UG/KG	5.1	2%		0	1	58	45	U	48	U	48	U			51	U
Chrysene	UG/KG	250	28%	1000	0	16	58	45	U	48	U	48	U			51	U
Di-n-butylphthalate	UG/KG	4	2%		0	1	58	160	U	170	U	160	U			170	U
Di-n-octylphthalate	UG/KG	45	17%		0	10	58	37	U	40	U	39	U			42	U
Dibenz(a,h)anthracene	UG/KG	6	2%	330	0	1	58	43	U	46	U	45	U			48	U
Fluoranthene	UG/KG	320	28%	100000	0	16	58	44	U	47	U	46	U			49	U
Fluorene	UG/KG	10	2%	30000	0	1	58	36	U	39	U	38	U			41	U
Indeno(1,2,3-cd)pyrene	UG/KG	93	19%	500	0	11	58	41	U	43	U	43	U			46	U
Naphthalene	UG/KG	600	3%	12000	0	2	58	33	U	35	U	35	U			37	U
Phenanthrene	UG/KG	240	26%	100000	0	15	58	45	U	48	U	48	U			51	U
Pyrene	UG/KG	290	28%	100000	0	16	58	40	U	42	U	42	U			44	U
Pesticides/PCBs																	
Aroclor-1254	UG/KG	63	5%	100	0	3	60	19	U	49	J	21	U	21	U	22	U
Alpha-BHC	UG/KG	24	5%	20	1	3	58	0.94	U	1.1	U	0.99	U			1.1	U
Beta-BHC	UG/KG	2.2	2%	36	0	1	58	0.94	U	1.1	U	0.99	U			1.1	U
Heptachlor	UG/KG	13	3%	42	0	2	58	0.94	U	1.1	U	0.99	U			1.1	U
Heptachlor epoxide	UG/KG	1.7	2%		0	1	58	0.94	U	1.1	U	0.99	U			1.1	U
Metals																	
Aluminum	MG/KG	14900	100%		0	58	58	12400		13700		12800				14100	
Antimony	MG/KG	0.81	3%		0	1	36	0.438	U	0.468	U	0.466	U			0.5	UJ
Arsenic	MG/KG	6.4	100%	13	0	58	58	5		4.7		4.3				2.3	
Barium	MG/KG	223	100%	350	0	58	58	80.3		86.9		82.3				80.2	
Beryllium	MG/KG	0.778	100%	7.2	0	58	58	0.71		0.685		0.622				0.66	
Cadmium	MG/KG	3	34%	2.5	1	20	58	0.547	U	0.585	U	0.583	U			0.62	U
Calcium	MG/KG	142000	100%		0	58	58	13400		6070	J	3580	J			17200	

Attachment A Table 1
Soil Samples Considered in Updated Risk Assessment
SEAD-12 Disposal Pit A/B

Seneca Army Depot Activity
Romulus, NY

							Area		SEAD-12 A/B		SEAD-12 A/B		SEAD-12 A/B		SEAD-12 A/B		SEAD-12 A/B			
							Location_Id		S12EXPR-O-8-02		S12EXPR-O-8-03		S12EXPR-O-8-03		S12EXPR-O-8-06		S12EXSW-O-7-01			
							Matrix		SOIL		SOIL		SOIL		SOIL		SOIL			
							Sample_Id		S12EXPR-O-8-02		S12EXPR-O-8-04		S12EXPR-O-8-03		S12EXPR-O-8-05		S12EXSW-O-7-01			
							Samp_Depth_Top		0		0		0		0		0			
							Samp_Depth_Bot		0.2		0.2		0.2		0.2		0			
							Sample_Date		07/30/09		07/30/09		07/30/09		10/09/09		08/05/09			
									SA		DU		SA		SA		SA			
		Maximum	Frequency		Number	Number	Number		RA		RA		RA		RA		RA			
		Concentration	of	Action	of	of Times	of		Pit B		Pit B		Pit B		Pit B		Pit B			
Parameter	**Units**	**Detected**	**Detection**	**Level (1)**	**Exceedances**	**Detected**	**Samples**		Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)		
Chromium	MG/KG	46.7	100%	30	1	58	58		19		18.4		16.9				20.4			
Cobalt	MG/KG	15.2	100%		0	58	58		10.5		10.5		12.1				9.6			
Copper	MG/KG	41	100%	50	0	58	58		24.8		15.6		14.8				19.9			
Cyanide	MG/KG	1.6	7%	27	0	4	58		0.42	U	0.5	U	0.42	U			0.5	U		
Iron	MG/KG	27800	100%		0	58	58		22500		22500		19500				21000			
Lead	MG/KG	33.3	100%	63	0	58	58		11.8		15.5		14.8				17.8	J		
Magnesium	MG/KG	37400	100%		0	58	58		6750		4040		3340				4860	J		
Manganese	MG/KG	1030	100%	1600	0	58	58		518		736		660				531			
Mercury	MG/KG	0.11	60%	0.18	0	35	58		0.03	J	0.035	J	0.034	J			0.046	J		
Nickel	MG/KG	48.9	95%	30	20	55	58		**31.5**		22.9		20.9				25.9			
Potassium	MG/KG	2110	100%		0	58	58		1520		1230		1070				1600	J		
Selenium	MG/KG	1.9	13%	3.9	0	6	48		1.1	U	1.1	J	1.2	U			1.2	U		
Sodium	MG/KG	180	78%		0	45	58		50.8	J	38.4	J	33.2	J			60	J		
Thallium	MG/KG	1.8	9%		0	5	58		0.578	U	0.824	U	0.616	U			0.7	U		
Vanadium	MG/KG	27.3	100%		0	58	58		21.6		23.6		21.4				23.5			
Zinc	MG/KG	110	100%	109	1	58	58		57.4	J	58.7	J	51.9	J			70.9	J		

Attachment A Table 1
Soil Samples Considered in Updated Risk Assessment
SEAD-12 Disposal Pit A/B

Seneca Army Depot Activity
Romulus, NY

							Area		SEAD-12 A/B		SEAD-12 A/B		SEAD-12 A/B		SEAD-12 A/B		SEAD-12 A/B	
							Location_Id		S12EXSW-O-8-02		S12EXSW-O-8-03		S12EXSW-O-8-06		S12STOCK-C1-01		S12STOCK-C1-02	
							Matrix		SOIL		SOIL		SOIL		SOIL		SOIL	
							Sample_Id		S12EXSW-O-8-02		S12EXSW-O-8-03		S12EXSW-O-8-05		S12STOCK-C1-01		S12STOCK-C1-02	
							Samp_Depth_Top		0		0		0		0		0	
							Samp_Depth_Bot		0		0		0.2		0.2		0.2	
							Sample_Date		08/05/09		08/05/09		10/09/09		07/30/09		08/06/09	
									SA		SA		SA		SA		SA	
		Maximum	Frequency			Number	Number	Number	RA		RA		RA		RA		RA	
		Concentration	of	Action		of	of Times	of	Pit B		Pit B		Pit B		Over/C1		Over/C1	
Parameter	**Units**	**Detected**	**Detection**	**Level (1)**		**Exceedances**	**Detected**	**Samples**	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)
Acetone	UG/KG	52	21%	50		1	12	58	23	UJ	24	UJ			3.4	J	1.9	UJ
Carbon disulfide	UG/KG	2.5	2%			0	1	58	0.58	U	0.61	U			0.6	U	0.62	U
Ethyl benzene	UG/KG	49	5%	1000		0	3	58	1	U	1.1	U			1.1	U	1.1	U
Meta/Para Xylene	UG/KG	1.3	3%	260		0	1	33	1.1	U	1.1	U			0.74	U	1.2	U
Methyl ethyl ketone	UG/KG	1.1	2%	120		0	1	58	0.86	U	0.9	U			0.9	U	0.92	U
Methylene chloride	UG/KG	1	7%	50		0	4	58	5.7	U	5.9	U			0.45	U	0.46	U
Styrene	UG/KG	0.57	3%			0	2	58	0.51	U	0.54	U			0.33	U	0.55	U
Toluene	UG/KG	15	36%	700		0	21	58	0.75	J	0.53	J			0.8	J	0.39	U
Total Xylenes	UG/KG	520	8%	260		1	2	25										
Trichloroethene	UG/KG	11	21%	470		0	12	58	0.46	U	0.48	U			0.53	J	0.49	U
Semoivolatile Organic Compounds																		
2-Methylnaphthalene	UG/KG	56	3%			0	2	58	37	U	38	U			38	U	39	U
Acenaphthene	UG/KG	23	2%	20000		0	1	58	45	U	46	U			46	U	47	U
Anthracene	UG/KG	58	12%	100000		0	7	58	42	U	44	U			48	J	45	U
Benzo(a)anthracene	UG/KG	190	26%	1000		0	15	58	45	U	46	U			170	J	94	J
Benzo(a)pyrene	UG/KG	140	26%	1000		0	15	58	38	U	39	U			130	J	73	J
Benzo(b)fluoranthene	UG/KG	170	24%	1000		0	14	58	54	U	56	U			150	J	88	J
Benzo(ghi)perylene	UG/KG	6.7	5%	100000		0	3	58	110	U	110	U			110	U	110	U
Benzo(k)fluoranthene	UG/KG	150	21%	800		0	12	58	55	U	57	U			130	J	78	J
Bis(2-Ethylhexyl)phthalate	UG/KG	930	24%			0	14	58	63	U	65	U			65	U	96	J
Butylbenzylphthalate	UG/KG	5.1	2%			0	1	58	46	U	48	U			47	U	49	U
Chrysene	UG/KG	250	28%	1000		0	16	58	46	U	48	U			220	J	120	J
Di-n-butylphthalate	UG/KG	4	2%			0	1	58	160	U	160	U			160	U	170	U
Di-n-octylphthalate	UG/KG	45	17%			0	10	58	38	U	39	U			39	U	40	U
Dibenz(a,h)anthracene	UG/KG	6	2%	330		0	1	58	43	U	45	U			45	U	46	U
Fluoranthene	UG/KG	320	28%	100000		0	16	58	45	U	46	U			300	J	170	J
Fluorene	UG/KG	10	2%	30000		0	1	58	37	U	38	U			38	U	39	U
Indeno(1,2,3-cd)pyrene	UG/KG	93	19%	500		0	11	58	41	U	43	U			75	J	45	J
Naphthalene	UG/KG	600	3%	12000		0	2	58	33	U	35	U			34	U	35	U
Phenanthrene	UG/KG	240	26%	100000		0	15	58	46	U	48	U			100	J	53	J
Pyrene	UG/KG	290	28%	100000		0	16	58	40	U	42	U			260	J	170	J
Pesticides/PCBs																		
Aroclor-1254	UG/KG	63	5%	100		0	3	60	20	U	21	U	21	U	20	U	21	U
Alpha-BHC	UG/KG	24	5%	20		1	3	58	0.96	U	1	U			0.99	U	11	U
Beta-BHC	UG/KG	2.2	2%	36		0	1	58	0.96	U	1	U			0.99	U	11	U
Heptachlor	UG/KG	13	3%	42		0	2	58	0.96	U	1	U			0.99	U	11	U
Heptachlor epoxide	UG/KG	1.7	2%			0	1	58	0.96	U	1	U			0.99	U	11	U
Metals																		
Aluminum	MG/KG	14900	100%			0	58	58	10300		14300				12800		13900	
Antimony	MG/KG	0.81	3%			0	1	36	0.5	UJ	0.5	UJ			0.464	U	0.482	U
Arsenic	MG/KG	6.4	100%	13		0	58	58	3.5		4.1				5.1		4.4	J
Barium	MG/KG	223	100%	350		0	58	58	63.1		87.6				102		103	
Beryllium	MG/KG	0.778	100%	7.2		0	58	58	0.54	J	0.76				0.67		0.717	
Cadmium	MG/KG	3	34%	2.5		1	20	58	0.56	U	0.58	U			0.58	U	0.31	J
Calcium	MG/KG	142000	100%			0	58	58	76200		22100				41500		29400	

Attachment A Table 1
Soil Samples Considered in Updated Risk Assessment
SEAD-12 Disposal Pit A/B

Seneca Army Depot Activity
Romulus, NY

							Area		SEAD-12 A/B		SEAD-12 A/B		SEAD-12 A/B		SEAD-12 A/B		SEAD-12 A/B				
							Location_Id		S12EXSW-O-8-02		S12EXSW-O-8-03		S12EXSW-O-8-06		S12STOCK-C1-01		S12STOCK-C1-02				
							Matrix		SOIL		SOIL		SOIL		SOIL		SOIL				
							Sample_Id		S12EXSW-O-8-02		S12EXSW-O-8-03		S12EXSW-O-8-05		S12STOCK-C1-01		S12STOCK-C1-02				
							Samp_Depth_Top		0		0		0		0		0				
							Samp_Depth_Bot		0		0		0.2		0.2		0.2				
							Sample_Date		08/05/09		08/05/09		10/09/09		07/30/09		08/06/09				
									SA		SA		SA		SA		SA				
		Maximum	Frequency			Number	Number	Number	RA		RA		RA		RA		RA				
		Concentration	of	Action		of	of Times	of	Pit B		Pit B		Pit B		Over/C1		Over/C1				
Parameter	**Units**	**Detected**	**Detection**	**Level (1)**		**Exceedances**	**Detected**	**Samples**	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)			
Chromium	MG/KG	46.7	100%	30		1	58	58	16.5		22.3				19.3		19.9				
Cobalt	MG/KG	15.2	100%			0	58	58	9.9		11.7				10.8		10.1				
Copper	MG/KG	41	100%	50		0	58	58	23.7		28.5				21.3		21.3				
Cyanide	MG/KG	1.6	7%	27		0	4	58	0.42	U	0.42	U			0.5	U	0.5	U			
Iron	MG/KG	27800	100%			0	58	58	19900		25500				21700		22500				
Lead	MG/KG	33.3	100%	63		0	58	58	9.2	J	11.9	J			17.3		18.4	J			
Magnesium	MG/KG	37400	100%			0	58	58	11400	J	7060	J			10300		7550				
Manganese	MG/KG	1030	100%	1600		0	58	58	475		566				651		614				
Mercury	MG/KG	0.11	60%	0.18		0	35	58	0.018	J	0.034	J			0.037	J	0.045				
Nickel	MG/KG	48.9	95%	30		20	55	58	27.7		**34.9**				27.8		27.7				
Potassium	MG/KG	2110	100%			0	58	58	1840	J	1910	J			1740		1690				
Selenium	MG/KG	1.9	13%	3.9		0	6	48	0.2	U	1.2	U			1.1	J	1.5	R			
Sodium	MG/KG	180	78%			0	45	58	130		80	J			90.3	J	77.9	J			
Thallium	MG/KG	1.8	9%			0	5	58	0.7	U	0.7	U			0.817	U	0.424	U			
Vanadium	MG/KG	27.3	100%			0	58	58	19		24.8				22.8		24.3				
Zinc	MG/KG	110	100%	109		1	58	58	53.2	J	57.8	J			76.7	J	84.9				

Attachment A Table 1
Soil Samples Considered in Updated Risk Assessment
SEAD-12 Disposal Pit A/B

Seneca Army Depot Activity
Romulus, NY

								Area		SEAD-12 A/B		SEAD-12 A/B		SEAD-12 A/B		SEAD-12 A/B		SEAD-12 A/B	
								Location_Id		S12STOCK-C1-03		S12STOCK-C1-04		S12STOCK-C1-05		S12STOCK-C1-06		S12STOCK-C1-07	
								Matrix		SOIL		SOIL		SOIL		SOIL		SOIL	
								Sample_Id		S12STOCK-C1-03		S12STOCK-C1-04		S12STOCK-C1-05		S12STOCK-C1-06		S12STOCK-C1-07	
								Samp_Depth_Top		0		0		0		0		0	
								Samp_Depth_Bot		0.2		0.2		0.2		0.2		0.2	
								Sample_Date		08/06/09		08/06/09		08/06/09		08/06/09		08/06/09	
										SA		SA		SA		SA		SA	
		Maximum	Frequency			Number	Number	Number		RA		RA		RA		RA		RA	
		Concentration	of	Action		of	of Times	of		Over/C1		Over/C1		Over/C1		Over/C1		Over/C1	
Parameter	**Units**	**Detected**	**Detection**	**Level (1)**		**Exceedances**	**Detected**	**Samples**		Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)
Acetone	UG/KG	52	21%	50		1	12	58		1.8	UJ	23	UJ	1.8	UJ	1.8	UJ	1.8	UJ
Carbon disulfide	UG/KG	2.5	2%			0	1	58		0.59	U	0.6	U	0.6	U	0.59	U	0.6	U
Ethyl benzene	UG/KG	49	5%	1000		0	3	58		1.1	U	1.1	U	1.1	U	1.1	U	1.1	U
Meta/Para Xylene	UG/KG	1.3	3%	260		0	1	33		1.1	U	1.1	U	1.1	U	1.1	U	1.1	U
Methyl ethyl ketone	UG/KG	1.1	2%	120		0	1	58		0.88	U	0.89	U	0.9	U	0.88	U	0.89	U
Methylene chloride	UG/KG	1	7%	50		0	4	58		0.44	U	0.45	U	0.45	U	0.44	U	0.45	U
Styrene	UG/KG	0.57	3%			0	2	58		0.53	U	0.53	U	0.53	U	0.52	U	0.53	U
Toluene	UG/KG	15	36%	700		0	21	58		0.37	U	0.43	J	0.38	U	0.83	J	0.38	U
Total Xylenes	UG/KG	520	8%	260		1	2	25											
Trichloroethene	UG/KG	11	21%	470		0	12	58		0.47	U	0.47	U	0.47	U	0.46	U	0.47	U
Semoivolatile Organic Compounds																			
2-Methylnaphthalene	UG/KG	56	3%			0	2	58		37	U	38	U	38	U	37	U	38	U
Acenaphthene	UG/KG	23	2%	20000		0	1	58		46	U	46	U	46	U	45	U	46	U
Anthracene	UG/KG	58	12%	100000		0	7	58		58	J	43	U	44	U	43	U	58	J
Benzo(a)anthracene	UG/KG	190	26%	1000		0	15	58		190	J	99	J	120	J	77	J	83	J
Benzo(a)pyrene	UG/KG	140	26%	1000		0	15	58		140	J	71	J	87	J	70	J	80	J
Benzo(b)fluoranthene	UG/KG	170	24%	1000		0	14	58		170	J	89	J	92	J	75	J	80	J
Benzo(ghi)perylene	UG/KG	6.7	5%	100000		0	3	58		110	U	110	U	110	U	110	U	110	U
Benzo(k)fluoranthene	UG/KG	150	21%	800		0	12	58		150	J	70	J	95	J	62	J	79	J
Bis(2-Ethylhexyl)phthalate	UG/KG	930	24%			0	14	58		82	J	81	J	74	J	64	U	64	U
Butylbenzylphthalate	UG/KG	5.1	2%			0	1	58		47	U	47	U	47	U	46	U	47	U
Chrysene	UG/KG	250	28%	1000		0	16	58		250	J	120	J	160	J	91	J	97	J
Di-n-butylphthalate	UG/KG	4	2%			0	1	58		160	U	160	U	160	U	160	U	160	U
Di-n-octylphthalate	UG/KG	45	17%			0	10	58		39	U	39	U	39	U	38	U	39	U
Dibenz(a,h)anthracene	UG/KG	6	2%	330		0	1	58		44	U	45	U	45	U	44	U	45	U
Fluoranthene	UG/KG	320	28%	100000		0	16	58		320	J	190	J	230	J	130	J	190	J
Fluorene	UG/KG	10	2%	30000		0	1	58		37	U	38	U	38	U	37	U	38	U
Indeno(1,2,3-cd)pyrene	UG/KG	93	19%	500		0	11	58		93	J	48	J	55	J	48	J	60	J
Naphthalene	UG/KG	600	3%	12000		0	2	58		34	U	34	U	34	U	34	U	34	U
Phenanthrene	UG/KG	240	26%	100000		0	15	58		110	J	52	J	71	J	54	J	98	J
Pyrene	UG/KG	290	28%	100000		0	16	58		290	J	160	J	190	J	120	J	150	J
Pesticides/PCBs																			
Aroclor-1254	UG/KG	63	5%	100		0	3	60		20	U	20	U	20	U	20	U	54	
Alpha-BHC	UG/KG	24	5%	20		1	3	58		9.8	U	9.8	U	9.9	U	9.7	U	9.8	U
Beta-BHC	UG/KG	2.2	2%	36		0	1	58		9.8	U	9.8	U	9.9	U	9.7	U	9.8	U
Heptachlor	UG/KG	13	3%	42		0	2	58		9.8	U	9.8	U	9.9	U	9.7	U	9.8	U
Heptachlor epoxide	UG/KG	1.7	2%			0	1	58		9.8	U	9.8	U	9.9	U	9.7	U	9.8	U
Metals																			
Aluminum	MG/KG	14900	100%			0	58	58		14300		13900		13800		12900		14400	
Antimony	MG/KG	0.81	3%			0	1	36		0.449	U	0.465	U	0.455	U	0.459	U	0.456	U
Arsenic	MG/KG	6.4	100%	13		0	58	58		4.8	J	4.2	J	4	J	4	J	3.9	J
Barium	MG/KG	223	100%	350		0	58	58		101		93.8		98.3		92.8		96.7	
Beryllium	MG/KG	0.778	100%	7.2		0	58	58		0.728		0.688		0.698		0.645		0.727	
Cadmium	MG/KG	3	34%	2.5		1	20	58		0.355	J	0.334	J	0.358	J	0.335	J	0.371	J
Calcium	MG/KG	142000	100%			0	58	58		37400		38600		32300		66700		43100	

Attachment A Table 1
Soil Samples Considered in Updated Risk Assessment
SEAD-12 Disposal Pit A/B

Seneca Army Depot Activity
Romulus, NY

							Area	SEAD-12 A/B		SEAD-12 A/B		SEAD-12 A/B		SEAD-12 A/B		SEAD-12 A/B	
							Location_Id	S12STOCK-C1-03		S12STOCK-C1-04		S12STOCK-C1-05		S12STOCK-C1-06		S12STOCK-C1-07	
							Matrix	SOIL		SOIL		SOIL		SOIL		SOIL	
							Sample_Id	S12STOCK-C1-03		S12STOCK-C1-04		S12STOCK-C1-05		S12STOCK-C1-06		S12STOCK-C1-07	
							Samp_Depth_Top	0		0		0		0		0	
							Samp_Depth_Bot	0.2		0.2		0.2		0.2		0.2	
							Sample_Date	08/06/09		08/06/09		08/06/09		08/06/09		08/06/09	
								SA		SA		SA		SA		SA	
		Maximum	Frequency			Number	Number	Number		RA		RA		RA		RA	
		Concentration	of	Action	Number	of Times	of	Over/C1		Over/C1		Over/C1		Over/C1		Over/C1	
Parameter	**Units**	**Detected**	**Detection**	**Level (1)**	**of Exceedances**	**Detected**	**Samples**	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)
Chromium	MG/KG	46.7	100%	30	1	58	58	21.5		20.6		20.8		19.4		22	
Cobalt	MG/KG	15.2	100%		0	58	58	12.5		9.9		9.7		8.9		10.7	
Copper	MG/KG	41	100%	50	0	58	58	24.4		21.6		22.6		21.4		23.7	
Cyanide	MG/KG	1.6	7%	27	0	4	58	0.42	U	0.5	U	0.42	U	0.42	U	0.5	U
Iron	MG/KG	27800	100%		0	58	58	23200		23400		22500		20200		23800	
Lead	MG/KG	33.3	100%	63	0	58	58	23.8	J	18.6	J	20.7	J	18.4	J	19.9	J
Magnesium	MG/KG	37400	100%		0	58	58	9580		10700		8950		10000		8900	
Manganese	MG/KG	1030	100%	1600	0	58	58	572		536		502		537		524	
Mercury	MG/KG	0.11	60%	0.18	0	35	58	0.045		0.048		0.046		0.038		0.05	
Nickel	MG/KG	48.9	95%	30	20	55	58	**32.3**		28.8		28.6		26.3		**32.3**	
Potassium	MG/KG	2110	100%		0	58	58	2110		1970		1750		2030		2080	
Selenium	MG/KG	1.9	13%	3.9	0	6	48	1.2	R	1.2	R	1.3	R	0.523	R	1	R
Sodium	MG/KG	180	78%		0	45	58	95.2	J	86	J	81.1	J	103	J	95.9	J
Thallium	MG/KG	1.8	9%		0	5	58	0.395	U	0.409	U	0.401	U	0.404	U	0.401	U
Vanadium	MG/KG	27.3	100%		0	58	58	24.4		25.4		24.1		23.6		25	
Zinc	MG/KG	110	100%	109	1	58	58	91.1		106		92.7		91.9		102	

Attachment A Table 1
Soil Samples Considered in Updated Risk Assessment
SEAD-12 Disposal Pit A/B

Seneca Army Depot Activity
Romulus, NY

								Area		SEAD-12 A/B		SEAD-12 A/B		SEAD-12 A/B		SEAD-12 A/B		SEAD-12 A/B	
								Location_Id		S12STOCK-C1-08		S12STOCK-C1-09		S12STOCK-C1-10		S12STOCK-C1-11		S12STOCK-C1-11	
								Matrix		SOIL		SOIL		SOIL		SOIL		SOIL	
								Sample_Id		S12STOCK-C1-08		S12STOCK-C1-09		S12STOCK-C1-10		S12STOCK-C1-12		S12STOCK-C1-11	
								Samp_Depth_Top		0		0		0		0		0	
								Samp_Depth_Bot		0.2		0.2		0.2		0.2		0.2	
								Sample_Date		08/06/09		08/06/09		08/06/09		08/06/09		08/06/09	
										SA		SA		SA		DU		SA	
		Maximum	Frequency							RA		RA		RA		RA		RA	
		Concentration	of	Action	Number	Number	Number			Over/C1		Over/C1		Over/C1		Over/C1		Over/C1	
Parameter	**Units**	**Detected**	**Detection**	**Level (1)**	**of Exceedances**	**of Times Detected**	**of Samples**			Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)
Acetone	UG/KG	52	21%	50	1	12	58			1.8	UJ	1.8	UJ	1.8	UJ	1.8	UJ	1.8	UJ
Carbon disulfide	UG/KG	2.5	2%		0	1	58			0.6	U	0.61	U	0.6	U	0.59	U	0.61	U
Ethyl benzene	UG/KG	49	5%	1000	0	3	58			1.1	U	1.1	U	1.1	U	1.1	U	1.1	U
Meta/Para Xylene	UG/KG	1.3	3%	260	0	1	33			1.1	U	1.2	U	1.1	U	1.1	U	1.2	U
Methyl ethyl ketone	UG/KG	1.1	2%	120	0	1	58			0.89	U	0.91	U	0.9	U	0.88	U	0.91	U
Methylene chloride	UG/KG	1	7%	50	0	4	58			0.48	J	0.46	U	0.5	J	0.44	U	0.46	U
Styrene	UG/KG	0.57	3%		0	2	58			0.53	U	0.54	U	0.53	U	0.53	U	0.54	U
Toluene	UG/KG	15	36%	700	0	21	58			0.38	U	0.39	U	0.38	U	0.67	J	0.38	U
Total Xylenes	UG/KG	520	8%	260	1	2	25												
Trichloroethene	UG/KG	11	21%	470	0	12	58			0.47	U	0.48	U	0.47	U	0.47	U	0.48	U
Semoivolatile Organic Compounds																			
2-Methylnaphthalene	UG/KG	56	3%		0	2	58			38	U	39	U	120	U	37	U	38	U
Acenaphthene	UG/KG	23	2%	20000	0	1	58			46	U	47	U	140	U	46	U	47	U
Anthracene	UG/KG	58	12%	100000	0	7	58			51	J	45	U	140	U	43	UJ	48	J
Benzo(a)anthracene	UG/KG	190	26%	1000	0	15	58			160	J	72	J	140	U	52	J	140	J
Benzo(a)pyrene	UG/KG	140	26%	1000	0	15	58			130	J	59	J	120	U	47	J	120	J
Benzo(b)fluoranthene	UG/KG	170	24%	1000	0	14	58			160	J	63	J	170	U	55	UJ	120	J
Benzo(ghi)perylene	UG/KG	6.7	5%	100000	0	3	58			110	U	110	U	320	U	110	U	110	U
Benzo(k)fluoranthene	UG/KG	150	21%	800	0	12	58			110	J	58	U	170	U	56	UJ	100	J
Bis(2-Ethylhexyl)phthalate	UG/KG	930	24%		0	14	58			130	J	100	J	200	U	64	UJ	70	J
Butylbenzylphthalate	UG/KG	5.1	2%		0	1	58			47	U	48	U	150	U	47	U	48	U
Chrysene	UG/KG	250	28%	1000	0	16	58			190	J	88	J	150	U	57	J	140	J
Di-n-butylphthalate	UG/KG	4	2%		0	1	58			160	U	170	U	480	U	160	U	160	U
Di-n-octylphthalate	UG/KG	45	17%		0	10	58			39	U	40	U	120	U	39	U	40	U
Dibenz(a,h)anthracene	UG/KG	6	2%	330	0	1	58			45	U	46	U	140	U	44	U	46	U
Fluoranthene	UG/KG	320	28%	100000	0	16	58			320	J	140	J	140	U	91	J	320	J
Fluorene	UG/KG	10	2%	30000	0	1	58			38	U	39	U	120	U	37	U	38	U
Indeno(1,2,3-cd)pyrene	UG/KG	93	19%	500	0	11	58			73	J	44	U	130	U	42	UJ	79	J
Naphthalene	UG/KG	600	3%	12000	0	2	58			34	U	35	U	110	U	34	U	35	U
Phenanthrene	UG/KG	240	26%	100000	0	15	58			87	J	60	J	150	U	47	U	240	J
Pyrene	UG/KG	290	28%	100000	0	16	58			260	J	120	J	130	U	76	J	250	J
Pesticides/PCBs																			
Aroclor-1254	UG/KG	63	5%	100	0	3	60			20	U	21	U	20	U	20	U	21	U
Alpha-BHC	UG/KG	24	5%	20	1	3	58			9.9	U	11	U	9.9	U	9.8	U	10	U
Beta-BHC	UG/KG	2.2	2%	36	0	1	58			9.9	U	11	U	9.9	U	9.8	U	10	U
Heptachlor	UG/KG	13	3%	42	0	2	58			9.9	U	11	U	9.9	U	9.8	U	10	U
Heptachlor epoxide	UG/KG	1.7	2%		0	1	58			9.9	U	11	U	9.9	U	9.8	U	10	U
Metals																			
Aluminum	MG/KG	14900	100%		0	58	58			14900		14600		13200		13900		13600	
Antimony	MG/KG	0.81	3%		0	1	36			0.467	U	0.473	U	0.469	U	0.458	U	0.474	UJ
Arsenic	MG/KG	6.4	100%	13	0	58	58			4.5	J	3.9	J	3.9	J	3.4	J	4.5	J
Barium	MG/KG	223	100%	350	0	58	58			98		105		88.8		90.2		94.7	
Beryllium	MG/KG	0.778	100%	7.2	0	58	58			0.742		0.737		0.683		0.684		0.68	
Cadmium	MG/KG	3	34%	2.5	1	20	58			0.343	J	0.336	J	0.325	J	0.293	J	0.358	J
Calcium	MG/KG	142000	100%		0	58	58			28300		34900		57800		35000		42400	J

Attachment A Table 1
Soil Samples Considered in Updated Risk Assessment
SEAD-12 Disposal Pit A/B

Seneca Army Depot Activity
Romulus, NY

							Area	SEAD-12 A/B		SEAD-12 A/B		SEAD-12 A/B		SEAD-12 A/B		SEAD-12 A/B	
							Location_Id	S12STOCK-C1-08		S12STOCK-C1-09		S12STOCK-C1-10		S12STOCK-C1-11		S12STOCK-C1-11	
							Matrix	SOIL		SOIL		SOIL		SOIL		SOIL	
							Sample_Id	S12STOCK-C1-08		S12STOCK-C1-09		S12STOCK-C1-10		S12STOCK-C1-12		S12STOCK-C1-11	
							Samp_Depth_Top	0		0		0		0		0	
							Samp_Depth_Bot	0.2		0.2		0.2		0.2		0.2	
							Sample_Date	08/06/09		08/06/09		08/06/09		08/06/09		08/06/09	
								SA		SA		SA		DU		SA	
		Maximum	Frequency			Number	Number	Number		RA		RA		RA		RA	
		Concentration	of	Action		of	of Times	of		Over/C1		Over/C1		Over/C1		Over/C1	
Parameter	**Units**	**Detected**	**of Detection**	**Level (1)**		**Exceedances**	**Detected**	**Samples**		Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)
Chromium	MG/KG	46.7	100%	30		1	58	58		22.4		20.5		20.1		21.6		20.4	
Cobalt	MG/KG	15.2	100%			0	58	58		11.3		10		9.9		10.1		10.9	
Copper	MG/KG	41	100%	50		0	58	58		24.2		21.6		23.6		22.5		23.4	
Cyanide	MG/KG	1.6	7%	27		0	4	58		0.42	U	0.5	U	0.42	U	0.5	U	0.5	U
Iron	MG/KG	27800	100%			0	58	58		26300		23600		23000		25200		24300	
Lead	MG/KG	33.3	100%	63		0	58	58		20.3	J	19.2	J	19.9	J	16.6	J	33.2	J
Magnesium	MG/KG	37400	100%			0	58	58		7720		8590		10200		8090		10000	
Manganese	MG/KG	1030	100%	1600		0	58	58		615		587		491		518		559	
Mercury	MG/KG	0.11	60%	0.18		0	35	58		0.002	U	0.047		0.037	J	0.043		0.049	
Nickel	MG/KG	48.9	95%	30		20	55	58		**31.4**		26.8		29.6		**30.8**		**30.8**	
Potassium	MG/KG	2110	100%			0	58	58		1750		2070		2020		1670		1750	
Selenium	MG/KG	1.9	13%	3.9		0	6	48		0.96	R	0.897	R	0.203	U	0.859	R	1.1	R
Sodium	MG/KG	180	78%			0	45	58		75.9	J	81.8	J	105	J	89.4	J	95.1	J
Thallium	MG/KG	1.8	9%			0	5	58		0.617	U	0.416	U	0.413	U	0.403	U	0.417	U
Vanadium	MG/KG	27.3	100%			0	58	58		25.8		27.3		24.2		23.7		23.8	
Zinc	MG/KG	110	100%	109		1	58	58		98		92.1		99.6		89.9		109	

Attachment A Table 1
Soil Samples Considered in Updated Risk Assessment
SEAD-12 Disposal Pit A/B

Seneca Army Depot Activity
Romulus, NY

								Area	SEAD-12 A/B		SEAD-12 A/B		SEAD-12 A/B		SEAD-12 A/B		SEAD-12 A/B	
								Location_Id	MW12-10		MW12-11		MW12-12		MW12-13		MW12-8	
								Matrix	SOIL		SOIL		SOIL		SOIL		SOIL	
								Sample_Id	123007		123010		123013		123016		123183	
								Samp_Depth_Top	0		0		0		0		0	
								Samp_Depth_Bot	0.2		0.2		0.2		0.2		0.2	
								Sample_Date	09/29/98		09/29/98		09/30/98		10/01/98		10/28/98	
									SA		SA		SA		SA		SA	
		Maximum	Frequency			Number	Number	Number	RI		RI		RI		RI		RI	
Parameter	**Units**	**Concentration Detected**	**of Detection**	**Action Level (1)**	**Number of Exceedances**	**of Times Detected**	**of Samples**		Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)
Acetone	UG/KG	52	21%	50	1	12	58		11	U	11	U	12	U	12	UJ	52	
Carbon disulfide	UG/KG	2.5	2%		0	1	58		11	U	11	U	12	U	12	U	13	U
Ethyl benzene	UG/KG	49	5%	1000	0	3	58		11	U	11	U	12	U	12	U	13	U
Meta/Para Xylene	UG/KG	1.3	3%	260	0	1	33											
Methyl ethyl ketone	UG/KG	1.1	2%	120	0	1	58		11	U	11	U	12	U	12	U	13	U
Methylene chloride	UG/KG	1	7%	50	0	4	58		11	U	11	U	1	J	12	U	13	U
Styrene	UG/KG	0.57	3%		0	2	58		11	U	11	U	12	U	12	U	13	U
Toluene	UG/KG	15	36%	700	0	21	58		11	U	11	U	12	U	12	U	13	U
Total Xylenes	UG/KG	520	8%	260	1	2	25		11	U	11	U	12	U	12	U	13	U
Trichloroethene	UG/KG	11	21%	470	0	12	58		11	U	11	U	12	U	12	U	13	U
Semoivolatile Organic Compounds																		
2-Methylnaphthalene	UG/KG	56	3%		0	2	58		77	UJ	72	UJ	80	UJ	78	UJ	83	U
Acenaphthene	UG/KG	23	2%	20000	0	1	58		77	UJ	72	UJ	80	UJ	78	U	83	U
Anthracene	UG/KG	58	12%	100000	0	7	58		77	UJ	72	UJ	80	UJ	78	U	83	U
Benzo(a)anthracene	UG/KG	190	26%	1000	0	15	58		77	U	72	U	80	U	4.5	J	6.4	J
Benzo(a)pyrene	UG/KG	140	26%	1000	0	15	58		77	UJ	72	UJ	80	UJ	5	J	8	J
Benzo(b)fluoranthene	UG/KG	170	24%	1000	0	14	58		77	U	72	U	80	U	5.9	J	9.7	J
Benzo(ghi)perylene	UG/KG	6.7	5%	100000	0	3	58		77	U	72	U	80	U	4	J	6.6	J
Benzo(k)fluoranthene	UG/KG	150	21%	800	0	12	58		77	U	72	U	80	U	7.6	J	7.4	J
Bis(2-Ethylhexyl)phthalate	UG/KG	930	24%		0	14	58		77	U	72	U	210		11	J	83	U
Butylbenzylphthalate	UG/KG	5.1	2%		0	1	58		77	U	72	U	80	U	78	U	83	U
Chrysene	UG/KG	250	28%	1000	0	16	58		4.3	J	72	UJ	80	UJ	6.8	J	9.1	J
Di-n-butylphthalate	UG/KG	4	2%		0	1	58		77	UJ	72	UJ	80	UJ	78	UJ	83	U
Di-n-octylphthalate	UG/KG	45	17%		0	10	58		77	U	72	U	80	U	78	U	83	U
Dibenz(a,h)anthracene	UG/KG	6	2%	330	0	1	58		77	U	72	U	80	U	78	U	83	U
Fluoranthene	UG/KG	320	28%	100000	0	16	58		5.5	J	72	UJ	80	UJ	9.1	J	14	J
Fluorene	UG/KG	10	2%	30000	0	1	58		77	U	72	U	80	U	78	U	83	U
Indeno(1,2,3-cd)pyrene	UG/KG	93	19%	500	0	11	58		77	U	72	U	80	U	78	U	6.1	J
Naphthalene	UG/KG	600	3%	12000	0	2	58		77	UJ	72	UJ	80	UJ	78	U	83	U
Phenanthrene	UG/KG	240	26%	100000	0	15	58		77	U	72	U	80	U	6.5	J	7.8	J
Pyrene	UG/KG	290	28%	100000	0	16	58		4.2	J	72	U	80	U	9.1	J	22	J
Pesticides/PCBs																		
Aroclor-1254	UG/KG	63	5%	100	0	3	60		38	U	36	U	40	U	40	U	42	U
Alpha-BHC	UG/KG	24	5%	20	1	3	58		2	U	1.9	U	2	U	2	U	2.2	U
Beta-BHC	UG/KG	2.2	2%	36	0	1	58		2	U	1.9	U	2	U	2	U	2.2	U
Heptachlor	UG/KG	13	3%	42	0	2	58		2	U	1.9	U	2	U	2	U	2.2	U
Heptachlor epoxide	UG/KG	1.7	2%		0	1	58		2	U	1.9	U	2	U	2	U	2.2	U
Metals																		
Aluminum	MG/KG	14900	100%		0	58	58		10100		10600		11800		9960		11700	
Antimony	MG/KG	0.81	3%		0	1	36		1.1	UR	1.1	UR	1.3	UR	1.2	UR	1.5	UR
Arsenic	MG/KG	6.4	100%	13	0	58	58		3.5		4		3.3		3.2		3.1	
Barium	MG/KG	223	100%	350	0	58	58		64.5		50.3		58.9		78.6		76.1	
Beryllium	MG/KG	0.778	100%	7.2	0	58	58		0.38	J	0.39	J	0.44	J	0.32	J	0.58	J
Cadmium	MG/KG	3	34%	2.5	1	20	58		0.06	U	0.05	U	0.06	U	0.06	U	0.43	U
Calcium	MG/KG	142000	100%		0	58	58		46500		1230		11800		1640	J	4240	

Attachment A Table 1
Soil Samples Considered in Updated Risk Assessment
SEAD-12 Disposal Pit A/B

Seneca Army Depot Activity
Romulus, NY

							Area	SEAD-12 A/B		SEAD-12 A/B		SEAD-12 A/B		SEAD-12 A/B		SEAD-12 A/B	
							Location_Id	MW12-10		MW12-11		MW12-12		MW12-13		MW12-8	
							Matrix	SOIL		SOIL		SOIL		SOIL		SOIL	
							Sample_Id	123007		123010		123013		123016		123183	
							Samp_Depth_Top	0		0		0		0		0	
							Samp_Depth_Bot	0.2		0.2		0.2		0.2		0.2	
							Sample_Date	09/29/98		09/29/98		09/30/98		10/01/98		10/28/98	
								SA		SA		SA		SA		SA	
		Maximum	Frequency		Number	Number	Number	RI		RI		RI		RI		RI	
Parameter	**Units**	**Concentration Detected**	**of Detection**	**Action Level (1)**	**of Exceedances**	**of Times Detected**	**of Samples**	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)
Chromium	MG/KG	46.7	100%	30	1	58	58	15.2		14.4		21.5		13		15.1	J
Cobalt	MG/KG	15.2	100%		0	58	58	8.9	J	8.2	J	13.1		8	J	8.6	J
Copper	MG/KG	41	100%	50	0	58	58	20.1		14.9		32.5		13.4		15.1	
Cyanide	MG/KG	1.6	7%	27	0	4	58	0.58	U	0.56	U	0.64	U	1.2	J	1.6	
Iron	MG/KG	27800	100%		0	58	58	20800	J	19700	J	27100	J	16300		19500	
Lead	MG/KG	33.3	100%	63	0	58	58	11.4		13.1		15.5		15.2	J	15.7	J
Magnesium	MG/KG	37400	100%		0	58	58	9420		3150		6460		2340		3120	
Manganese	MG/KG	1030	100%	1600	0	58	58	478		327		501		783		701	
Mercury	MG/KG	0.11	60%	0.18	0	35	58	0.11	J	0.05	UJ	0.06	UJ	0.09	J	0.06	U
Nickel	MG/KG	48.9	95%	30	20	55	58	24		17.6		**39.9**		16.2		16.3	UJ
Potassium	MG/KG	2110	100%		0	58	58	1190		925		1270		806	J	1170	J
Selenium	MG/KG	1.9	13%	3.9	0	6	48	0.86	U	0.83	U	0.94	U	0.89	UJ	0.55	U
Sodium	MG/KG	180	78%		0	45	58	47	U	45.7	U	51.7	U	48.9	U	60	U
Thallium	MG/KG	1.8	9%		0	5	58	0.97	U	0.94	U	1.1	U	1.6	U	1.8	J
Vanadium	MG/KG	27.3	100%		0	58	58	17.6		18.3		17.7		17.6		20.8	
Zinc	MG/KG	110	100%	109	1	58	58	50.1		45		81.4		46.1		53.6	J

Attachment A Table 1
Soil Samples Considered in Updated Risk Assessment
SEAD-12 Disposal Pit A/B

Seneca Army Depot Activity
Romulus, NY

								Area	SEAD-12 A/B	SEAD-12 A/B	SEAD-12 A/B	SEAD-12 A/B	SEAD-12 A/B
								Location_Id	MW12-10	MW12-10	MW12-11	MW12-11	MW12-12
								Matrix	SOIL	SOIL	SOIL	SOIL	SOIL
								Sample_Id	123008	123009	123011	123012	123014
								Samp_Depth_Top	4	8	4	8	4
								Samp_Depth_Bot	5.7	9.8	5.6	10	6
								Sample_Date	09/29/98	09/29/98	09/29/98	09/29/98	09/30/98
									SA	SA	SA	SA	SA
		Maximum	Frequency		Number	Number	Number		RI	RI	RI	RI	RI
Parameter	**Units**	**Concentration Detected**	**of Detection**	**Action Level (1)**	**of Exceedances**	**of Times Detected**	**of Samples**	Value (Q)		Value (Q)		Value (Q)		Value (Q)		Value (Q)	
Acetone	UG/KG	52	21%	50	1	12	58	3	J	4	J	4	J	4	J	12	U
Carbon disulfide	UG/KG	2.5	2%		0	1	58	11	U	12	U	11	U	11	U	12	U
Ethyl benzene	UG/KG	49	5%	1000	0	3	58	11	U	12	U	11	U	11	U	12	U
Meta/Para Xylene	UG/KG	1.3	3%	260	0	1	33										
Methyl ethyl ketone	UG/KG	1.1	2%	120	0	1	58	11	U	12	U	11	U	11	U	12	U
Methylene chloride	UG/KG	1	7%	50	0	4	58	11	U	12	U	11	U	11	U	12	U
Styrene	UG/KG	0.57	3%		0	2	58	11	U	12	U	11	U	11	U	12	U
Toluene	UG/KG	15	36%	700	0	21	58	11	U	12	U	11	U	11	U	12	U
Total Xylenes	UG/KG	520	8%	260	1	2	25	11	U	12	U	11	U	11	U	12	U
Trichloroethene	UG/KG	11	21%	470	0	12	58	11	U	12	U	11	U	11	U	12	U
Semoivolatile Organic Compounds																	
2-Methylnaphthalene	UG/KG	56	3%		0	2	58	73	UJ	74	UJ	72	UJ	70	UJ	81	UJ
Acenaphthene	UG/KG	23	2%	20000	0	1	58	73	UJ	74	UJ	72	UJ	70	UJ	81	UJ
Anthracene	UG/KG	58	12%	100000	0	7	58	73	UJ	74	UJ	72	UJ	70	UJ	81	UJ
Benzo(a)anthracene	UG/KG	190	26%	1000	0	15	58	73	UJ	74	U	72	U	70	U	81	U
Benzo(a)pyrene	UG/KG	140	26%	1000	0	15	58	73	U	74	UJ	72	UJ	70	UJ	81	UJ
Benzo(b)fluoranthene	UG/KG	170	24%	1000	0	14	58	73	UJ	74	U	72	U	70	U	81	U
Benzo(ghi)perylene	UG/KG	6.7	5%	100000	0	3	58	73	U	74	U	72	U	70	U	81	U
Benzo(k)fluoranthene	UG/KG	150	21%	800	0	12	58	73	U	74	U	72	U	70	U	81	U
Bis(2-Ethylhexyl)phthalate	UG/KG	930	24%		0	14	58	73	U	74	U	72	U	180		81	U
Butylbenzylphthalate	UG/KG	5.1	2%		0	1	58	73	U	74	U	72	U	70	U	81	U
Chrysene	UG/KG	250	28%	1000	0	16	58	73	UJ	74	UJ	72	UJ	70	UJ	81	UJ
Di-n-butylphthalate	UG/KG	4	2%		0	1	58	73	UJ	74	UJ	72	UJ	70	UJ	81	UJ
Di-n-octylphthalate	UG/KG	45	17%		0	10	58	73	U	74	U	72	U	13	J	81	U
Dibenz(a,h)anthracene	UG/KG	6	2%	330	0	1	58	73	U	74	U	72	U	70	U	81	U
Fluoranthene	UG/KG	320	28%	100000	0	16	58	73	UJ	74	UJ	72	UJ	70	UJ	81	UJ
Fluorene	UG/KG	10	2%	30000	0	1	58	73	U	74	U	72	U	70	U	81	U
Indeno(1,2,3-cd)pyrene	UG/KG	93	19%	500	0	11	58	73	U	74	U	72	U	70	U	81	U
Naphthalene	UG/KG	600	3%	12000	0	2	58	73	UJ	74	UJ	72	UJ	70	UJ	81	UJ
Phenanthrene	UG/KG	240	26%	100000	0	15	58	73	U	74	U	72	U	4.6	J	81	U
Pyrene	UG/KG	290	28%	100000	0	16	58	73	U	74	U	72	U	70	U	81	U
Pesticides/PCBs																	
Aroclor-1254	UG/KG	63	5%	100	0	3	60	37	U	37	U	36	U	35	U	41	U
Alpha-BHC	UG/KG	24	5%	20	1	3	58	1.9	U	1.9	U	1.9	U	1.8	U	2.1	U
Beta-BHC	UG/KG	2.2	2%	36	0	1	58	1.9	U	1.9	U	1.9	U	1.8	U	2.1	U
Heptachlor	UG/KG	13	3%	42	0	2	58	1.9	U	1.9	U	1.9	U	1.8	U	2.1	U
Heptachlor epoxide	UG/KG	1.7	2%		0	1	58	1.9	U	1.9	U	1.9	U	1.8	U	2.1	U
Metals																	
Aluminum	MG/KG	14900	100%		0	58	58	8370		7210		10900		4460		14200	
Antimony	MG/KG	0.81	3%		0	1	36	1.3	UR	1.2	UR	1	UR	0.9	UR	1.5	UR
Arsenic	MG/KG	6.4	100%	13	0	58	58	3.5		3.4		2.9		0.88	J	5.9	
Barium	MG/KG	223	100%	350	0	58	58	63.9		68.7		55		17	J	112	
Beryllium	MG/KG	0.778	100%	7.2	0	58	58	0.31	J	0.27	J	0.44	J	0.17	J	0.51	J
Cadmium	MG/KG	3	34%	2.5	1	20	58	0.06	U	0.06	U	0.05	U	0.04	U	0.07	U
Calcium	MG/KG	142000	100%		0	58	58	83200		73900		46100		6980		54600	

Attachment A Table 1
Soil Samples Considered in Updated Risk Assessment
SEAD-12 Disposal Pit A/B

Seneca Army Depot Activity
Romulus, NY

							Area	SEAD-12 A/B		SEAD-12 A/B		SEAD-12 A/B		SEAD-12 A/B		SEAD-12 A/B	
							Location_Id	MW12-10		MW12-10		MW12-11		MW12-11		MW12-12	
							Matrix	SOIL		SOIL		SOIL		SOIL		SOIL	
							Sample_Id	123008		123009		123011		123012		123014	
							Samp_Depth_Top	4		8		4		8		4	
							Samp_Depth_Bot	5.7		9.8		5.6		10		6	
							Sample_Date	09/29/98		09/29/98		09/29/98		09/29/98		09/30/98	
								SA		SA		SA		SA		SA	
		Maximum	Frequency		Number	Number	Number	RI		RI		RI		RI		RI	
Parameter	**Units**	**Concentration Detected**	**of Detection**	**Action Level (1)**	**of Exceedances**	**of Times Detected**	**of Samples**	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)
Chromium	MG/KG	46.7	100%	30	1	58	58	13.9		12.4		20.4		8.5		21.1	
Cobalt	MG/KG	15.2	100%		0	58	58	7.7	J	7	J	12.9		9.1		14.3	
Copper	MG/KG	41	100%	50	0	58	58	20.3		20.5		33.7		11.5		28.4	
Cyanide	MG/KG	1.6	7%	27	0	4	58	0.55	U	0.6	U	0.53	U	0.53	U	0.63	U
Iron	MG/KG	27800	100%		0	58	58	19100	J	18100	J	27000	J	11000	J	27800	J
Lead	MG/KG	33.3	100%	63	0	58	58	7.3		6.6		16		9		11.9	
Magnesium	MG/KG	37400	100%		0	58	58	13200		17200		9010		2090		13200	
Manganese	MG/KG	1030	100%	1600	0	58	58	408		364		383		169		631	
Mercury	MG/KG	0.11	60%	0.18	0	35	58	0.05	UJ	0.06	UJ	0.05	UJ	0.06	J	0.06	UJ
Nickel	MG/KG	48.9	95%	30	20	55	58	23.2		20.3		**44**		20		**34.1**	J
Potassium	MG/KG	2110	100%		0	58	58	1270		1250		1240		397	J	1980	
Selenium	MG/KG	1.9	13%	3.9	0	6	48	0.95	U	0.92	U	0.76	U	0.68	U	1.1	U
Sodium	MG/KG	180	78%		0	45	58	96.5	J	84.9	J	81.8	J	37.1	U	61.3	U
Thallium	MG/KG	1.8	9%		0	5	58	1.1	U	1	U	0.86	U	0.77	U	1.3	U
Vanadium	MG/KG	27.3	100%		0	58	58	14.7		13.1		16.5		5.8	J	25.6	
Zinc	MG/KG	110	100%	109	1	58	58	50.3		51.6		94.9		41.5		66.8	

Attachment A Table 1
Soil Samples Considered in Updated Risk Assessment
SEAD-12 Disposal Pit A/B

Seneca Army Depot Activity
Romulus, NY

								Area		SEAD-12 A/B		SEAD-12 A/B		SEAD-12 A/B		SEAD-12 A/B		SEAD-12 A/B	
								Location_Id		MW12-12		MW12-13		MW12-13		MW12-8		MW12-8	
								Matrix		SOIL		SOIL		SOIL		SOIL		SOIL	
								Sample_Id		123015		123017		123018		123184		123185	
								Samp_Depth_Top		9		4		8		4		8	
								Samp_Depth_Bot		11		6		9.6		6		10	
								Sample_Date		09/30/98		10/01/98		10/01/98		10/28/98		10/28/98	
										SA		SA		SA		SA		SA	
		Maximum	Frequency		Number	Number	Number			RI		RI		RI		RI		RI	
Parameter	**Units**	**Concentration Detected**	**of Detection**	**Action Level (1)**	**of Exceedances**	**of Times Detected**	**of Samples**	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)
Acetone	UG/KG	52	21%	50	1	12	58	12	U	11	UJ	12	UJ	11	U	12	
Carbon disulfide	UG/KG	2.5	2%		0	1	58	12	U	11	U	12	U	11	U	11	U
Ethyl benzene	UG/KG	49	5%	1000	0	3	58	12	U	11	U	12	U	11	U	11	U
Meta/Para Xylene	UG/KG	1.3	3%	260	0	1	33										
Methyl ethyl ketone	UG/KG	1.1	2%	120	0	1	58	12	U	11	U	12	U	11	U	11	U
Methylene chloride	UG/KG	1	7%	50	0	4	58	12	U	11	U	12	U	11	U	11	U
Styrene	UG/KG	0.57	3%		0	2	58	12	U	11	U	12	U	11	U	11	U
Toluene	UG/KG	15	36%	700	0	21	58	12	U	8	J	14		11	U	11	U
Total Xylenes	UG/KG	520	8%	260	1	2	25	12	U	11	U	12	U	11	U	11	U
Trichloroethene	UG/KG	11	21%	470	0	12	58	12	U	11	U	12	U	11	U	11	U
Semoivolatile Organic Compounds																	
2-Methylnaphthalene	UG/KG	56	3%		0	2	58	81	UJ	73	UJ	76	UJ	73	U	72	U
Acenaphthene	UG/KG	23	2%	20000	0	1	58	81	UJ	73	U	76	U	73	U	72	U
Anthracene	UG/KG	58	12%	100000	0	7	58	81	UJ	73	U	76	U	73	U	72	U
Benzo(a)anthracene	UG/KG	190	26%	1000	0	15	58	81	U	73	U	76	U	73	U	72	U
Benzo(a)pyrene	UG/KG	140	26%	1000	0	15	58	81	UJ	73	U	76	U	73	U	72	U
Benzo(b)fluoranthene	UG/KG	170	24%	1000	0	14	58	81	U	73	U	76	U	73	U	72	U
Benzo(ghi)perylene	UG/KG	6.7	5%	100000	0	3	58	81	U	73	U	76	U	73	U	72	U
Benzo(k)fluoranthene	UG/KG	150	21%	800	0	12	58	81	U	73	U	76	U	73	U	72	U
Bis(2-Ethylhexyl)phthalate	UG/KG	930	24%		0	14	58	81	U	83		11	J	73	U	72	U
Butylbenzylphthalate	UG/KG	5.1	2%		0	1	58	81	U	73	U	76	U	73	U	72	U
Chrysene	UG/KG	250	28%	1000	0	16	58	81	UJ	73	U	76	U	73	U	72	U
Di-n-butylphthalate	UG/KG	4	2%		0	1	58	81	UJ	73	UJ	4	J	73	U	72	U
Di-n-octylphthalate	UG/KG	45	17%		0	10	58	4.9	J	12	J	6.9	J	19	J	45	J
Dibenz(a,h)anthracene	UG/KG	6	2%	330	0	1	58	81	U	73	U	76	U	73	U	72	U
Fluoranthene	UG/KG	320	28%	100000	0	16	58	81	UJ	73	U	76	U	73	U	72	U
Fluorene	UG/KG	10	2%	30000	0	1	58	81	U	73	U	76	U	73	U	72	U
Indeno(1,2,3-cd)pyrene	UG/KG	93	19%	500	0	11	58	81	U	73	U	76	U	73	U	72	U
Naphthalene	UG/KG	600	3%	12000	0	2	58	81	UJ	73	U	76	U	73	U	72	U
Phenanthrene	UG/KG	240	26%	100000	0	15	58	81	U	73	U	76	U	73	U	72	U
Pyrene	UG/KG	290	28%	100000	0	16	58	81	U	73	U	76	U	73	U	72	U
Pesticides/PCBs																	
Aroclor-1254	UG/KG	63	5%	100	0	3	60	41	U	37	U	38	U	37	U	36	U
Alpha-BHC	UG/KG	24	5%	20	1	3	58	2.1	U	1.9	U	2	U	1.9	U	1.9	U
Beta-BHC	UG/KG	2.2	2%	36	0	1	58	2.1	U	1.9	U	2	U	1.9	U	1.9	U
Heptachlor	UG/KG	13	3%	42	0	2	58	2.1	U	1.9	U	2	U	1.9	U	1.9	U
Heptachlor epoxide	UG/KG	1.7	2%		0	1	58	2.1	U	1.9	U	2	U	1.9	U	1.9	U
Metals																	
Aluminum	MG/KG	14900	100%		0	58	58	11200		4820		11200		7440		7550	
Antimony	MG/KG	0.81	3%		0	1	36	1.3	UR	1.2	UR	1.2	UR	1.2	UR	1.2	UR
Arsenic	MG/KG	6.4	100%	13	0	58	58	5.8		2.5		3.9		3.1		3.3	
Barium	MG/KG	223	100%	350	0	58	58	100		51.3		63.4		73.2		65.8	
Beryllium	MG/KG	0.778	100%	7.2	0	58	58	0.38	J	0.14	J	0.46	J	0.45	J	0.43	J
Cadmium	MG/KG	3	34%	2.5	1	20	58	0.06	U	0.06	U	0.06	U	0.36	U	0.35	U
Calcium	MG/KG	142000	100%		0	58	58	42900		75600	J	43100	J	87500		64400	

Attachment A Table 1
Soil Samples Considered in Updated Risk Assessment
SEAD-12 Disposal Pit A/B

Seneca Army Depot Activity
Romulus, NY

							Area	SEAD-12 A/B		SEAD-12 A/B		SEAD-12 A/B		SEAD-12 A/B		SEAD-12 A/B	
							Location_Id	MW12-12		MW12-13		MW12-13		MW12-8		MW12-8	
							Matrix	SOIL		SOIL		SOIL		SOIL		SOIL	
							Sample_Id	123015		123017		123018		123184		123185	
							Samp_Depth_Top	9		4		8		4		8	
							Samp_Depth_Bot	11		6		9.6		6		10	
							Sample_Date	09/30/98		10/01/98		10/01/98		10/28/98		10/28/98	
								SA		SA		SA		SA		SA	
		Maximum	**Frequency**					RI		RI		RI		RI		RI	
Parameter	**Units**	**Concentration Detected**	**of Detection**	**Action Level (1)**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples**	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)
Chromium	MG/KG	46.7	100%	30	1	58	58	16.2		8.2		20.5		12	J	13.3	J
Cobalt	MG/KG	15.2	100%		0	58	58	12.9		5.1	J	15.2		8.1	J	12.1	
Copper	MG/KG	41	100%	50	0	58	58	23.9		13.3		31.5		20		21.9	
Cyanide	MG/KG	1.6	7%	27	0	4	58	0.64	U	0.57	UJ	0.64	UJ	1.5		0.72	
Iron	MG/KG	27800	100%		0	58	58	22800	J	10100		25500		16500		17300	
Lead	MG/KG	33.3	100%	63	0	58	58	9.1		3.4	J	11.5	J	5.9	J	7.6	J
Magnesium	MG/KG	37400	100%		0	58	58	13700		34300		8350		16500		13400	
Manganese	MG/KG	1030	100%	1600	0	58	58	540		339		393		406		416	
Mercury	MG/KG	0.11	60%	0.18	0	35	58	0.06	UJ	0.05	U	0.06	U	0.05	U	0.05	U
Nickel	MG/KG	48.9	95%	30	20	55	58	25.8	J	12.1		**44.2**		22.9	UJ	27.6	UJ
Potassium	MG/KG	2110	100%		0	58	58	1770		760	J	1340		1300		1260	
Selenium	MG/KG	1.9	13%	3.9	0	6	48	0.97	U	0.94	UJ	0.92	UJ	0.46	U	0.57	J
Sodium	MG/KG	180	78%		0	45	58	53	U	51.4	U	84	J	99	J	49.2	U
Thallium	MG/KG	1.8	9%		0	5	58	1.1	U	1.4	U	1.2	U	1.7	J	1.5	J
Vanadium	MG/KG	27.3	100%		0	58	58	21.3		10.5		17		13.9		13.5	
Zinc	MG/KG	110	100%	109	1	58	58	52.4		31.6		105		45.4	J	57.2	J

Attachment A Table 1
Soil Samples Considered in Updated Risk Assessment
SEAD-12 Disposal Pit A/B

Seneca Army Depot Activity
Romulus, NY

								Area	SEAD-12 A/B	SEAD-12 A/B	SEAD-12 A/B	SEAD-12 A/B	SEAD-12 A/B
								Location_Id	SB12-2	SB12-2	SB12-2	SB12-4	SB12-4
								Matrix	SOIL	SOIL	SOIL	SOIL	SOIL
								Sample_Id	123113	12533	123114	12528	12529
								Samp_Depth_Top	6	8	10	2	4
								Samp_Depth_Bot	8	10	12	4	6
								Sample_Date	10/14/98	11/10/97	10/14/98	11/09/97	11/09/97
									SA	SA	SA	SA	SA
Parameter	**Units**	**Maximum Concentration Detected**	**Frequency of Detection**	**Action Level (1)**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples**		RI	RI	RI	RI	RI
									Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Acetone	UG/KG	52	21%	50	1	12	58		11 U	17 J	11 U	17 J	34 J
Carbon disulfide	UG/KG	2.5	2%		0	1	58		11 U	11 U	11 U	12 U	12 U
Ethyl benzene	UG/KG	49	5%	1000	0	3	58		11 U	11 U	11 U	12 U	12 U
Meta/Para Xylene	UG/KG	1.3	3%	260	0	1	33						
Methyl ethyl ketone	UG/KG	1.1	2%	120	0	1	58		11 U	11 U	11 U	12 U	12 U
Methylene chloride	UG/KG	1	7%	50	0	4	58		11 U	1 J	11 U	12 U	12 U
Styrene	UG/KG	0.57	3%		0	2	58		11 U	11 U	11 U	12 U	12 U
Toluene	UG/KG	15	36%	700	0	21	58		11 U	10 J	11 U	6 J	2 J
Total Xylenes	UG/KG	520	8%	260	1	2	25		11 U	11 U	11 U	12 U	12 U
Trichloroethene	UG/KG	11	21%	470	0	12	58		11 U	11 U	11 U	12 U	1 J
Semoivolatile Organic Compounds													
2-Methylnaphthalene	UG/KG	56	3%		0	2	58		72 U	74 U	73 U	80 U	75 U
Acenaphthene	UG/KG	23	2%	20000	0	1	58		72 U	74 U	73 U	80 U	75 U
Anthracene	UG/KG	58	12%	100000	0	7	58		72 U	74 U	73 U	80 U	4.4 J
Benzo(a)anthracene	UG/KG	190	26%	1000	0	15	58		72 U	74 U	73 U	80 U	5.8 J
Benzo(a)pyrene	UG/KG	140	26%	1000	0	15	58		72 U	74 U	73 U	80 U	7.1 J
Benzo(b)fluoranthene	UG/KG	170	24%	1000	0	14	58		72 U	74 U	73 U	80 U	6 J
Benzo(ghi)perylene	UG/KG	6.7	5%	100000	0	3	58		72 UJ	74 U	73 U	80 U	6.7 J
Benzo(k)fluoranthene	UG/KG	150	21%	800	0	12	58		72 U	74 U	73 U	80 U	6.4 J
Bis(2-Ethylhexyl)phthalate	UG/KG	930	24%		0	14	58		72 UJ	74 U	73 UJ	80 U	75 U
Butylbenzylphthalate	UG/KG	5.1	2%		0	1	58		72 UJ	74 U	73 UJ	80 U	5.1 J
Chrysene	UG/KG	250	28%	1000	0	16	58		72 U	74 U	73 U	80 U	5.7 J
Di-n-butylphthalate	UG/KG	4	2%		0	1	58		72 UJ	74 U	73 U	80 U	75 U
Di-n-octylphthalate	UG/KG	45	17%		0	10	58		6.2 J	74 U	10 J	5.2 J	7 J
Dibenz(a,h)anthracene	UG/KG	6	2%	330	0	1	58		72 UJ	74 U	73 U	80 U	6 J
Fluoranthene	UG/KG	320	28%	100000	0	16	58		72 U	74 U	73 U	80 U	5.1 J
Fluorene	UG/KG	10	2%	30000	0	1	58		72 U	74 U	73 U	80 U	75 U
Indeno(1,2,3-cd)pyrene	UG/KG	93	19%	500	0	11	58		72 UJ	74 U	73 U	80 U	5.7 J
Naphthalene	UG/KG	600	3%	12000	0	2	58		72 U	74 U	73 U	80 U	75 U
Phenanthrene	UG/KG	240	26%	100000	0	15	58		72 U	74 U	73 U	80 U	4.7 J
Pyrene	UG/KG	290	28%	100000	0	16	58		72 U	74 U	73 U	80 U	4.4 J
Pesticides/PCBs													
Aroclor-1254	UG/KG	63	5%	100	0	3	60		36 U	37 U	37 U	40 U	38 U
Alpha-BHC	UG/KG	24	5%	20	1	3	58		1.9 U	1.9 U	1.9 U	2 U	1.9 U
Beta-BHC	UG/KG	2.2	2%	36	0	1	58		1.9 U	1.9 U	1.9 U	2 U	1.9 U
Heptachlor	UG/KG	13	3%	42	0	2	58		1.9 U	1.9 U	1.9 U	2 U	1.9 U
Heptachlor epoxide	UG/KG	1.7	2%		0	1	58		1.9 U	1.9 U	1.9 U	2 U	1.9 U
Metals													
Aluminum	MG/KG	14900	100%		0	58	58		7890 J	9570	7010 J	11900	13100
Antimony	MG/KG	0.81	3%		0	1	36		1.1 UR	0.74 UJ	1.2 UR	0.75 UJ	0.81 J
Arsenic	MG/KG	6.4	100%	13	0	58	58		3.8 J	4	3.7 J	5.5	3.8
Barium	MG/KG	223	100%	350	0	58	58		63.3	90.5	76.4	67.4	82.1
Beryllium	MG/KG	0.778	100%	7.2	0	58	58		0.3 J	0.36	0.24 J	0.36	0.52
Cadmium	MG/KG	3	34%	2.5	1	20	58		0.05 U	0.06 U	0.06 U	0.06 U	0.07 U
Calcium	MG/KG	142000	100%		0	58	58		97000 J	90900	82100 J	35900	52000

Attachment A Table 1
Soil Samples Considered in Updated Risk Assessment
SEAD-12 Disposal Pit A/B

Seneca Army Depot Activity
Romulus, NY

						Area		SEAD-12 A/B		SEAD-12 A/B		SEAD-12 A/B		SEAD-12 A/B		SEAD-12 A/B	
						Location_Id		SB12-2		SB12-2		SB12-2		SB12-4		SB12-4	
						Matrix		SOIL		SOIL		SOIL		SOIL		SOIL	
						Sample_Id		123113		12533		123114		12528		12529	
						Samp_Depth_Top		6		8		10		2		4	
						Samp_Depth_Bot		8		10		12		4		6	
						Sample_Date		10/14/98		11/10/97		10/14/98		11/09/97		11/09/97	
								SA		SA		SA		SA		SA	
		Maximum	**Frequency**		**Number**	**Number**	**Number**	RI		RI		RI		RI		RI	
Parameter	**Units**	**Concentration Detected**	**of Detection**	**Action Level (1)**	**of Exceedances**	**of Times Detected**	**of Samples**	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)
Chromium	MG/KG	46.7	100%	30	1	58	58	14.2		14.9		11.8		16.6		23.4	
Cobalt	MG/KG	15.2	100%		0	58	58	7.6	J	7.5		7.9	J	11.9		15	
Copper	MG/KG	41	100%	50	0	58	58	22.5		19.6		24.6		18.6		32.2	
Cyanide	MG/KG	1.6	7%	27	0	4	58	0.58	U	0.64	U	0.59	U	0.73	U	0.66	U
Iron	MG/KG	27800	100%		0	58	58	16300		18400		16500		20500		27800	
Lead	MG/KG	33.3	100%	63	0	58	58	9.4	J	7.4		7.2	J	11.8		17.9	
Magnesium	MG/KG	37400	100%		0	58	58	16400	J	18200		17100	J	8050		9610	
Manganese	MG/KG	1030	100%	1600	0	58	58	448		375		451		561		430	
Mercury	MG/KG	0.11	60%	0.18	0	35	58	0.05	U	0.05	U	0.05	U	0.06	U	0.04	U
Nickel	MG/KG	48.9	95%	30	20	55	58	22.7	J	21		24.4	J	23.6		**48.9**	
Potassium	MG/KG	2110	100%		0	58	58	1120		2090	J	1220		1380	J	1740	J
Selenium	MG/KG	1.9	13%	3.9	0	6	48	0.84	U	1	U	0.89	U	1	U	1.1	U
Sodium	MG/KG	180	78%		0	45	58	134	J	129	U	78.9	J	129	U	138	U
Thallium	MG/KG	1.8	9%		0	5	58	0.95	U	1.3	U	1.1	J	1.3	U	1.4	U
Vanadium	MG/KG	27.3	100%		0	58	58	13.5		18.2		12.7		20.3		19.5	
Zinc	MG/KG	110	100%	109	1	58	58	45.3	J	45.3	J	51.3	J	61.7	J	**110**	J

Attachment A Table 1
Soil Samples Considered in Updated Risk Assessment
SEAD-12 Disposal Pit A/B

Seneca Army Depot Activity
Romulus, NY

								Area		SEAD-12 A/B		SEAD-12 A/B		SEAD-12 A/B		SEAD-12 A/B		SEAD-12 A/B	
								Location_Id		TP12-1B		TP12-1C		TP12-2A		TP12-2B		TP12-2C	
								Matrix		SOIL		SOIL		SOIL		SOIL		SOIL	
								Sample_Id		123143		123144		123145		123146		123147	
								Samp_Depth_Top		3		6		3		3.5		6	
								Samp_Depth_Bot		3		6		3		3.5		6	
								Sample_Date		10/16/98		10/16/98		10/16/98		10/16/98		10/16/98	
										SA		SA		SA		SA		SA	
		Maximum	Frequency							RI		RI		RI		RI		RI	
Parameter	**Units**	**Concentration Detected**	**of Detection**	**Action Level (1)**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples**	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)
Acetone	UG/KG	52	21%	50	1	12	58	11	UJ	12	UJ	11	UJ	28	UJ	30	UJ
Carbon disulfide	UG/KG	2.5	2%		0	1	58	11	U	12	U	11	U	28	U	30	U
Ethyl benzene	UG/KG	49	5%	1000	0	3	58	11	U	12	U	11	U	49		24	J
Meta/Para Xylene	UG/KG	1.3	3%	260	0	1	33										
Methyl ethyl ketone	UG/KG	1.1	2%	120	0	1	58	11	UJ	12	UJ	11	UJ	28	UJ	30	UJ
Methylene chloride	UG/KG	1	7%	50	0	4	58	11	U	12	U	11	U	28	U	30	U
Styrene	UG/KG	0.57	3%		0	2	58	11	U	12	U	11	U	28	U	30	U
Toluene	UG/KG	15	36%	700	0	21	58	11	U	12	U	11	U	15	J	6	J
Total Xylenes	UG/KG	520	8%	260	1	2	25	11	U	12	U	11	U	**520**		260	
Trichloroethene	UG/KG	11	21%	470	0	12	58	11	U	12	U	11	U	11	J	30	U
Semoivolatile Organic Compounds																	
2-Methylnaphthalene	UG/KG	56	3%		0	2	58	73	UJ	75	UJ	74	UJ	56	J	10	J
Acenaphthene	UG/KG	23	2%	20000	0	1	58	73	U	75	U	74	U	75	U	23	J
Anthracene	UG/KG	58	12%	100000	0	7	58	73	UJ	75	UJ	74	UJ	75	UJ	40	J
Benzo(a)anthracene	UG/KG	190	26%	1000	0	15	58	73	U	75	U	74	U	75	UJ	74	J
Benzo(a)pyrene	UG/KG	140	26%	1000	0	15	58	73	UJ	75	UJ	74	UJ	75	UJ	41	J
Benzo(b)fluoranthene	UG/KG	170	24%	1000	0	14	58	73	U	75	U	74	U	75	UJ	23	J
Benzo(ghi)perylene	UG/KG	6.7	5%	100000	0	3	58	73	U	75	U	74	U	75	UJ	79	U
Benzo(k)fluoranthene	UG/KG	150	21%	800	0	12	58	73	U	75	U	74	U	75	UJ	79	U
Bis(2-Ethylhexyl)phthalate	UG/KG	930	24%		0	14	58	73	U	75	U	74	U	930	J	79	U
Butylbenzylphthalate	UG/KG	5.1	2%		0	1	58	73	U	75	U	74	U	75	UJ	79	U
Chrysene	UG/KG	250	28%	1000	0	16	58	73	U	75	U	74	U	75	UJ	98	
Di-n-butylphthalate	UG/KG	4	2%		0	1	58	73	U	75	U	74	U	75	U	79	U
Di-n-octylphthalate	UG/KG	45	17%		0	10	58	73	UJ	75	UJ	74	UJ	75	UJ	79	U
Dibenz(a,h)anthracene	UG/KG	6	2%	330	0	1	58	73	U	75	U	74	U	75	UJ	79	U
Fluoranthene	UG/KG	320	28%	100000	0	16	58	73	U	75	U	74	U	75	U	69	J
Fluorene	UG/KG	10	2%	30000	0	1	58	73	U	75	U	74	U	75	U	10	J
Indeno(1,2,3-cd)pyrene	UG/KG	93	19%	500	0	11	58	73	U	75	U	74	U	75	UJ	79	U
Naphthalene	UG/KG	600	3%	12000	0	2	58	73	UJ	75	UJ	74	UJ	600	J	72	J
Phenanthrene	UG/KG	240	26%	100000	0	15	58	73	U	75	U	74	U	75	U	130	
Pyrene	UG/KG	290	28%	100000	0	16	58	73	UJ	75	UJ	74	UJ	75	UJ	260	
Pesticides/PCBs																	
Aroclor-1254	UG/KG	63	5%	100	0	3	60	36	U	37	U	37	U	38	U	40	U
Alpha-BHC	UG/KG	24	5%	20	1	3	58	1.9	U	1.9	U	1.9	U	2.8		**24**	
Beta-BHC	UG/KG	2.2	2%	36	0	1	58	1.9	U	1.9	U	1.9	U	1.9	U	2.2	J
Heptachlor	UG/KG	13	3%	42	0	2	58	1.9	U	1.9	U	1.9	U	2.6		13	
Heptachlor epoxide	UG/KG	1.7	2%		0	1	58	1.9	U	1.9	U	1.9	U	1.9	U	1.7	J
Metals																	
Aluminum	MG/KG	14900	100%		0	58	58	6100	J	6650	J	9100	J	7410	J	6500	J
Antimony	MG/KG	0.81	3%		0	1	36	1.2	UR	84	UR	1.2	UR	1.1	UR	1.3	UR
Arsenic	MG/KG	6.4	100%	13	0	58	58	3.4		3.2		3.4		3		2.9	
Barium	MG/KG	223	100%	350	0	58	58	79.2	J	58.2	J	70.7	J	65.3	J	55.3	J
Beryllium	MG/KG	0.778	100%	7.2	0	58	58	0.24	J	0.29	J	0.37	J	0.3	J	0.26	J
Cadmium	MG/KG	3	34%	2.5	1	20	58	0.06	U	**3**		0.06	U	1.3		1.2	
Calcium	MG/KG	142000	100%		0	58	58	102000		88400		59900		106000		142000	

Attachment A Table 1
Soil Samples Considered in Updated Risk Assessment
SEAD-12 Disposal Pit A/B

Seneca Army Depot Activity
Romulus, NY

							Area	SEAD-12 A/B		SEAD-12 A/B		SEAD-12 A/B		SEAD-12 A/B		SEAD-12 A/B		SEAD-12 A/B	
							Location_Id	TP12-1B		TP12-1C		TP12-2A		TP12-2B		TP12-2C			
							Matrix	SOIL		SOIL		SOIL		SOIL		SOIL			
							Sample_Id	123143		123144		123145		123146		123147			
							Samp_Depth_Top	3		6		3		3.5		6			
							Samp_Depth_Bot	3		6		3		3.5		6			
							Sample_Date	10/16/98		10/16/98		10/16/98		10/16/98		10/16/98			
								SA		SA		SA		SA		SA			
		Maximum	**Frequency**					RI		RI		RI		RI		RI			
Parameter	**Units**	**Concentration Detected**	**of Detection**	**Action Level (1)**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples**	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)		
Chromium	MG/KG	46.7	100%	30	1	58	58	9.5		10.9		13.8		15.7		12.5			
Cobalt	MG/KG	15.2	100%		0	58	58	7.5	J	8.6		7.8	J	8.4	J	8	J		
Copper	MG/KG	41	100%	50	0	58	58	21.4		31.5		18.1		22.6		16.9			
Cyanide	MG/KG	1.6	7%	27	0	4	58	0.57	U	0.57	U	0.56	U	0.57	U	0.65	U		
Iron	MG/KG	27800	100%		0	58	58	15800		17300	J	18000	J	26700	J	18300	J		
Lead	MG/KG	33.3	100%	63	0	58	58	6.9	J	12.8	J	9	J	8.9	J	8.7	J		
Magnesium	MG/KG	37400	100%		0	58	58	14400	J	11700	J	11900	J	12400	J	11300	J		
Manganese	MG/KG	1030	100%	1600	0	58	58	358		427		402		411		394			
Mercury	MG/KG	0.11	60%	0.18	0	35	58	0.06	U	0.05	U	0.06	U	0.05	U	0.06	U		
Nickel	MG/KG	48.9	95%	30	20	55	58	21.1	J	**34.1**	J	23.3	J	24.7	J	22.2	J		
Potassium	MG/KG	2110	100%		0	58	58	945	J	801		1010	J	951		887	J		
Selenium	MG/KG	1.9	13%	3.9	0	6	48	0.94	UJ	0.63	UJ	0.93	UJ	0.81	UJ	0.98	UJ		
Sodium	MG/KG	180	78%		0	45	58	70.1	J	70.2	J	69.9	J	107	J	108	J		
Thallium	MG/KG	1.8	9%		0	5	58	1.1	U	0.94	J	1.1	U	0.91	U	1.1	U		
Vanadium	MG/KG	27.3	100%		0	58	58	11.3		11.8		14.7		12.4		11.2			
Zinc	MG/KG	110	100%	109	1	58	58	42.4	J	54.5	J	51.9	J	56.6	J	58.6	J		

ATTACHMENT A TABLE 2

OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN IN SEAD-12 PIT A/B SOIL

SEAD-12 Updated Risk Assessment

Seneca Army Depot Activity

Scenario Time frame:	Cuurent/Future
Medium:	Soil
Exposure Medium:	Soil
Exposure Point:	SEAD-12 Pit A/B

CAS Number	Chemical	Minimum Detected Concentration [1] (mg/kg)	Q	Maximum Detected Concentration [1] (mg/kg)	Q	Location of Maximum Concentration	Detection Frequency [1]			Range of Reporting Limits [1] (mg/kg)			Concentration Used for Screening [2] (mg/kg)	Screening Value [4] (mg/kg)	Potential ARAR/TBC Source	ARAR / TBC Value [5] (mg/kg)	COPC Flag	Rationale for Contaminant Deletion or Selection [6]	Background Value [3] (mg/kg)
VOC																			
67-64-1	Acetone	0.0034	J	0.034	J	SB12-4	4	/	39	0.0018	-	0.03	0.034	6100	NYSDEC Subpart 375-6	50	NO	BSL	--
75-15-0	Carbon disulfide	0.0025	J	0.0025	J	S12EXFL-N-9-01	1	/	39	0.00056	-	0.03	0.0025	82			NO	BSL	--
100-41-4	Ethyl benzene	0.0027	J	0.049		TP12-2B	3	/	39	0.00095	-	0.012	0.049	5.4	NYSDEC Subpart 375-6	1000	NO	BSL	--
SA0078	Meta/Para Xylene	0.0013	J	0.0013	J	S12EXFL-N-9-01	1	/	31	0.00068	-	0.0013	0.0013	59	NYSDEC Subpart 375-6	260	NO	BSL	--
78-93-3	Methyl ethyl ketone	0.0011	J	0.0011	J	S12EXFL-N-9-01	1	/	39	0.00082	-	0.03	0.0011	2800	NYSDEC Subpart 375-6	120	NO	BSL	--
75-09-2	Methylene chloride	0.00048	J	0.001	J	SB12-2	3	/	39	0.00041	-	0.03	0.001	11	NYSDEC Subpart 375-6	50	NO	BSL	--
100-42-5	Styrene	0.00054	J	0.00057	J	S12EXFL-N-9-02	2	/	39	0.00031	-	0.03	0.00057	630			NO	BSL	--
108-88-3	Toluene	0.00043	J	0.015	J	TP12-2B	19	/	39	0.00036	-	0.012	0.015	500	NYSDEC Subpart 375-6	700	NO	BSL	--
1330-20-7	Total Xylenes	0.26		0.52		TP12-2B	2	/	8	0.011	-	0.012	0.52	63	NYSDEC Subpart 375-6	260	NO	BSL	--
79-01-6	Trichloroethene	0.00044	J	0.011	J	TP12-2B	11	/	39	0.00044	-	0.03	0.011	2.8	NYSDEC Subpart 375-6	470	NO	BSL	--
SVOC																			
91-57-6	2-Methylnaphthalene	0.01	J	0.056	J	TP12-2B	2	/	39	0.035	-	0.12	0.056	31			NO	BSL	--
83-32-9	Acenaphthene	0.023	J	0.023	J	TP12-2C	1	/	39	0.043	-	0.14	0.023	340	NYSDEC Subpart 375-6	20000	NO	BSL	--
120-12-7	Anthracene	0.0044	J	0.058	J	S12STOCK-C1-03	7	/	39	0.04	-	0.14	0.058	1700	NYSDEC Subpart 375-6	100000	NO	BSL	--
56-55-3	Benzo(a)anthracene	0.0058	J	0.19	J	S12STOCK-C1-03	12	/	39	0.043	-	0.14	0.19	0.15	NYSDEC Subpart 375-6	1000	YES	ASL	--
50-32-8	Benzo(a)pyrene	0.0071	J	0.14	J	S12STOCK-C1-03	12	/	39	0.036	-	0.12	0.14	0.015	NYSDEC Subpart 375-6	1000	YES	ASL	--
205-99-2	Benzo(b)fluoranthene	0.006	J	0.17	J	S12STOCK-C1-03	12	/	39	0.051	-	0.17	0.17	0.15	NYSDEC Subpart 375-6	1000	YES	ASL	--
191-24-2	Benzo(ghi)perylene	0.0067	J	0.0067	J	SB12-4	1	/	39	0.072	-	0.32	0.0067		NYSDEC Subpart 375-6	100000		NSV	--
207-08-9	Benzo(k)fluoranthene	0.0064	J	0.15	J	S12STOCK-C1-03	10	/	39	0.052	-	0.17	0.15	1.5	NYSDEC Subpart 375-6	800	NO	BSL	--
117-81-7	Bis(2-Ethylhexyl)phthala	0.051	J	0.93	J	TP12-2B	9	/	39	0.06	-	0.37	0.93	35			NO	BSL	--
85-68-7	Butylbenzylphthalate	0.0051	J	0.0051	J	SB12-4	1	/	39	0.044	-	0.15	0.0051	260			NO	BSL	--
218-01-9	Chrysene	0.0057	J	0.25	J	S12STOCK-C1-03	12	/	39	0.044	-	0.15	0.25	15	NYSDEC Subpart 375-6	1000	NO	BSL	--
117-84-0	Di-n-octylphthalate	0.0052	J	0.01	J	SB12-2	4	/	39	0.036	-	0.12	0.01					NSV	--
53-70-3	Dibenz(a,h)anthracene	0.006	J	0.006	J	SB12-4	1	/	39	0.041	-	0.14	0.006	0.015	NYSDEC Subpart 375-6	330	NO	BSL	--
206-44-0	Fluoranthene	0.0051	J	0.32	J	S12STOCK-C1-03	12	/	39	0.043	-	0.14	0.32	230	NYSDEC Subpart 375-6	100000	NO	BSL	--
86-73-7	Fluorene	0.01	J	0.01	J	TP12-2C	1	/	39	0.035	-	0.12	0.01	230	NYSDEC Subpart 375-6	30000	NO	BSL	--
193-39-5	Indeno(1,2,3-cd)pyrene	0.0057	J	0.093	J	S12STOCK-C1-03	10	/	39	0.039	-	0.13	0.093	0.15	NYSDEC Subpart 375-6	500	NO	BSL	--
91-20-3	Naphthalene	0.072	J	0.6	J	TP12-2B	2	/	39	0.032	-	0.11	0.6	3.6	NYSDEC Subpart 375-6	12000	NO	BSL	--
85-01-8	Phenanthrene	0.0047	J	0.13175	J	S12STOCK-C1-11	12	/	39	0.044	-	0.15	0.13175		NYSDEC Subpart 375-6	100000		NSV	--
129-00-0	Pyrene	0.0044	J	0.29	J	S12STOCK-C1-03	12	/	39	0.038	-	0.13	0.29	170	NYSDEC Subpart 375-6	100000	NO	BSL	--
Pesticide/PCBs																			
11097-69-1	Aroclor-1254	0.02975	J	0.063		S12EXFL-O-10-01	3	/	41	0.019	-	0.04	0.063	0.22	NYSDEC Subpart 375-6	100	NO	BSL	--
319-84-6	Alpha-BHC	0.0028		0.024		TP12-2C	3	/	39	0.00091	-	0.011	0.024	0.077	NYSDEC Subpart 375-6	20	NO	BSL	--
319-85-7	Beta-BHC	0.0022	J	0.0022	J	TP12-2C	1	/	39	0.00091	-	0.011	0.0022	0.27	NYSDEC Subpart 375-6	36	NO	BSL	--
76-44-8	Heptachlor	0.0026		0.013		TP12-2C	2	/	39	0.00091	-	0.011	0.013	0.11	NYSDEC Subpart 375-6	42	NO	BSL	--
1024-57-3	Heptachlor epoxide	0.0017	J	0.0017	J	TP12-2C	1	/	39	0.00091	-	0.011	0.0017	0.053			NO	BSL	--
Metals																			
7429-90-5	Aluminum	6500	J	14900		S12STOCK-C1-08	39	/	39	0	-	0	14900	7700			YES	ASL	BCKGRD
7440-36-0	Antimony	0.81	J	0.81	J	SB12-4	1	/	34	0.427	-	0.75	0.81	3.1			NO	BSL	--
7440-38-2	Arsenic	1.9	J	6.4		S12EXFL-N-9-02	39	/	39	0	-	0	6.4	0.39	NYSDEC Subpart 375-6	13	YES	ASL	BCKGRD
7440-39-3	Barium	55.3	J	223		S12EXFL-O-10-01	39	/	39	0	-	0	223	1500	NYSDEC Subpart 375-6	350	NO	BSL	--
7440-41-7	Beryllium	0.24	J	0.778		S12EXFL-N-9-02	39	/	39	0	-	0	0.778	16	NYSDEC Subpart 375-6	7.2	NO	BSL	--
7440-43-9	Cadmium	0.282	J	3		TP12-1C	19	/	39	0.05	-	0.68	3	7	NYSDEC Subpart 375-6	2.5	NO	BSL	--
7440-70-2	Calcium	3550		142000		TP12-2C	39	/	39	0	-	0	142000					NUT	NUT
7440-47-3	Chromium	10.9		46.7		S12EXFL-N-9-02	39	/	39	0	-	0	46.7	12000	NYSDEC Subpart 375-6	30	NO	BSL	--
7440-48-4	Cobalt	6.2		15		SB12-4	39	/	39	0	-	0	15	2.3			YES	ASL	BCKGRD
7440-50-8	Copper	15.2		41		S12EXSW-N-10-02	39	/	39	0	-	0	41	310	NYSDEC Subpart 375-6	50	NO	BSL	--
7439-89-6	Iron	15100		27800		SB12-4	39	/	39	0	-	0	27800	5500			YES	ASL	BCKGRD
7439-92-1	Lead	7.2	J	33.3	J	S12EXSW-N-10-02	39	/	39	0	-	0	33.3	40	NYSDEC Subpart 375-6	63	NO	BSL	--
7439-95-4	Magnesium	3690		37400		S12EXFL-O-10-01	39	/	39	0	-	0	37400					NSV	BCKGRD
7439-96-5	Manganese	375		1030		S12EXPR-O-7-01	39	/	39	0	-	0	1030	180	NYSDEC Subpart 375-6	1600	YES	ASL	BCKGRD
7487-94-7	Mercury	0.016	J	0.05		S12STOCK-C1-07	30	/	39	0.002	-	0.06	0.05	2.3	NYSDEC Subpart 375-6	0.18	NO	BSL	--

ATTACHMENT A TABLE 2

OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN IN SEAD-12 PIT A/B SOIL

SEAD-12 Updated Risk Assessment

Seneca Army Depot Activity

Scenario Time frame:	Cuurent/Future
Medium:	Soil
Exposure Medium:	Soil
Exposure Point:	SEAD-12 Pit A/B

CAS Number	Chemical	Minimum Detected Concentration [1] (mg/kg)	Q	Maximum Detected Concentration [1] (mg/kg)	Q	Location of Maximum Concentration	Detection Frequency [1]			Range of Reporting Limits [1] (mg/kg)			Concentration Used for Screening [2] (mg/kg)	Screening Value [4] (mg/kg)	Potential ARAR/TBC Source	ARAR / TBC Value [5] (mg/kg)	COPC Flag	Rationale for Contaminant Deletion or Selection [6]	Background Value [3] (mg/kg)
7440-02-0	Nickel	21		48.9		SB12-4	39	/	39	0	-	0	48.9	150	NYSDEC Subpart 375-6	30	NO	BSL	--
7440-09-7	Potassium	801		2110		S12STOCK-C1-03	39	/	39	0	-	0	2110					NUT	NUT
7782-49-2	Selenium	1.1	J	1710		S12STOCK-C1-11	4	/	31	0.185	-	1.37	1710	39	NYSDEC Subpart 375-6	3.9	YES	ASL	--
7440-23-5	Sodium	35.8	J	180		S12EXSW-O-9-01	36	/	39	129	-	138	180					NUT	BCKGRD
7440-28-0	Thallium	0.94	J	1.1	J	SB12-2	2	/	39	0.2	-	1.4	1.1	0.078			YES	ASL	--
7440-62-2	Vanadium	11.2		27.3		S12STOCK-C1-09	39	/	39	0	-	0	27.3	39			NO	BSL	
7440-66-6	Zinc	45.1	J	110	J	SB12-4	39	/	39	0	-	0	110	2300	NYSDEC Subpart 375-6	109	NO	BSL	

Notes:

1. Field duplicate pairs were averaged as a discrete sample. Laboratory duplicates were not included in the assessment. Range of reporting limits were presented for nondetects only.
2. The maximum detected concentration was used for screening.
3. Metals are compared to Background Dataset using Pro UCL Wilcoxon Mann Whitney Tests.
4. EPA Regional Screening Levels for residential soil. On-line resources available at http://www.epa.gov/region09/superfund/prg/index.html. Last updated June 2011.
   USEPA RSLs were derived based on Direct contact exposure (ingestion and dermal contact) and a target Cancer Risk of 1E-6 or a Target Hazard Quotient of 0.1.
   Screening values for calcium, magnesium, potassium, and sodium were calculated based on an assumption of 200 mg/day soil ingestion and recommended dietary allowances and adequate intakes for 1-3 yr children (500 mg/day and 80 mg/day for calcium and magnesium) and minimum requirements for 1 yr children (225 mg/day and 1000 mg/day for sodium and potassium) from Marilyn Wright (2001) Dietary Reference Intakes.
   RSL for chromium (III, insoluble salt) was used as screening value for chromium.
   PRG for nickel (soluble salts) was used as screening value for nickel.
5. Potential ARAR/TBC values are from NYSDEC Brownfield Unrestricted Use Soil Cleanup Objectives, http://www.dec.state.ny.us/website/regs/subpart375_6.html
6. Rationale codes
   Selection Reason: Above Screening Levels (ASL)
   Chemicals in the Same Group were retained as COPC (CSG)
   Deletion Reason: Essential Nutrient (NUT)
   Below Screening Level (BSL)
   No Screening Value (NSV)

Definitions:
COPC = Chemical of Potential Concern
ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered
Q = Qualifier
J = Estimated Value

ATTACHMENT A TABLE 3
WILCOXON MANN WHITNEY TEST SUMMARY
Updated Disposal Pit A/B versus SEDA Background Dataset
SEAD-12 Updated Riskk Assessment
Seneca Army Depot Activity

					Wilcoxon Rank Sum Tests				
Parameter	# of Pit AB Samples	Pit AB Mean WRS Value	# of Background Samples	Background Mean WRS Value	Mean/Median of Site = Mean/Median of Background	Mean/Median of Site >= Mean/Median of Background	Mean/Median of Site <= Mean/Median of Background		Is Site > Background?
					Conclusion with Alpha = 0.05				
Aluminum	39	41.53	57	53.27	FALSE	FALSE	**TRUE**		No
Arsenic	39	38.68	55	53.75	FALSE	FALSE	**TRUE**		No
Calcium	39	55.92	57	43.42	FALSE	**TRUE**	FALSE		**Yes**
Cobalt	39	45.42	57	50.61	**TRUE**	**TRUE**	**TRUE**		No
Iron	39	39.95	57	54.35	FALSE	FALSE	**TRUE**		No
Magnesium	39	52.96	57	45.45	**TRUE**	**TRUE**	**TRUE**		No
Manganese	39	45.33	54	48.2	**TRUE**	**TRUE**	**TRUE**		No
Potassium	39	55.99	57	43.38	FALSE	**TRUE**	FALSE		**Yes**
Selenium [1]	30	63.73	57	33.61	FALSE	**TRUE**	FALSE		**Yes**
Sodium	39	53.69	57	44.95	**TRUE**	**TRUE**	**TRUE**		No
Thallium [1]	39	68.1	54	31.76	FALSE	**TRUE**	FALSE		**Yes**

Notes:
1. Detected result for metal account for 10% (or less) of the Pit A/B dataset.
2. Below is a description of the True/False values for the particular scenario being evaluated.

Mean/Median of Site = Mean/Median of Background
True = Do Not Reject H0, Conclude Site = Background, P-Value >= alpha (0.05)
False = Reject H0, Conclude Site <> Background, P-Value < alpha (0.05)

Mean/Median of Site >= Mean/Median of Background
True = Do Not Reject H0, Conclude Site >= Background, P-Value >= alpha (0.05)
False = Reject H0, Conclude Site < Background, P-Value < alpha (0.05)

Mean/Median of Site <= Mean/Median of Background
True = Do Not Reject H0, Conclude Site <= Background, P-Value >= alpha (0.05)
False = Reject H0, Conclude Site > Background, P-Value < alpha (0.05)

Attachment A Table 4A

SOIL EXPOSURE POINT CONCENTRATION SUMMARY - SURFACE AND SUBSURFACE SOIL

SEAD-12 Updated Risk Assessment

SENECA ARMY DEPOT ACTIVITY

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Soil
Exposure Point:	SEAD-12, Pit A/B

Chemical of Potential Concern	Units	Arithmetic Mean (1)	95% UCL of Normal Data (1, 2)	Maximum Detected Concentration (1)	Q	EPC Units	Reasonable Maximum Exposure (3)		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
Total Soil									
Volatile Organics									
SemiVolatile Organics									
Benzo(a)anthracene	mg/kg	1.03E-01	8.77E-02	1.90E-01	J	mg/kg	8.61E-02	95% KM (Pct Boot) UCL	Non-Parametric
Benzo(a)pyrene	mg/kg	8.12E-02	9.92E-02	1.40E-01	J	mg/kg	6.61E-02	95% KM (Pct Boot) UCL	Non-Parametric
Benzo(b)fluoranthene	mg/kg	9.30E-02	6.00E-02	1.70E-01	J	mg/kg	8.15E-02	95% KM (Pct Boot) UCL	Non-Parametric
Benzo(ghi)perylene	mg/kg	- - -	- - -	6.70E-03	J	mg/kg	**6.70E-03**	Maximum (4)	Maximum
Benzo(k)fluoranthene	mg/kg	8.80E-02	5.42E-02	1.50E-01	J	mg/kg	**8.01E-02**	95% KM (Pct Boot) UCL	Non-Parametric
Chrysene	mg/kg	1.26E-01	2.21E-01	2.50E-01	J	mg/kg	1.07E-01	95% KM (Pct Boot) UCL	Non-Parametric
Di-n-octylphthalate	mg/kg	7.10E-03	2.35E-02	1.00E-02	J	mg/kg	**9.04E-03**	95% KM (Pct Boot) UCL	Non-Parametric
Dibenz(a,h)anthracene	mg/kg	- - -	- - -	6.00E-03	J	mg/kg	**6.00E-03**	Maximum (4)	Maximum
Indeno(1,2,3-cd)pyrene	mg/kg	5.82E-02	3.93E-02	9.30E-02	J	mg/kg	5.31E-02	95% KM (Pct Boot) UCL	Non-Parametric
Phenanthrene	mg/kg	8.83E-02	5.68E-02	2.40E-01	J	mg/kg	7.15E-02	95% KM (t) UCL	Non-Parametric
Pesticides/PCBs									
Metals									
Calcium	mg/kg	54,610	63,879	142,000		mg/kg	67,183	95% Approx. Gamma UCL	Gamma
Potassium	mg/kg	1,597	1,685	2,110		mg/kg	**1,685**	95% Student's-t UCL	Normal
Selenium	mg/kg	1.5	0.65	1.9		mg/kg	1.9	95% KM (Pct Boot) UCL	Non-Parametric
Thallium	mg/kg	1.02	0.427	1.1		mg/kg	0.954	95% KM (t) UCL	Non-

Notes:

1. All values were calculated by ProUCL version 4.00.04 using the combined RI and RA dataste for Pit A, Pit B, and Pit C1 overburden material.
2. Grey shaded cells represent non-detects in the dataset influencing which statistical methods were available (10 or more detects recommended). If the Student-t method was not available the Maximum Likelihood Estimate(MLE) Method for Normal distribution was used. If the MLE Method could not be calculated the DL/2 Substitution Method was used in its place.
3. The EPCs were calculated using the ProUCL (Version 4.00.04) and the EPCs were selected in accordance with the ProUCL Version 4.0 User Guide (USEPA, 2009) and the Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites (USEPA, 2002).
4. **Bold** values have limited detection frequency (4 or less observations).

Other Notes Q = Dayta Validation Qualifier
J = Estimated Value

ATTACHMENT A TABLE 4B (Disposal Pits A/B)
AMBIENT AIR EXPOSURE POINT CONCENTRATIONS
SEAD-12 Updated Risk Assessment
Seneca Army Depot Activity

Equation for Air EPC from Surface Soil (mg/m³ CS_{surf} x PM10 x CF	Equation for Air EPC from Total Soils (mg/m³) = CS_{tot} x PM10 x CF
Variables:	Variables:
CS_{surf} = Surface Soil Chemical Concentration, from EPC data (mg/kg)	CS_{tot} = Total Soil Chemical Concentration, from EPC data (mg/kg)
PM10 = Average Measured PM10 Concentration = 17 ug/m³	PM10 = PM10 Concentration for Construction Worker= 138 ug/m³
CF = Conversion Factor = 1E-9 kg/ug	CF = Conversion Factor = 1E-9 kg/ug

Analyte	EPC Data for Surface Soil (mg/kg)	EPC Data for Total Soils (mg/kg)	Calculated Air EPC Surface Soil (mg/m³)	Calculated Air EPC Total Soils (mg/m³)
Semivolatile Organics				
Benzo(a)anthracene	8.61E-02	8.61E-02	1.46E-09	1.19E-08
Benzo(a)pyrene	6.61E-02	6.61E-02	1.12E-09	9.13E-09
Benzo(b)fluoranthene	8.15E-02	8.15E-02	1.39E-09	1.12E-08
Benzo(ghi)perylene	6.70E-03	6.70E-03	1.14E-10	9.25E-10
Benzo(k)fluoranthene	8.01E-02	8.01E-02	1.36E-09	1.11E-08
Chrysene	1.07E-01	1.07E-01	1.81E-09	1.47E-08
Di-n-octylphthalate	9.04E-03	9.04E-03	1.54E-10	1.25E-09
Dibenz(a,h)anthracene	6.00E-03	6.00E-03	1.02E-10	8.28E-10
Indeno(1,2,3-cd)pyrene	5.31E-02	5.31E-02	9.03E-10	7.33E-09
Phenanthrene	7.15E-02	7.15E-02	1.21E-09	9.86E-09
Metals				
Calcium	6.72E+04	6.72E+04	1.14E-03	9.27E-03
Potassium	1.69E+03	1.69E+03	2.86E-05	2.33E-04
Selenium	1.90E+00	1.90E+00	3.23E-08	2.62E-07
Thallium	9.54E-01	9.54E-01	1.62E-08	1.32E-07

ATTACHMENT A TABLE 5 (Disposal Pits A/B)
CALCULATION OF INTAKE AND RISK FROM INHALATION OF DUST IN AMBIENT AIR
REASONABLE MAXIMUM EXPOSURE (RME)
SEAD-12 Updated Risk Assessment
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CA \times IR \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):

CA = Chemical Concentration in Air, Calculated from Air EPC Data
IR = Inhalation Rate
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Inhalation RfD	Carc. Slope Inhalation	Air EPC* from Surface Soil	Air EPC* from Total Soils	Current Site Worker				Future Outdoor Park Worker			
					Intake (mg/kg-day)		Hazard Quotient	Cancer Risk	Intake (mg/kg-day)		Hazard Quotient	Cancer Risk
	(mg/kg-day)	(mg/kg-day)-1	(mg/m3)	(mg/m3)	(Nc)	(Car)			(Nc)	(Car)		
Semi Volatile Organics												
Benzo(a)anthracene	NA	NA	1.46E-09	1.19E-08								
Benzo(a)pyrene	NA	3.85E+00	1.12E-09	9.13E-09		3.02E-12		1E-11		2.20E-11		8E-11
Benzo(b)fluoranthene	NA	3.85E-01	1.39E-09	1.12E-08		3.72E-12		1E-12		2.71E-11		1E-11
Benzo(ghi)perylene	NA	NA	1.14E-10	9.25E-10								
Benzo(k)fluoranthene	NA	3.85E-01	1.36E-09	1.11E-08		3.65E-12		1E-12		2.66E-11		1E-11
Chrysene	NA	3.85E-02	1.81E-09	1.47E-08		4.86E-12		2E-13		3.55E-11		1E-12
Di-n-octylphthalate	NA	NA	1.54E-10	1.25E-09								
Dibenz(a,h)anthracene	NA	4.20E+00	1.02E-10	8.28E-10		2.74E-13		1E-12		2.00E-12		8E-12
Indeno(1,2,3-cd)pyrene	NA	3.85E-01	9.03E-10	7.33E-09		2.42E-12		9E-13		1.77E-11		7E-12
Phenanthrene	NA	NA	1.21E-09	9.86E-09								
Metals												
Calcium	NA	NA	1.14E-03	9.27E-03								
Potassium	NA	NA	2.86E-05	2.33E-04								
Selenium	NA	NA	3.23E-08	2.62E-07								
Thallium	NA	NA	1.62E-08	1.32E-07								
Total Hazard Quotient and Cancer Risk:							**0.0E+00**	**1.7E-11**			**0.0E+00**	**1.2E-10**

Assumptions for Current Site Worker			Assumptions for Future Outdoor Park Worker		
CA =	EPC	Surface Only	CA =	EPC	Surface Only
BW =	70	kg	BW =	70	kg
IR =	9.6	m3/day	IR =	8	m3/day
EF =	20	days/year	EF =	175	days/year
ED =	25	years	ED =	25	years
AT (Nc) =	9,125	days	AT (Nc) =	9,125	days
AT (Car) =	25,550	days	AT (Car) =	25,550	days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
* See Table L-5A for calculation of Air EPC.
NA= Information not available.
ND = Compound not detected.

ATTACHMENT A TABLE 5 (Disposal Pits A/B)
CALCULATION OF INTAKE AND RISK FROM INHALATION OF DUST IN AMBIENT AIR
REASONABLE MAXIMUM EXPOSURE (RME)
SEAD-12 Updated Risk Assessment
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CA \times IR \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):

CA = Chemical Concentration in Air, Calculated from Air EPC Data
IR = Inhalation Rate
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Inhalation RfD (mg/kg-day)	Carc. Slope Inhalation (mg/kg-day)-1	Air EPC* from Surface Soil (mg/m3)	Air EPC* from Total Soils (mg/m3)	Future Recreational Visitor (Child) Intake (mg/kg-day) (Nc)	Intake (mg/kg-day) (Car)	Hazard Quotient	Cancer Risk	Future Construction Worker Intake (mg/kg-day) (Nc)	Intake (mg/kg-day) (Car)	Hazard Quotient	Cancer Risk
Semi Volatile Organics												
Benzo(a)anthracene	NA	NA	1.46E-09	1.19E-08								
Benzo(a)pyrene	NA	3.85E+00	1.12E-09	9.13E-09		1.79E-12		7E-12		1.33E-11		5E-11
Benzo(b)fluoranthene	NA	3.85E-01	1.39E-09	1.12E-08		2.20E-12		8E-13		1.64E-11		6E-12
Benzo(ghi)perylene	NA	NA	1.14E-10	9.25E-10								
Benzo(k)fluoranthene	NA	3.85E-01	1.36E-09	1.11E-08		2.16E-12		8E-13		1.61E-11		6E-12
Chrysene	NA	3.85E-02	1.81E-09	1.47E-08		2.88E-12		1E-13		2.14E-11		8E-13
Di-n-octylphthalate	NA	NA	1.54E-10	1.25E-09								
Dibenz(a,h)anthracene	NA	4.20E+00	1.02E-10	8.28E-10		1.62E-13		7E-13		1.20E-12		5E-12
Indeno(1,2,3-cd)pyrene	NA	3.85E-01	9.03E-10	7.33E-09		1.43E-12		6E-13		1.07E-11		4E-12
Phenanthrene	NA	NA	1.21E-09	9.86E-09								
Metals												
Calcium	NA	NA	1.14E-03	9.27E-03								
Potassium	NA	NA	2.86E-05	2.33E-04								
Selenium	NA	NA	3.23E-08	2.62E-07								
Thallium	NA	NA	1.62E-08	1.32E-07								
Total Hazard Quotient and Cancer Risk:							**0.0E+00**	**9.9E-12**			**0.0E+00**	**7.4E-11**

Assumptions for Future Recreational Visitor (Child)			Assumptions for Future Construction Worker		
CA =	EPC	Surface Only	CA =	EPC	Surface/Subsurface
BW =	15	kg	BW =	70	kg
IR =	8.7	m3/day	IR =	10.4	m3/day
EF =	14	days/year	EF =	250	days/year
ED =	5	years	ED =	1	years
AT (Nc) =	1,825	days	AT (Nc) =	365	days
AT (Car) =	25,550	days	AT (Car) =	25,550	days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
* See Table L-5A for calculation of Air EPC.
NA= Information not available.
ND = Compound not detected.

ATTACHMENT A TABLE 5 (Disposal Pits A/B)
CALCULATION OF INTAKE AND RISK FROM INHALATION OF DUST IN AMBIENT AIR
REASONABLE MAXIMUM EXPOSURE (RME)
SEAD-12 Updated Risk Assessment
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CA \times IR \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):

CA = Chemical Concentration in Air, Calculated from Air EPC Data
IR = Inhalation Rate
EF = Exposure Frequency
ED=Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Contribution to Lifetime Cancer Risk = Chronic Daily Intake (Car) x Slope Factor
Equation for Total Lifetime Cancer Risk = Adult Contribution + Child Contribution

Analyte	Inhalation RfD 0 (mg/kg-day)	Carc. Slope Inhalation 0 (mg/kg-day)-1	Air EPC* from Surface Soil 0 (mg/m3)	Future Resident (Adult) Intake (mg/kg-day) (Nc)	(Car)	Hazard Quotient	Contribution to Lifetime Cancer Risk	Future Resident (Child) Intake (mg/kg-day) (Nc)	(Car)	Hazard Quotient	Contribution to Lifetime Cancer Risk	Resident Total Lifetime Cancer Risk
Semi Volatile Organics												
Benzo(a)anthracene	NA	NA	1.46E-09									
Benzo(a)pyrene	NA	3.85E+00	1.12E-09		1.06E-10		4E-10		5.36E-11		2E-10	6E-10
Benzo(b)fluoranthene	NA	3.85E-01	1.39E-09		1.30E-10		5E-11		6.61E-11		3E-11	8E-11
Benzo(ghi)perylene	NA	NA	1.14E-10									
Benzo(k)fluoranthene	NA	3.85E-01	1.36E-09		1.28E-10		5E-11		6.49E-11		2E-11	7E-11
Chrysene	NA	3.85E-02	1.81E-09		1.70E-10		7E-12		8.64E-11		3E-12	1E-11
Di-n-octylphthalate	NA	NA	1.54E-10									
Dibenz(a,h)anthracene	NA	4.20E+00	1.02E-10		9.58E-12		4E-11		4.86E-12		2E-11	6E-11
Indeno(1,2,3-cd)pyrene	NA	3.85E-01	9.03E-10		8.48E-11		3E-11		4.30E-11		2E-11	5E-11
Phenanthrene	NA	NA	1.21E-09									
Metals												
Calcium	NA	NA	1.14E-03									
Potassium	NA	NA	2.86E-05									
Selenium	NA	NA	3.23E-08									
Thallium	NA	NA	1.62E-08									
Total Hazard Quotient and Cancer Risk:						**0.0E+00**	**5.9E-10**			**0.0E+00**	**3.0E-10**	**8.8E-10**

Assumptions for Future Resident (Adult)

CA =	EPC	Surface Only
BW =	70	kg
IR =	20	m3/day
EF =	350	days/year
ED =	24	years
AT (Nc) =	8,760	days
AT (Car) =	25,550	days

Assumptions for Future Resident (Child)

CA =	EPC	Surface Only
BW =	15	kg
IR =	8.7	m3/day
EF =	350	days/year
ED =	6	years
AT (Nc) =	2,190	days
AT (Car) =	25,550	days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
* See Table L-5A for calculation of Air EPC.
NA= Information not available.
ND = Compound not detected.

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ATTACHMENT A TABLE 6 (Disposal Pits A/B)
CALCULATION OF INTAKE AND RISK FROM THE INGESTION OF SOIL
REASONABLE MAXIMUM EXPOSURE (RME)
SEAD-12 Updated Risk Assessment
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CS \times IR \times CF \times FI \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):

CS = Chemical Concentration in Soil, Calculated from Soil EPC Data
IR = Ingestion Rate
CF = Conversion Factor
FI = Fraction Ingested
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Oral RfD (mg/kg-day)	Carc. Slope Oral (mg/kg-day)-1	EPC from Total Soils (mg/kg)	Current Site Worker Intake (mg/kg-day) (Nc)	Current Site Worker Intake (mg/kg-day) (Car)	Current Site Worker Hazard Quotient	Current Site Worker Cancer Risk	Future Outdoor Park Worker Intake (mg/kg-day) (Nc)	Future Outdoor Park Worker Intake (mg/kg-day) (Car)	Future Outdoor Park Worker Hazard Quotient	Future Outdoor Park Worker Cancer Risk
Semi Volatile Organics											
Benzo(a)anthracene	NA	7.30E-01	8.61E-02		2.41E-09		2E-09		2.11E-08		2E-08
Benzo(a)pyrene	NA	7.30E+00	6.61E-02		1.85E-09		1E-08		1.62E-08		1E-07
Benzo(b)fluoranthene	NA	7.30E-01	8.15E-02		2.28E-09		2E-09		1.99E-08		1E-08
Benzo(ghi)perylene	NA	NA	6.70E-03								
Benzo(k)fluoranthene	NA	7.30E-02	8.01E-02		2.24E-09		2E-10		1.96E-08		1E-09
Chrysene	3.00E-04	7.30E-03	1.07E-01	8.34E-09	2.98E-09	3E-05	2E-11	7.30E-08	2.61E-08	2E-04	2E-10
Di-n-octylphthalate	2.00E-02	NA	9.04E-03	7.08E-10		4E-08		6.19E-09		3E-07	
Dibenz(a,h)anthracene	NA	7.30E+00	6.00E-03		1.68E-10		1E-09		1.47E-09		1E-08
Indeno(1,2,3-cd)pyrene	NA	7.30E-01	5.31E-02		1.49E-09		1E-09		1.30E-08		9E-09
Phenanthrene	NA	NA	7.15E-02								
Metals											
Calcium	NA	NA	6.72E+04								
Potassium	NA	NA	1.69E+03								
Selenium	5.00E-03	NA	1.90E+00	1.49E-07		3E-05		1.30E-06		3E-04	
Thallium	6.00E-04	NA	9.54E-01	7.47E-08		1E-04		6.53E-07		1E-03	
Total Hazard Quotient and Cancer Risk:						**1.8E-04**	**1.9E-08**			**1.6E-03**	**1.7E-07**

Assumptions for Current Site Worker			Assumptions for Future Outdoor Park Worker		
CF =	1E-06	kg/mg	CF =	1E-06	kg/mg
CS =	EPC	Surface Only	CS =	EPC	Surface Only
BW =	70	kg	BW =	70	kg
IR =	100	mg soil/day	IR =	100	mg soil/day
FI =	1	unitless	FI =	1	unitless
EF =	20	days/year	EF =	175	days/year
ED =	25	years	ED =	25	years
AT (Nc) =	9,125	days	AT (Nc) =	9,125	days
AT (Car) =	25,550	days	AT (Car) =	25,550	days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA = Information not available.
ND = Compound not detected.

ATTACHMENT A TABLE 6 (Disposal Pits A/B)
CALCULATION OF INTAKE AND RISK FROM THE INGESTION OF SOIL
REASONABLE MAXIMUM EXPOSURE (RME)
SEAD-12 Updated Risk Assessment
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CS \times IR \times CF \times FI \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):

CS = Chemical Concentration in Soil, Calculated from Soil EPC Data
IR = Ingestion Rate
CF = Conversion Factor
FI = Fraction Ingested
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Oral RfD (mg/kg-day)	Carc. Slope Oral (mg/kg-day)-1	EPC from Total Soils (mg/kg)	Future Recreational Visitor (Child) Intake (mg/kg-day) (Nc)	Intake (mg/kg-day) (Car)	Hazard Quotient	Cancer Risk	Future Construction Worker Intake (mg/kg-day) (Nc)	Intake (mg/kg-day) (Car)	Hazard Quotient	Cancer Risk
Semi Volatile Organics											
Benzo(a)anthracene	NA	7.30E-01	8.61E-02		3.14E-09		2E-09		5.78E-09		4E-09
Benzo(a)pyrene	NA	7.30E+00	6.61E-02		2.42E-09		2E-08		4.44E-09		3E-08
Benzo(b)fluoranthene	NA	7.30E-01	8.15E-02		2.98E-09		2E-09		5.47E-09		4E-09
Benzo(ghi)perylene	NA	NA	6.70E-03								
Benzo(k)fluoranthene	NA	7.30E-02	8.01E-02		2.93E-09		2E-10		5.37E-09		4E-10
Chrysene	3.00E-04	7.30E-03	1.07E-01	5.45E-08	3.89E-09	2E-04	3E-11	5.01E-07	7.15E-09	2E-03	5E-11
Di-n-octylphthalate	2.00E-02	NA	9.04E-03	4.62E-09		2E-07		4.25E-08		2E-06	
Dibenz(a,h)anthracene	NA	7.30E+00	6.00E-03		2.19E-10		2E-09		4.03E-10		3E-09
Indeno(1,2,3-cd)pyrene	NA	7.30E-01	5.31E-02		1.94E-09		1E-09		3.56E-09		3E-09
Phenanthrene	NA	NA	7.15E-02								
Metals											
Calcium	NA	NA	6.72E+04								
Potassium	NA	NA	1.69E+03								
Selenium	5.00E-03	NA	1.90E+00	9.72E-07		2E-04		8.92E-06		2E-03	
Thallium	6.00E-04	NA	9.54E-01	4.88E-07		8E-04		4.48E-06		7E-03	
Total Hazard Quotient and Cancer Risk:						**1.2E-03**	**2.5E-08**			**1.1E-02**	**4.7E-08**

Assumptions for Future Recreational Visitor (Child)			Assumptions for Future Construction Worker		
CF =	1E-06	kg/mg	CF =	1E-06	kg/mg
CS =	EPC	Surface Only	CS =	EPC	Surface/Subsurface
BW =	15	kg	BW =	70	kg
IR =	200	mg soil/day	IR =	480	mg soil/day
FI =	1	unitless	FI =	1	unitless
EF =	14	days/year	EF =	250	days/year
ED =	5	years	ED =	1	years
AT (Nc) =	1,825	days	AT (Nc) =	365	days
AT (Car) =	25,550	days	AT (Car) =	25,550	days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA = Information not available.
ND = Compound not detected.

ATTACHMENT A TABLE 6 (Disposal Pits A/B)
CALCULATION OF INTAKE AND RISK FROM THE INGESTION OF SOIL
REASONABLE MAXIMUM EXPOSURE (RME)
SEAD-12 Updated Risk Assessment
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CS \times IR \times CF \times FI \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):

CS = Chemical Concentration in Soil, Calculated from Soil EPC Data
IR = Ingestion Rate
CF = Conversion Factor
FI = Fraction Ingested
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Equation for Total Lifetime Cancer Risk = Adult Contribution + Child Contribution

Analyte	Oral RfD (mg/kg-day)	Carc. Slope Oral (mg/kg-day)-1	Future Resident (Adult) Intake (mg/kg-day) (Nc)	Future Resident (Adult) Intake (mg/kg-day) (Car)	Future Resident (Adult) Hazard Quotient	Future Resident (Adult) Contribution to Lifetime Cancer Risk	Future Resident (Child) Intake (mg/kg-day) (Nc)	Future Resident (Child) Intake (mg/kg-day) (Car)	Future Resident (Child) Hazard Quotient	Future Resident (Child) Contribution to Lifetime Cancer Risk	Resident Total Lifetime Cancer Risk
Semi Volatile Organics											
Benzo(a)anthracene	NA	7.30E-01		4.04E-08		3E-08		9.43E-08		7E-08	1E-07
Benzo(a)pyrene	NA	7.30E+00		3.11E-08		2E-07		7.25E-08		5E-07	8E-07
Benzo(b)fluoranthene	NA	7.30E-01		3.83E-08		3E-08		8.93E-08		7E-08	9E-08
Benzo(ghi)perylene	NA	NA									
Benzo(k)fluoranthene	NA	7.30E-02		3.76E-08		3E-09		8.78E-08		6E-09	9E-09
Chrysene	3.00E-04	7.30E-03	1.46E-07	5.01E-08	5E-04	4E-10	1.36E-06	1.17E-07	5E-03	9E-10	1E-09
Di-n-octylphthalate	2.00E-02	NA	1.24E-08		6E-07		1.16E-07		6E-06		
Dibenz(a,h)anthracene	NA	7.30E+00		2.82E-09		2E-08		6.58E-09		5E-08	7E-08
Indeno(1,2,3-cd)pyrene	NA	7.30E-01		2.49E-08		2E-08		5.82E-08		4E-08	6E-08
Phenanthrene	NA	NA									
Metals											
Calcium	NA	NA									
Potassium	NA	NA									
Selenium	5.00E-03	NA	2.60E-06		5E-04		2.43E-05		5E-03		
Thallium	6.00E-04	NA	1.31E-06		2E-03		1.22E-05		2E-02		
Total Hazard Quotient and Cancer Risk:					**3.2E-03**	**3.3E-07**			**3.0E-02**	**7.6E-07**	**1.1E-06**

Assumptions for Future Resident (Adult)			Assumptions for Future Resident (Child)		
CF =	1E-06	kg/mg	CF =	1E-06	kg/mg
CS =	EPC	Surface Only	CS =	EPC	Surface Only
BW =	70	kg	BW =	15	kg
IR =	100	mg soil/day	IR =	200	mg soil/day
FI =	1	unitless	FI =	1	unitless
EF =	350	days/year	EF =	350	days/year
ED =	24	years	ED =	6	years
AT (Nc) =	8,760	days	AT (Nc) =	2,190	days
AT (Car) =	25,550	days	AT (Car) =	25,550	days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA = Information not available.
ND = Compound not detected.

ATTACHMENT A TABLE 7 (Disposal Pits A/B)
CALCULATION OF ABSORBED DOSE AND RISK FROM DERMAL CONTACT TO SOIL
REASONABLE MAXIMUM EXPOSURE (RME)
SEAD-12 Updated Risk Assessment
Seneca Army Depot Activity

Equation for Intake = $\frac{CS \times CF \times SA \times AF \times ABS \times EF \times ED}{BW \times AT}$ (mg/kg-day)

Variables (Assumptions for Each Receptor are Listed at the Bottom):

CS = Chemical Concentration in Soil, from Soil EPC Data
CF = Conversion Factor
SA = Surface Area Contact
AF = Adherence Factor
ABS = Absorption Factor
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Dermal RfD (mg/kg-day)	Carc. Slope Dermal (mg/kg-day)-1	Absorption Factor* (unitless)	EPC from Total Soils (mg/kg)	Current Site Worker: Absorbed Dose (mg/kg-day) (Nc)	Current Site Worker: Absorbed Dose (mg/kg-day) (Car)	Current Site Worker: Hazard Quotient	Current Site Worker: Cancer Risk	Future Outdoor Park Worker: Absorbed Dose (mg/kg-day) (Nc)	Future Outdoor Park Worker: Absorbed Dose (mg/kg-day) (Car)	Future Outdoor Park Worker: Hazard Quotient	Future Outdoor Park Worker: Cancer Risk
Semi Volatile Organics												
Benzo(a)anthracene	NA	7.30E-01	0.13	8.61E-02		2.06E-09		2E-09		1.81E-08		1E-08
Benzo(a)pyrene	NA	7.30E+00	0.13	6.61E-02		1.59E-09		1E-08		1.39E-08		1E-07
Benzo(b)fluoranthene	NA	7.30E-01	0.13	8.15E-02		1.96E-09		1E-09		1.71E-08		1E-08
Benzo(ghi)perylene	NA	NA	0.13	6.70E-03								
Benzo(k)fluoranthene	NA	7.30E-02	0.13	8.01E-02		1.92E-09		1E-10		1.68E-08		1E-09
Chrysene	3.00E-04	7.30E-03	0.13	1.07E-01	7.16E-09	2.56E-09	2E-05	2E-11	6.26E-08	2.24E-08	2E-04	2E-10
Di-n-octylphthalate	2.00E-02	NA	0.1	9.04E-03	4.67E-10		2E-08		4.09E-09		2E-07	
Dibenz(a,h)anthracene	NA	7.30E+00	0.13	6.00E-03		1.44E-10		1E-09		1.26E-09		9E-09
Indeno(1,2,3-cd)pyrene	NA	7.30E-01	0.13	5.31E-02		1.27E-09		9E-10		1.11E-08		8E-09
Phenanthrene	NA	NA	0.13	7.15E-02								
Metals												
Calcium	NA	NA	0.01	6.72E+04								
Potassium	NA	NA	0.01	1.69E+03								
Selenium	5.00E-03	NA	0.01	1.90E+00	9.82E-09		2E-06		8.59E-08		2E-05	
Thallium	6.00E-04	NA	0.01	9.54E-01	4.93E-09		8E-06		4.31E-08		7E-05	
Total Hazard Quotient and Cancer Risk:							**2.6E-05**	**1.7E-08**			**2.3E-04**	**1.5E-07**

Assumptions for Current Site Worker			Assumptions for Future Outdoor Park Worker		
CS =	EPC	Surface Only	CS =	EPC	Surface Only
CF =	1.00E-06	kg/mg	CF =	1.00E-06	kg/mg
SA =	3,300	cm2	SA =	3,300	cm2
AF =	0.2	mg/cm2	AF =	0.2	mg/cm2
EF =	20	days/year	EF =	175	days/year
ED =	25	years	ED =	25	years
BW =	70	kg	BW =	70	kg
AT (Nc) =	9125	days	AT (Nc) =	9125	days
AT (Car) =	25550	days	AT (Car) =	25550	days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA = Information not available.
ND = Compound not detected.

* USEPA Region 2 recommends quantifying dermal exposure only for cadmium, arsenic, PCBs, dioxins/furans and pentachlorophenol, since absorption factors are not available for other chemicals of concern.

ATTACHMENT A TABLE 7 (Disposal Pits A/B)
CALCULATION OF ABSORBED DOSE AND RISK FROM DERMAL CONTACT TO SOIL
REASONABLE MAXIMUM EXPOSURE (RME)
SEAD-12 Updated Risk Assessment
Seneca Army Depot Activity

Equation for Intake = $\frac{CS \times CF \times SA \times AF \times ABS \times EF \times ED}{BW \times AT}$ (mg/kg-day)

Variables (Assumptions for Each Receptor are Listed at the Bottom):

CS = Chemical Concentration in Soil, from Soil EPC Data
CF = Conversion Factor
SA = Surface Area Contact
AF = Adherence Factor
ABS = Absorption Factor
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Dermal RfD (mg/kg-day)	Carc. Slope Dermal (mg/kg-day)-1	Absorption Factor* (unitless)	EPC from Total Soils (mg/kg)	Future Recreational Visitor (Child) Absorbed Dose (mg/kg-day) (Nc)	Absorbed Dose (mg/kg-day) (Car)	Hazard Quotient	Cancer Risk	Future Construction Worker Absorbed Dose (mg/kg-day) (Nc)	Absorbed Dose (mg/kg-day) (Car)	Hazard Quotient	Cancer Risk
Semi Volatile Organics												
Benzo(a)anthracene	NA	7.30E-01	0.13	8.61E-02		1.14E-09		8E-10		1.55E-09		1E-09
Benzo(a)pyrene	NA	7.30E+00	0.13	6.61E-02		8.79E-10		6E-09		1.19E-09		9E-09
Benzo(b)fluoranthene	NA	7.30E-01	0.13	8.15E-02		1.08E-09		8E-10		1.47E-09		1E-09
Benzo(ghi)perylene	NA	NA	0.13	6.70E-03								
Benzo(k)fluoranthene	NA	7.30E-02	0.13	8.01E-02		1.06E-09		8E-11		1.44E-09		1E-10
Chrysene	3.00E-04	7.30E-03	0.13	1.07E-01	1.98E-08	1.42E-09	7E-05	1E-11	1.34E-07	1.92E-09	4E-04	1E-11
Di-n-octylphthalate	2.00E-02	NA	0.1	9.04E-03	1.29E-09		6E-08		8.76E-09		4E-07	
Dibenz(a,h)anthracene	NA	7.30E+00	0.13	6.00E-03		7.98E-11		6E-10		1.08E-10		8E-10
Indeno(1,2,3-cd)pyrene	NA	7.30E-01	0.13	5.31E-02		7.06E-10		5E-10		9.56E-10		7E-10
Phenanthrene	NA	NA	0.13	7.15E-02								
Metals												
Calcium	NA	NA	0.01	6.72E+04								
Potassium	NA	NA	0.01	1.69E+03								
Selenium	5.00E-03	NA	0.01	1.90E+00	2.72E-08		5E-06		1.84E-07		4E-05	
Thallium	6.00E-04	NA	0.01	9.54E-01	1.37E-08		2E-05		9.24E-08		2E-04	
Total Hazard Quotient and Cancer Risk:							**7.2E-05**	**9.2E-09**			**4.8E-04**	**1.2E-08**

Assumptions for Future Recreational Visitor (Child)			Assumptions for Future Construction Worker		
CS =	EPC	Surface Or	CS =	EPC	Surface/Subsurface
CF =	1.00E-06	kg/mg	CF =	1.00E-06	kg/mg
SA =	2,800	cm2	SA =	3,300	cm2
AF =	0.2	mg/cm2	AF =	0.3	mg/cm2
EF =	14	days/year	EF =	250	days/year
ED =	5	years	ED =	1	years
BW =	15	kg	BW =	70	kg
AT (Nc) =	1825	days	AT (Nc) =	365	days
AT (Car) =	25550	days	AT (Car) =	25550	days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA = Information not available.
ND = Compound not detected.

* USEPA Region 2 recommends quantifying dermal exposure only for cadmium, arsenic, PCBs, dioxins/furans and pentachlorophenol, since absorption factors are not available for other chemicals of concern.

ATTACHMENT A TABLE 7 (Disposal Pits A/B)
CALCULATION OF ABSORBED DOSE AND RISK FROM DERMAL CONTACT TO SOIL
REASONABLE MAXIMUM EXPOSURE (RME)
SEAD-12 Updated Risk Assessment
Seneca Army Depot Activity

Equation for Intake = $\frac{CS \times CF \times SA \times AF \times ABS \times EF \times ED}{BW \times AT}$ (mg/kg-day)

Variables (Assumptions for Each Receptor are Listed at the Bottom):

CS = Chemical Concentration in Soil, from Soil EPC Data
CF = Conversion Factor
SA = Surface Area Contact
AF = Adherence Factor
ABS = Absorption Factor
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor
Equation for Total Lifetime Cancer Risk = Adult Contribution + Child Contribution

Analyte	Dermal RfD (mg/kg-day)	Carc. Slope Dermal (mg/kg-day)-1	Absorption Factor* (unitless)	EPC from Total Soils (mg/kg)	Future Resident (Adult) Intake (mg/kg-day) (Nc)	Future Resident (Adult) Intake (mg/kg-day) (Car)	Future Resident (Adult) Hazard Quotient	Future Resident (Adult) Contribution to Lifetime Cancer Risk	Future Resident (Child) Intake (mg/kg-day) (Nc)	Future Resident (Child) Intake (mg/kg-day) (Car)	Future Resident (Child) Hazard Quotient	Future Resident (Child) Contribution to Lifetime Cancer Risk	Resident Total Lifetime Cancer Risk
Semi Volatile Organics													
Benzo(a)anthracene	NA	7.30E-01	0.13	8.61E-02		2.10E-08		2E-08		3.43E-08		3E-08	4E-08
Benzo(a)pyrene	NA	7.30E+00	0.13	6.61E-02		1.61E-08		1E-07		2.64E-08		2E-07	3E-07
Benzo(b)fluoranthene	NA	7.30E-01	0.13	8.15E-02		1.99E-08		1E-08		3.25E-08		2E-08	4E-08
Benzo(ghi)perylene	NA	NA	0.13	6.70E-03									
Benzo(k)fluoranthene	NA	7.30E-02	0.13	8.01E-02		1.95E-08		1E-09		3.19E-08			
Chrysene	3.00E-04	7.30E-03	0.13	1.07E-01	7.57E-08	2.60E-08	3E-04	2E-10	4.96E-07	4.25E-08			
Di-n-octylphthalate	2.00E-02	NA	0.1	9.04E-03	4.94E-09		2E-07		3.24E-08		2E-06		
Dibenz(a,h)anthracene	NA	7.30E+00	0.13	6.00E-03		1.46E-09		1E-08		2.39E-09			
Indeno(1,2,3-cd)pyrene	NA	7.30E-01	0.13	5.31E-02		1.29E-08		9E-09		2.12E-08			
Phenanthrene	NA	NA	0.13	7.15E-02									
Metals													
Calcium	NA	NA	0.01	6.72E+04									
Potassium	NA	NA	0.01	1.69E+03									
Selenium	5.00E-03	NA	0.01	1.90E+00	1.04E-07		2E-05		6.80E-07		1E-04		
Thallium	6.00E-04	NA	0.01	9.54E-01	5.21E-08		9E-05		3.42E-07				
Total Hazard Quotient and Cancer Risk:							**2.7E-04**	**1.7E-07**			**1.4E-04**	**2.4E-07**	**3.9E-07**

Assumptions for Future Resident (Adult)			Assumptions for Future Resident (Child)		
CS =	EPC	Surface Only	CS =	EPC	Surface Only
CF =	1.00E-06	kg/mg	CF =	1.00E-06	kg/mg
SA =	5,700	cm2	SA =	2,800	cm2
AF =	0.07	mg/cm2	AF =	0.2	mg/cm2
EF =	350	days/year	EF =	350	days/year
ED =	24	years	ED =	6	years
BW =	70	kg	BW =	15	kg
AT (Nc) =	8760	days	AT (Nc) =	2190	days
AT (Car) =	25550	days	AT (Car) =	25550	days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA = Information not available.
ND = Compound not detected.

* USEPA Region 2 recommends quantifying dermal exposure only for cadmium, arsenic, PCBs, dioxins/furans and pentachlorophenol, since absorption factors are not available for other chemicals of concern.

ATTACHMENT B

DISPOSAL PIT C DATA

Attachment B Table 1
Soil Samples Considered in Updated Risk Assessment
SEAD-12 Disposal Pit C (C1 C2)

Seneca Army Depot Activity
Romulus, NY

								Area	SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
								Location_Id	S12EXFL-B-2-01		S12EXFL-C-2-01		S12EXFL-E-1-01		S12EXPR-A-2-01		S12EXPR-B-1-01	
								Matrix	SOIL		SOIL		SOIL		SOIL		SOIL	
								Sample_Id	S12EXFL-B-2-01		S12EXFL-C-2-01		S12EXFL-E-1-01		S12EXPR-A-2-01		S12EXPR-B-1-01	
								Samp_Depth_Top	0		0		0		0		0	
								Samp_Depth_Bot	0.2		0.2		0.2		0.2		0.2	
								Sample_Date	7/29/2009		7/29/2009		7/29/2009		7/29/2009		7/29/2009	
									SA		SA		SA		SA		SA	
		Maximum	Frequency			Number	Number	Number	RA		RA		RA		RA		RA	
		Concentration	of	Action	Number	of Times	of		Pit C1		Pit C1		Pit C1		Pit C1		Pit C1	
Parameter	**Units**	**Detected**	**Detection**	**Level (1)**	**of Exceedances**	**Detected**	**Samples**		Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)
Volatile Organic Compounds																		
Acetone	UG/KG	18	24%	50	0	20	85		22	UJ	22	UJ	22	UJ	1.7	UJ	22	UJ
Carbon disulfide	UG/KG	0.85	1%		0	1	85		0.56	UJ	0.57	UJ	0.56	UJ	0.57	UJ	0.56	UJ
Cis-1,2-Dichloroethene	UG/KG	0.45	2%	250	0	1	64		0.34	UJ	0.35	UJ	0.34	UJ	0.35	UJ	0.34	UJ
Meta/Para Xylene	UG/KG	0.86	3%	260	0	2	64		1.1	UJ	1.1	UJ	1.1	UJ	1.1	UJ	1.1	UJ
Methyl ethyl ketone	UG/KG	1.6	4%	120	0	3	85		0.83	UJ	0.86	J	0.84	UJ	0.84	UJ	0.88	J
Methylene chloride	UG/KG	2.8	24%	50	0	20	85		0.42	UJ	0.42	UJ	0.42	UJ	0.42	UJ	0.41	UJ
Styrene	UG/KG	0.61	1%		0	1	85		0.49	UJ	0.5	UJ	0.5	UJ	0.5	UJ	0.49	UJ
Toluene	UG/KG	62	39%	700	0	33	85		0.35	UJ	0.36	UJ	0.36	UJ	0.63	J	0.35	UJ
Trichloroethene	UG/KG	1	6%	470	0	5	85		0.44	UJ	0.45	UJ	0.44	UJ	0.48	J	0.44	UJ
Semivolatile Organic Compounds																		
2-Methylnaphthalene	UG/KG	4.4	1%		0	1	84		35	UJ	36	UJ	36	UJ	36	UJ	35	UJ
Anthracene	UG/KG	5.4	1%	100000	0	1	84		40	UJ	41	UJ	41	UJ	41	UJ	40	UJ
Benzo(a)anthracene	UG/KG	16	8%	1000	0	7	84		43	UJ	44	UJ	43	UJ	43	UJ	43	UJ
Benzo(a)pyrene	UG/KG	39	11%	1000	0	9	85		36	UJ	37	UJ	37	UJ	37	UJ	36	UJ
Benzo(b)fluoranthene	UG/KG	16	11%	1000	0	9	84		51	UJ	52	UJ	52	UJ	52	UJ	51	UJ
Benzo(ghi)perylene	UG/KG	39	12%	100000	0	10	85		97	UJ	99	UJ	98	UJ	98	UJ	97	UJ
Benzo(k)fluoranthene	UG/KG	16	8%	800	0	7	84		52	UJ	54	UJ	53	UJ	53	UJ	52	UJ
Benzyl alcohol	UG/KG	190	58%		0	37	64		45	J	43	J	40	J	26	UJ	40	J
Bis(2-Ethylhexyl)phthalate	UG/KG	96	15%		0	13	85		60	UJ	61	UJ	61	UJ	61	UJ	70	J
Butylbenzylphthalate	UG/KG	30	4%		0	3	84		44	UJ	45	UJ	44	UJ	44	UJ	44	UJ
Carbazole	UG/KG	7.4	2%		0	2	84		59	UJ	60	UJ	60	UJ	60	UJ	59	UJ
Chrysene	UG/KG	19	13%	1000	0	11	84		44	UJ	45	UJ	44	UJ	44	UJ	44	UJ
Di-n-butylphthalate	UG/KG	52	5%		0	4	84		150	UJ	150	UJ	150	UJ	150	UJ	150	UJ
Di-n-octylphthalate	UG/KG	20	8%		0	7	84		36	UJ	37	UJ	37	UJ	37	UJ	36	UJ
Dibenz(a,h)anthracene	UG/KG	5.6	1%	330	0	1	84		42	UJ	42	UJ	42	UJ	42	UJ	41	UJ
Dibenzofuran	UG/KG	4.1	1%	7000	0	1	84		39	UJ	40	UJ	40	UJ	40	UJ	39	UJ
Dimethylphthalate	UG/KG	86	7%		0	6	84		43	UJ	44	UJ	43	UJ	43	UJ	43	UJ
Fluoranthene	UG/KG	88	14%	100000	0	12	85		43	UJ	44	UJ	43	UJ	43	UJ	43	UJ
Indeno(1,2,3-cd)pyrene	UG/KG	12	7%	500	0	6	84		39	UJ	40	UJ	40	UJ	40	UJ	39	UJ
Phenanthrene	UG/KG	52	15%	100000	0	13	84		44	UJ	45	UJ	44	UJ	44	UJ	44	UJ
Pyrene	UG/KG	64	15%	100000	0	13	85		38	UJ	39	UJ	39	UJ	39	UJ	38	UJ
Pesticides/PCBs																		
Aroclor-1254	UG/KG	78	2%	100	0	2	85		19	UJ	19	UJ	19	UJ	19	UJ	19	UJ
4,4'-DDD	UG/KG	8.6	2%	3.3	2	2	85		1.9	UJ	1.9	UJ	1.9	UJ	1.9	UJ	1.9	UJ
4,4'-DDE	UG/KG	5.9	4%	3.3	2	3	85		1.9	UJ	1.9	UJ	1.9	UJ	1.9	UJ	1.9	UJ
4,4'-DDT	UG/KG	9.8	5%	3.3	3	4	85		1.9	UJ	1.9	UJ	1.9	UJ	1.9	UJ	1.9	UJ
Alpha-BHC	UG/KG	210	5%	20	2	4	85		0.91	UJ	0.93	UJ	0.92	UJ	0.93	UJ	0.91	UJ
Beta-BHC	UG/KG	63	1%	36	1	1	85		0.91	UJ	0.93	UJ	0.92	UJ	0.93	UJ	0.91	UJ

Attachment B Table 1
Soil Samples Considered in Updated Risk Assessment
SEAD-12 Disposal Pit C (C1 C2)

Seneca Army Depot Activity
Romulus, NY

								Area	SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
								Location_Id	S12EXFL-B-2-01		S12EXFL-C-2-01		S12EXFL-E-1-01		S12EXPR-A-2-01		S12EXPR-B-1-01	
								Matrix	SOIL		SOIL		SOIL		SOIL		SOIL	
								Sample_Id	S12EXFL-B-2-01		S12EXFL-C-2-01		S12EXFL-E-1-01		S12EXPR-A-2-01		S12EXPR-B-1-01	
								Samp_Depth_Top	0		0		0		0		0	
								Samp_Depth_Bot	0.2		0.2		0.2		0.2		0.2	
								Sample_Date	7/29/2009		7/29/2009		7/29/2009		7/29/2009		7/29/2009	
									SA		SA		SA		SA		SA	
		Maximum	Frequency			Number	Number		RA		RA		RA		RA		RA	
		Concentration	of	Action	Number	of Times	of		Pit C1		Pit C1		Pit C1		Pit C1		Pit C1	
Parameter	**Units**	**Detected**	**Detection**	**Level (1)**	**of Exceedances**	**Detected**	**Samples**		Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)
Delta-BHC	UG/KG	61	4%	40	1	3	85		0.91	UJ	0.93	UJ	0.92	UJ	0.93	UJ	0.91	UJ
Metals																		
Aluminum	MG/KG	35100	100%		0	85	85		10100	J	9830	J	8760	J	6830	J	12400	J
Antimony	MG/KG	0.28	1%		0	1	68		0.4	UJ	0.4	UJ	0.4	UJ	0.4	UJ	0.4	UJ
Arsenic	MG/KG	12.2	100%	13	0	85	85		3.7	J	4.3	J	3.4	J	1.5	J	2.7	J
Barium	MG/KG	304	100%	350	0	85	85		102	J	134	J	72.2	J	48.2	J	104	J
Beryllium	MG/KG	1.7	96%	7.2	0	82	85		0.56	J	0.56	J	0.53	UJ	0.55	UJ	0.68	J
Cadmium	MG/KG	1.25	29%	2.5	0	25	85		0.17	J	0.16	J	0.11	J	0.14	J	0.17	J
Calcium	MG/KG	186000	100%		0	85	85		84700	J	81400	J	77100	J	146000	J	90600	J
Chromium	MG/KG	51.2	100%	30	1	85	85		16.1	J	16.4	J	13.4	J	9.6	J	20.4	J
Cobalt	MG/KG	29	100%		0	85	85		10.7	J	9.2	J	7.8	J	4.9	J	11.4	J
Copper	MG/KG	74.5	100%	50	2	85	85		20.7	J	25.1	J	20	J	10.7	J	23.1	J
Cyanide	MG/KG	2.2	1%	27	0	1	85		0.5	UJ	0.5	UJ	0.5	UJ	0.5	UJ	0.5	UJ
Iron	MG/KG	56400	100%		0	85	85		21000	J	21400	J	19900	J	12100	J	25700	J
Lead	MG/KG	431	100%	63	2	85	85		10.3	J	10.4	J	7.8	J	7.6	J	10.2	J
Magnesium	MG/KG	74400	100%		0	85	85		16200	J	13700	J	10700	J	74400	J	12200	J
Manganese	MG/KG	1650	100%	1600	2	85	85		500	J	401	J	498	J	499	J	478	J
Mercury	MG/KG	0.15	76%	0.18	0	65	85		0.02	J	0.02	J	0.01	J	0.03	J	0.01	J
Nickel	MG/KG	75	95%	30	24	81	85		28.9	J	**30.7**	J	24	J	14.2	J	**36**	J
Potassium	MG/KG	5330	100%		0	85	85		1830	J	1700	J	1570	J	1100	J	1930	J
Selenium	MG/KG	2	21%	3.9	0	18	85		1	J	0.79	J	0.173	UJ	0.173	UJ	0.173	UJ
Silver	MG/KG	0.27	2%	2	0	2	85		1.04	UJ	0.0257	UJ	1.06	UJ	0.0257	UJ	0.0257	UJ
Sodium	MG/KG	1420	91%		0	77	85		169	J	144	J	130	J	214	J	176	J
Thallium	MG/KG	1.7	11%		0	9	85		0.176	UJ	0.176	UJ	0.176	UJ	0.176	UJ	0.176	UJ
Vanadium	MG/KG	68	100%		0	85	85		17	J	18	J	16.9	J	12.7	J	19.5	J
Zinc	MG/KG	6080	100%	109	3	85	85		52	J	49.1	J	48.9	J	29.1	J	49.8	J

Notes:
(1) Action Level presented is New York State's Unrestricted Use Soil Cleanup Objective (SCO) 6NYCRR375-6.8(a)
(Q) = Qualifier: <null space> detected; J estimated; U not detected; UJ not detected at estimated level; R rejected.
(Q) = Qualifier: UR detection limit rejected.
UG/KG = micrograms per kilogram; MG/KG = milligrams per kilogram.

Attachment B Table 1
Soil Samples Considered in Updated Risk Assessment
SEAD-12 Disposal Pit C (C1 C2)

Seneca Army Depot Activity
Romulus, NY

								Area	SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
								Location_Id	S12EXPR-B-2-01		S12EXPR-B-2-01		S12EXPR-C-1-01		S12EXPR-C-2-01		S12EXPR-D-1-01	
								Matrix	SOIL		SOIL		SOIL		SOIL		SOIL	
								Sample_Id	S12EXPR-B-2-02		S12EXPR-B-2-01		S12EXPR-C-1-01		S12EXPR-C-2-01		S12EXPR-D-1-01	
								Samp_Depth_Top	0		0		0		0		0	
								Samp_Depth_Bot	0.2		0.2		0.2		0.2		0.2	
								Sample_Date	7/29/2009		7/29/2009		7/29/2009		7/29/2009		7/29/2009	
									DU		SA		SA		SA		SA	
		Maximum	Frequency			Number	Number		RA		RA		RA		RA		RA	
		Concentration	of	Action	Number	of Times	of		Pit C1		Pit C1		Pit C1		Pit C1		Pit C1	
Parameter	**Units**	**Detected**	**Detection**	**Level (1)**	**of Exceedances**	**Detected**	**Samples**		Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)
Volatile Organic Compounds																		
Acetone	UG/KG	18	24%	50	0	20	85		4.2	J	4.1	J	22	UJ	22	UJ	24	UJ
Carbon disulfide	UG/KG	0.85	1%		0	1	85		0.59	UJ	0.61	UJ	0.57	UJ	0.56	UJ	0.6	UJ
Cis-1,2-Dichloroethene	UG/KG	0.45	2%	250	0	1	64		0.26	UJ	0.27	UJ	0.25	UJ	0.24	UJ	0.26	UJ
Meta/Para Xylene	UG/KG	0.86	3%	260	0	2	64		0.72	UJ	0.75	UJ	0.7	UJ	0.69	UJ	0.75	UJ
Methyl ethyl ketone	UG/KG	1.6	4%	120	0	3	85		0.87	UJ	0.91	UJ	0.85	UJ	0.83	UJ	0.9	UJ
Methylene chloride	UG/KG	2.8	24%	50	0	20	85		0.44	UJ	0.48	J	0.43	UJ	0.42	UJ	0.45	UJ
Styrene	UG/KG	0.61	1%		0	1	85		0.32	UJ	0.34	UJ	0.32	UJ	0.31	UJ	0.33	UJ
Toluene	UG/KG	62	39%	700	0	33	85		0.61	J	0.57	J	0.37	J	0.35	UJ	0.38	UJ
Trichloroethene	UG/KG	1	6%	470	0	5	85		0.46	UJ	0.48	UJ	0.45	UJ	0.44	UJ	0.48	UJ
Semivolatile Organic Compounds																		
2-Methylnaphthalene	UG/KG	4.4	1%		0	1	84		37	UJ	39	UJ	36	UJ	35	UJ	38	UJ
Anthracene	UG/KG	5.4	1%	100000	0	1	84		43	UJ	44	UJ	42	UJ	41	UJ	44	UJ
Benzo(a)anthracene	UG/KG	16	8%	1000	0	7	84		45	UJ	47	UJ	44	UJ	43	UJ	46	UJ
Benzo(a)pyrene	UG/KG	39	11%	1000	0	9	85		38	UJ	40	UJ	37	UJ	36	UJ	39	UJ
Benzo(b)fluoranthene	UG/KG	16	11%	1000	0	9	84		54	UJ	56	UJ	53	UJ	51	UJ	56	UJ
Benzo(ghi)perylene	UG/KG	39	12%	100000	0	10	85		110	UJ	110	UJ	99	UJ	97	UJ	110	UJ
Benzo(k)fluoranthene	UG/KG	16	8%	800	0	7	84		55	UJ	58	UJ	54	UJ	52	UJ	57	UJ
Benzyl alcohol	UG/KG	190	58%		0	37	64		27	UJ	28	UJ	57	J	36	J	59	J
Bis(2-Ethylhexyl)phthalate	UG/KG	96	15%		0	13	85		63	UJ	66	UJ	62	UJ	60	UJ	96	J
Butylbenzylphthalate	UG/KG	30	4%		0	3	84		46	UJ	48	UJ	45	UJ	44	UJ	48	UJ
Carbazole	UG/KG	7.4	2%		0	2	84		62	UJ	65	UJ	60	UJ	59	UJ	64	UJ
Chrysene	UG/KG	19	13%	1000	0	11	84		46	UJ	48	UJ	45	UJ	44	UJ	48	UJ
Di-n-butylphthalate	UG/KG	52	5%		0	4	84		160	UJ	170	UJ	150	UJ	150	UJ	160	UJ
Di-n-octylphthalate	UG/KG	20	8%		0	7	84		38	UJ	40	UJ	37	UJ	36	UJ	39	UJ
Dibenz(a,h)anthracene	UG/KG	5.6	1%	330	0	1	84		44	UJ	46	UJ	43	UJ	42	UJ	45	UJ
Dibenzofuran	UG/KG	4.1	1%	7000	0	1	84		41	UJ	43	UJ	40	UJ	39	UJ	43	UJ
Dimethylphthalate	UG/KG	86	7%		0	6	84		45	UJ	47	UJ	44	UJ	43	UJ	46	UJ
Fluoranthene	UG/KG	88	14%	100000	0	12	85		45	UJ	47	UJ	44	UJ	43	UJ	46	UJ
Indeno(1,2,3-cd)pyrene	UG/KG	12	7%	500	0	6	84		41	UJ	43	UJ	40	UJ	39	UJ	43	UJ
Phenanthrene	UG/KG	52	15%	100000	0	13	84		46	UJ	48	UJ	45	UJ	44	UJ	48	UJ
Pyrene	UG/KG	64	15%	100000	0	13	85		40	UJ	42	UJ	39	UJ	38	UJ	42	UJ
Pesticides/PCBs																		
Aroclor-1254	UG/KG	78	2%	100	0	2	85		20	UJ	21	UJ	19	UJ	19	UJ	20	UJ
4,4'-DDD	UG/KG	8.6	2%	3.3	2	2	85		1.9	UJ	2	UJ	1.9	UJ	1.9	UJ	2	UJ
4,4'-DDE	UG/KG	5.9	4%	3.3	2	3	85		1.9	UJ	2	UJ	1.9	UJ	1.9	UJ	2	UJ
4,4'-DDT	UG/KG	9.8	5%	3.3	3	4	85		1.9	UJ	2	UJ	1.9	UJ	1.9	UJ	2	UJ
Alpha-BHC	UG/KG	210	5%	20	2	4	85		0.96	UJ	1	UJ	0.94	UJ	0.91	UJ	0.99	UJ
Beta-BHC	UG/KG	63	1%	36	1	1	85		0.96	UJ	1	UJ	0.94	UJ	0.91	UJ	0.99	UJ

Attachment B Table 1
Soil Samples Considered in Updated Risk Assessment
SEAD-12 Disposal Pit C (C1 C2)

Seneca Army Depot Activity
Romulus, NY

								Area	SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
								Location_Id	S12EXPR-B-2-01		S12EXPR-B-2-01		S12EXPR-C-1-01		S12EXPR-C-2-01		S12EXPR-D-1-01	
								Matrix	SOIL		SOIL		SOIL		SOIL		SOIL	
								Sample_Id	S12EXPR-B-2-02		S12EXPR-B-2-01		S12EXPR-C-1-01		S12EXPR-C-2-01		S12EXPR-D-1-01	
								Samp_Depth_Top	0		0		0		0		0	
								Samp_Depth_Bot	0.2		0.2		0.2		0.2		0.2	
								Sample_Date	7/29/2009		7/29/2009		7/29/2009		7/29/2009		7/29/2009	
									DU		SA		SA		SA		SA	
		Maximum	Frequency			Number	Number		RA		RA		RA		RA		RA	
		Concentration	of	Action	Number	of Times	of		Pit C1		Pit C1		Pit C1		Pit C1		Pit C1	
Parameter	**Units**	**Detected**	**Detection**	**Level (1)**	**of Exceedances**	**Detected**	**Samples**		Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)
Delta-BHC	UG/KG	61	4%	40	1	3	85		0.96	UJ	1	UJ	0.94	UJ	0.91	UJ	0.99	UJ
Metals																		
Aluminum	MG/KG	35100	100%		0	85	85		12000	J	13900	J	9850	J	9930	J	12300	J
Antimony	MG/KG	0.28	1%		0	1	68		0.4	UJ	0.4	UJ	0.4	UJ	0.4	UJ	0.4	UJ
Arsenic	MG/KG	12.2	100%	13	0	85	85		3.4	J	3.2	J	5	J	3.8	J	3.8	J
Barium	MG/KG	304	100%	350	0	85	85		119	J	154	J	109	J	108	J	84.2	J
Beryllium	MG/KG	1.7	96%	7.2	0	82	85		0.62	J	0.69	J	0.58	J	0.55	J	0.65	J
Cadmium	MG/KG	1.25	29%	2.5	0	25	85		0.55	UJ	0.58	UJ	0.16	J	0.16	J	0.31	J
Calcium	MG/KG	186000	100%		0	85	85		57400	J	57300	J	92400	J	85100	J	64700	J
Chromium	MG/KG	51.2	100%	30	1	85	85		16.9	J	19.3	J	15.9	J	15.9	J	19.9	J
Cobalt	MG/KG	29	100%		0	85	85		9.4	J	11.5	J	10.6	J	10.3	J	9.8	J
Copper	MG/KG	74.5	100%	50	2	85	85		20.3	J	20.7	J	27.9	J	21.5	J	22.2	J
Cyanide	MG/KG	2.2	1%	27	0	1	85		0.5	UJ	0.5	UJ	0.5	UJ	0.5	UJ	0.5	UJ
Iron	MG/KG	56400	100%		0	85	85		22500	J	25400	J	21300	J	21200	J	24000	J
Lead	MG/KG	431	100%	63	2	85	85		9.4	J	9.7	J	9.8	J	9.2	J	15.4	J
Magnesium	MG/KG	74400	100%		0	85	85		17000	J	17200	J	15300	J	16100	J	12600	J
Manganese	MG/KG	1650	100%	1600	2	85	85		480	J	572	J	437	J	462	J	428	J
Mercury	MG/KG	0.15	76%	0.18	0	65	85		0.01	J	0.02	J	0.02	J	0.02	J	0.03	J
Nickel	MG/KG	75	95%	30	24	81	85		21.9	J	25.9	J	**34.3**	J	28.6	J	**30.5**	J
Potassium	MG/KG	5330	100%		0	85	85		2020	J	2370	J	1860	J	1730	J	1780	J
Selenium	MG/KG	2	21%	3.9	0	18	85		1	J	1.16	UJ	0.173	UJ	0.173	UJ	0.61	J
Silver	MG/KG	0.27	2%	2	0	2	85		0.0257	UJ	0.0257	UJ	1.09	UJ	0.0257	UJ	0.0257	UJ
Sodium	MG/KG	1420	91%		0	77	85		145	J	155	J	159	J	155	J	138	J
Thallium	MG/KG	1.7	11%		0	9	85		0.176	UJ	0.176	UJ	0.176	UJ	0.176	UJ	0.176	UJ
Vanadium	MG/KG	68	100%		0	85	85		24.7	J	26.8	J	18.3	J	17.4	J	20.6	J
Zinc	MG/KG	6080	100%	109	3	85	85		48.5	J	53.7	J	49.7	J	49.3	J	102	J

Notes:
(1) Action Level presented is New York State's Unrestricted Use Soil Cleanup Objective (SCO) 6NYCRR375-6.8(a)
(Q) = Qualifier: <null space> detected; J estimated; U not detected; UJ not detected at estimated level; R rejected.
(Q) = Qualifier: UR detection limit rejected.
UG/KG = micrograms per kilogram; MG/KG = milligrams per kilogram.

Attachment B Table 1
Soil Samples Considered in Updated Risk Assessment
SEAD-12 Disposal Pit C (C1 C2)

Seneca Army Depot Activity
Romulus, NY

								Area	SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
								Location_Id	S12EXPR-D-2-01		S12EXPR-E-1-01		S12EXSW-A-2-01		S12EXSW-B-1-01		S12EXSW-B-2-01	
								Matrix	SOIL		SOIL		SOIL		SOIL		SOIL	
								Sample_Id	S12EXPR-D-2-01		S12EXPR-E-1-01		S12EXSW-A-2-01		S12EXSW-B-1-01		S12EXSW-B-2-01	
								Samp_Depth_Top	0		0		0		0		0	
								Samp_Depth_Bot	0.2		0.2		0		0		0	
								Sample_Date	7/29/2009		7/29/2009		8/5/2009		8/5/2009		8/5/2009	
									SA		SA		SA		SA		SA	
		Maximum	Frequency			Number	Number		RA		RA		RA		RA		RA	
		Concentration	of	Action	Number	of Times	of		Pit C1		Pit C1		Pit C1		Pit C1		Pit C1	
Parameter	**Units**	**Detected**	**Detection**	**Level (1)**	**of Exceedances**	**Detected**	**Samples**		Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)
Volatile Organic Compounds																		
Acetone	UG/KG	18	24%	50	0	20	85		3.5	J	25	UJ	22	UJ	1.7	UJ	70	UJ
Carbon disulfide	UG/KG	0.85	1%		0	1	85		0.56	UJ	0.64	UJ	0.56	U	0.56	U	1.8	U
Cis-1,2-Dichloroethene	UG/KG	0.45	2%	250	0	1	64		0.25	UJ	0.28	UJ	0.34	U	0.34	U	1.1	U
Meta/Para Xylene	UG/KG	0.86	3%	260	0	2	64		0.86	J	0.78	UJ	1.1	U	1.1	U	3.3	U
Methyl ethyl ketone	UG/KG	1.6	4%	120	0	3	85		0.84	UJ	0.95	UJ	0.84	U	0.83	U	2.7	U
Methylene chloride	UG/KG	2.8	24%	50	0	20	85		0.42	UJ	0.48	UJ	0.48	J	0.42	U	1.6	J
Styrene	UG/KG	0.61	1%		0	1	85		0.31	UJ	0.35	UJ	0.5	U	0.49	U	1.6	U
Toluene	UG/KG	62	39%	700	0	33	85		0.8	J	0.4	UJ	0.46	J	0.35	U	3.3	J
Trichloroethene	UG/KG	1	6%	470	0	5	85		0.44	UJ	0.5	UJ	0.44	U	0.44	U	1.4	U
Semivolatile Organic Compounds																		
2-Methylnaphthalene	UG/KG	4.4	1%		0	1	84		36	UJ	40	UJ	36	U	35	U	120	U
Anthracene	UG/KG	5.4	1%	100000	0	1	84		41	UJ	46	UJ	41	U	41	U	130	U
Benzo(a)anthracene	UG/KG	16	8%	1000	0	7	84		43	UJ	49	UJ	43	U	43	U	140	U
Benzo(a)pyrene	UG/KG	39	11%	1000	0	9	85		37	UJ	41	UJ	37	U	36	U	120	U
Benzo(b)fluoranthene	UG/KG	16	11%	1000	0	9	84		52	UJ	59	UJ	52	U	52	U	170	U
Benzo(ghi)perylene	UG/KG	39	12%	100000	0	10	85		98	UJ	120	UJ	98	U	97	U	320	U
Benzo(k)fluoranthene	UG/KG	16	8%	800	0	7	84		53	UJ	60	UJ	53	U	53	U	170	U
Benzyl alcohol	UG/KG	190	58%		0	37	64		26	UJ	29	UJ	26	U	25	U	140	J
Bis(2-Ethylhexyl)phthalate	UG/KG	96	15%		0	13	85		61	UJ	69	UJ	61	U	60	U	200	U
Butylbenzylphthalate	UG/KG	30	4%		0	3	84		44	UJ	50	UJ	44	U	44	U	140	U
Carbazole	UG/KG	7.4	2%		0	2	84		60	UJ	67	UJ	60	U	59	U	190	U
Chrysene	UG/KG	19	13%	1000	0	11	84		44	UJ	50	UJ	44	U	44	U	140	U
Di-n-butylphthalate	UG/KG	52	5%		0	4	84		150	UJ	170	UJ	150	U	150	U	480	U
Di-n-octylphthalate	UG/KG	20	8%		0	7	84		37	UJ	41	UJ	37	U	36	U	120	U
Dibenz(a,h)anthracene	UG/KG	5.6	1%	330	0	1	84		42	UJ	48	UJ	42	U	42	U	140	U
Dibenzofuran	UG/KG	4.1	1%	7000	0	1	84		40	UJ	45	UJ	40	U	40	U	130	U
Dimethylphthalate	UG/KG	86	7%		0	6	84		43	UJ	49	UJ	43	U	43	U	140	U
Fluoranthene	UG/KG	88	14%	100000	0	12	85		43	UJ	49	UJ	43	U	43	U	140	U
Indeno(1,2,3-cd)pyrene	UG/KG	12	7%	500	0	6	84		40	UJ	45	UJ	40	U	40	U	130	U
Phenanthrene	UG/KG	52	15%	100000	0	13	84		44	UJ	50	UJ	44	U	44	U	140	U
Pyrene	UG/KG	64	15%	100000	0	13	85		39	UJ	44	UJ	39	U	39	U	130	U
Pesticides/PCBs																		
Aroclor-1254	UG/KG	78	2%	100	0	2	85		19	UJ	22	UJ	19	U	19	U	60	U
4,4'-DDD	UG/KG	8.6	2%	3.3	2	2	85		1.9	UJ	2.1	UJ	1.9	U	1.9	U	5.9	U
4,4'-DDE	UG/KG	5.9	4%	3.3	2	3	85		1.9	UJ	2.1	UJ	1.9	U	1.9	U	5.9	U
4,4'-DDT	UG/KG	9.8	5%	3.3	3	4	85		1.9	UJ	2.1	UJ	1.9	U	1.9	U	5.9	U
Alpha-BHC	UG/KG	210	5%	20	2	4	85		0.93	UJ	1.1	UJ	0.93	U	0.92	U	3	U
Beta-BHC	UG/KG	63	1%	36	1	1	85		0.93	UJ	1.1	UJ	0.93	U	0.92	U	3	U

Attachment B Table 1
Soil Samples Considered in Updated Risk Assessment
SEAD-12 Disposal Pit C (C1 C2)

Seneca Army Depot Activity
Romulus, NY

								Area	SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
								Location_Id	S12EXPR-D-2-01		S12EXPR-E-1-01		S12EXSW-A-2-01		S12EXSW-B-1-01		S12EXSW-B-2-01	
								Matrix	SOIL		SOIL		SOIL		SOIL		SOIL	
								Sample_Id	S12EXPR-D-2-01		S12EXPR-E-1-01		S12EXSW-A-2-01		S12EXSW-B-1-01		S12EXSW-B-2-01	
								Samp_Depth_Top	0		0		0		0		0	
								Samp_Depth_Bot	0.2		0.2		0		0		0	
								Sample_Date	7/29/2009		7/29/2009		8/5/2009		8/5/2009		8/5/2009	
									SA		SA		SA		SA		SA	
		Maximum	Frequency			Number	Number		RA		RA		RA		RA		RA	
		Concentration	of	Action	Number	of Times	of		Pit C1		Pit C1		Pit C1		Pit C1		Pit C1	
Parameter	**Units**	**Detected**	**Detection**	**Level (1)**	**of Exceedances**	**Detected**	**Samples**		Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)
Delta-BHC	UG/KG	61	4%	40	1	3	85		0.93	UJ	1.1	UJ	0.93	U	0.92	U	3	U
Metals																		
Aluminum	MG/KG	35100	100%		0	85	85		10700	J	16400	J	10600		10500		35100	
Antimony	MG/KG	0.28	1%		0	1	68		0.4	UJ	0.4	UJ	0.5	UJ	0.5	UJ	2	UJ
Arsenic	MG/KG	12.2	100%	13	0	85	85		4.1	J	4.1	J	4.1		3.5		12.2	
Barium	MG/KG	304	100%	350	0	85	85		110	J	106	J	97.2		98.8		304	
Beryllium	MG/KG	1.7	96%	7.2	0	82	85		0.58	J	0.82	J	0.58		0.57		1.7	
Cadmium	MG/KG	1.25	29%	2.5	0	25	85		0.55	UJ	0.27	J	0.55	U	0.53	U	1.7	U
Calcium	MG/KG	186000	100%		0	85	85		79400	J	4010	J	75100		86900		186000	
Chromium	MG/KG	51.2	100%	30	1	85	85		17.5	J	22	J	17.1		17.1		**51.2**	
Cobalt	MG/KG	29	100%		0	85	85		10.7	J	11.2	J	9.5		9.8		29	
Copper	MG/KG	74.5	100%	50	2	85	85		22.6	J	18	J	24.1		21.2		**61.4**	
Cyanide	MG/KG	2.2	1%	27	0	1	85		0.42	UJ	0.5	UJ	0.42	U	0.42	U	1.1	U
Iron	MG/KG	56400	100%		0	85	85		22400	J	25700	J	19800		19100		56400	
Lead	MG/KG	431	100%	63	2	85	85		12.5	J	17.8	J	11.3		9.8		30	
Magnesium	MG/KG	74400	100%		0	85	85		17100	J	4070	J	14800		13900		52700	
Manganese	MG/KG	1650	100%	1600	2	85	85		485	J	740	J	472		463		**1650**	
Mercury	MG/KG	0.15	76%	0.18	0	65	85		0.02	J	0.05	J	0.02	J	0.021	J	0.05	J
Nickel	MG/KG	75	95%	30	24	81	85		**30.6**	J	24.6	J	29.6	J	28.9	J	**75**	J
Potassium	MG/KG	5330	100%		0	85	85		1810	J	1740	J	1630	J	1620	J	5330	J
Selenium	MG/KG	2	21%	3.9	0	18	85		1.1	UJ	2	J	1.1	U	1.1	U	3.5	U
Silver	MG/KG	0.27	2%	2	0	2	85		0.0257	UJ	1.19	UJ	0.3	U	0.3	U	0.8	U
Sodium	MG/KG	1420	91%		0	77	85		158	J	37.2	J	140		150		390	
Thallium	MG/KG	1.7	11%		0	9	85		0.176	UJ	0.176	UJ	0.2	U	0.2	U	2	U
Vanadium	MG/KG	68	100%		0	85	85		19	J	27.7	J	19		18		68	
Zinc	MG/KG	6080	100%	109	3	85	85		62.6	J	63.8	J	57.4	J	48.9	J	**154**	J

Notes:
(1) Action Level presented is New York State's Unrestricted Use Soil Cleanup Objective (SCO) 6NYCRR375-6.8(a)
(Q) = Qualifier: <null space> detected; J estimated; U not detected; UJ not detected at estimated level; R rejected.
(Q) = Qualifier: UR detection limit rejected.
UG/KG = micrograms per kilogram; MG/KG = milligrams per kilogram.

Attachment B Table 1
Soil Samples Considered in Updated Risk Assessment
SEAD-12 Disposal Pit C (C1 C2)

Seneca Army Depot Activity
Romulus, NY

								Area	SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
								Location_Id	S12EXSW-C-1-01		S12EXSW-C-2-01		S12EXSW-D-1-01		S12EXSW-D-2-01		S12EXSW-D-2-01	
								Matrix	SOIL		SOIL		SOIL		SOIL		SOIL	
								Sample_Id	S12EXSW-C-1-01		S12EXSW-C-2-01		S12EXSW-D-1-01		S12EXSW-D-2-02		S12EXSW-D-2-01	
								Samp_Depth_Top	0		0		0		0		0	
								Samp_Depth_Bot	0		0		0		0		0	
								Sample_Date	8/5/2009		8/5/2009		8/5/2009		8/5/2009		8/5/2009	
									SA		SA		SA		DU		SA	
		Maximum	Frequency			Number	Number	Number	RA		RA		RA		RA		RA	
		Concentration	of	Action	Number of	of Times	of		Pit C1		Pit C1		Pit C1		Pit C1		Pit C1	
Parameter	**Units**	**Detected**	**Detection**	**Level (1)**	**Exceedances**	**Detected**	**Samples**		Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)
Volatile Organic Compounds																		
Acetone	UG/KG	18	24%	50	0	20	85		22	UJ	23	UJ	20	UJ	23	UJ	22	UJ
Carbon disulfide	UG/KG	0.85	1%		0	1	85		0.57	U	0.58	U	0.51	U	0.59	U	0.55	U
Cis-1,2-Dichloroethene	UG/KG	0.45	2%	250	0	1	64		0.35	U	0.36	U	0.31	U	0.36	U	0.34	U
Meta/Para Xylene	UG/KG	0.86	3%	260	0	2	64		1.1	U	1.1	U	0.93	U	1.1	U	1.1	U
Methyl ethyl ketone	UG/KG	1.6	4%	120	0	3	85		0.84	U	0.87	U	0.76	U	0.87	U	0.82	U
Methylene chloride	UG/KG	2.8	24%	50	0	20	85		0.62	J	0.48	J	0.42	J	5.7	U	0.55	J
Styrene	UG/KG	0.61	1%		0	1	85		0.5	U	0.52	U	0.45	U	0.52	U	0.49	U
Toluene	UG/KG	62	39%	700	0	33	85		1.2	J	0.82	J	1.8	J	1.1	J	0.35	U
Trichloroethene	UG/KG	1	6%	470	0	5	85		0.45	U	0.46	U	0.4	U	0.46	U	0.44	U
Semivolatile Organic Compounds																		
2-Methylnaphthalene	UG/KG	4.4	1%		0	1	84		36	U	37	U	32	U	37	U	35	U
Anthracene	UG/KG	5.4	1%	100000	0	1	84		41	U	42	U	37	U	43	U	40	U
Benzo(a)anthracene	UG/KG	16	8%	1000	0	7	84		43	U	45	U	39	U	45	U	42	U
Benzo(a)pyrene	UG/KG	39	11%	1000	0	9	85		37	U	38	U	33	U	38	U	36	U
Benzo(b)fluoranthene	UG/KG	16	11%	1000	0	9	84		52	U	54	U	47	U	54	U	51	U
Benzo(ghi)perylene	UG/KG	39	12%	100000	0	10	85		99	U	110	U	89	U	110	U	96	U
Benzo(k)fluoranthene	UG/KG	16	8%	800	0	7	84		53	U	55	U	48	U	55	U	52	U
Benzyl alcohol	UG/KG	190	58%		0	37	64		37	J	45	J	46	J	380	U	38	J
Bis(2-Ethylhexyl)phthalate	UG/KG	96	15%		0	13	85		61	U	63	U	55	U	63	U	74	J
Butylbenzylphthalate	UG/KG	30	4%		0	3	84		45	U	46	U	40	U	46	U	44	U
Carbazole	UG/KG	7.4	2%		0	2	84		60	U	62	U	54	U	62	U	59	U
Chrysene	UG/KG	19	13%	1000	0	11	84		45	U	46	U	40	U	46	U	44	U
Di-n-butylphthalate	UG/KG	52	5%		0	4	84		150	U	160	U	140	U	160	U	150	U
Di-n-octylphthalate	UG/KG	20	8%		0	7	84		37	U	38	U	33	U	38	U	36	U
Dibenz(a,h)anthracene	UG/KG	5.6	1%	330	0	1	84		42	U	44	U	38	U	44	U	41	U
Dibenzofuran	UG/KG	4.1	1%	7000	0	1	84		40	U	41	U	36	U	42	U	39	U
Dimethylphthalate	UG/KG	86	7%		0	6	84		43	U	45	U	39	U	45	U	42	U
Fluoranthene	UG/KG	88	14%	100000	0	12	85		43	U	45	U	58	J	45	U	42	U
Indeno(1,2,3-cd)pyrene	UG/KG	12	7%	500	0	6	84		40	U	41	U	36	U	42	U	39	U
Phenanthrene	UG/KG	52	15%	100000	0	13	84		45	U	46	U	44	J	46	U	44	U
Pyrene	UG/KG	64	15%	100000	0	13	85		39	U	40	U	54	J	40	U	38	U
Pesticides/PCBs																		
Aroclor-1254	UG/KG	78	2%	100	0	2	85		19	U	20	U	19	U	20	U	19	U
4,4'-DDD	UG/KG	8.6	2%	3.3	2	2	85		1.9	U	1.9	U	1.9	U	2	U	1.8	U
4,4'-DDE	UG/KG	5.9	4%	3.3	2	3	85		1.9	U	1.9	U	**5.6**		2	U	1.8	U
4,4'-DDT	UG/KG	9.8	5%	3.3	3	4	85		1.9	U	1.9	U	**9.8**		2	U	1.8	U
Alpha-BHC	UG/KG	210	5%	20	2	4	85		0.93	U	0.96	U	0.91	U	0.96	U	0.91	U
Beta-BHC	UG/KG	63	1%	36	1	1	85		0.93	U	0.96	U	0.91	U	0.96	U	0.91	U

Attachment B Table 1
Soil Samples Considered in Updated Risk Assessment
SEAD-12 Disposal Pit C (C1 C2)

Seneca Army Depot Activity
Romulus, NY

								Area	SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
								Location_Id	S12EXSW-C-1-01		S12EXSW-C-2-01		S12EXSW-D-1-01		S12EXSW-D-2-01		S12EXSW-D-2-01	
								Matrix	SOIL		SOIL		SOIL		SOIL		SOIL	
								Sample_Id	S12EXSW-C-1-01		S12EXSW-C-2-01		S12EXSW-D-1-01		S12EXSW-D-2-02		S12EXSW-D-2-01	
								Samp_Depth_Top	0		0		0		0		0	
								Samp_Depth_Bot	0		0		0		0		0	
								Sample_Date	8/5/2009		8/5/2009		8/5/2009		8/5/2009		8/5/2009	
									SA		SA		SA		DU		SA	
		Maximum	Frequency			Number	Number		RA		RA		RA		RA		RA	
		Concentration	of	Action		of	of Times	Number of	Pit C1		Pit C1		Pit C1		Pit C1		Pit C1	
Parameter	**Units**	**Detected**	**Detection**	**Level (1)**		**Exceedances**	**Detected**	**Samples**	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)
Delta-BHC	UG/KG	61	4%	40		1	3	85	0.93	U	0.96	U	0.91	U	0.96	U	0.91	U
Metals																		
Aluminum	MG/KG	35100	100%			0	85	85	10300		10200		12600		10200		9210	
Antimony	MG/KG	0.28	1%			0	1	68	0.5	UJ	0.5	UJ	0.5	UJ	0.5	UJ	0.5	UJ
Arsenic	MG/KG	12.2	100%	13		0	85	85	5.1		4.9		4		3.8		3	
Barium	MG/KG	304	100%	350		0	85	85	116		92.4		90.7		115		89.4	
Beryllium	MG/KG	1.7	96%	7.2		0	82	85	0.59		0.55		0.68		0.55	J	0.49	J
Cadmium	MG/KG	1.25	29%	2.5		0	25	85	0.55	U	0.55	U	0.53	U	0.56	U	0.52	U
Calcium	MG/KG	186000	100%			0	85	85	99300		79000		46700		87000		69800	
Chromium	MG/KG	51.2	100%	30		1	85	85	17.4		17.4		19.6		17.3		14.5	
Cobalt	MG/KG	29	100%			0	85	85	9.7		9		9.9		8.8		7.9	
Copper	MG/KG	74.5	100%	50		2	85	85	26.5		28.5		23.5		23.8		19.8	
Cyanide	MG/KG	2.2	1%	27		0	1	85	0.42	U	0.42	U	0.5	U	0.42	U	0.42	U
Iron	MG/KG	56400	100%			0	85	85	20400		21000		20600		20400		17200	
Lead	MG/KG	431	100%	63		2	85	85	10		11.6		16.3		8.9	J	7.9	
Magnesium	MG/KG	74400	100%			0	85	85	13400		15500		10700		14600	J	14200	
Manganese	MG/KG	1650	100%	1600		2	85	85	437		398		407		418		387	
Mercury	MG/KG	0.15	76%	0.18		0	65	85	0.019	J	0.018	J	0.036	J	0.025	J	0.021	J
Nickel	MG/KG	75	95%	30		24	81	85	35.1	J	29.9	J	29.2	J	28.2		24.6	J
Potassium	MG/KG	5330	100%			0	85	85	1790	J	1700	J	1570	J	1950	J	1640	J
Selenium	MG/KG	2	21%	3.9		0	18	85	0.2	U	1.1	U	1.1	U	0.2	U	1	U
Silver	MG/KG	0.27	2%	2		0	2	85	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U
Sodium	MG/KG	1420	91%			0	77	85	170		140		100	J	160		130	
Thallium	MG/KG	1.7	11%			0	9	85	0.2	U	0.2	U	0.2	U	0.3	U	0.2	U
Vanadium	MG/KG	68	100%			0	85	85	18.5		19.2		22.2		19		16.7	
Zinc	MG/KG	6080	100%	109		3	85	85	44	J	53	J	79.9	J	68.1	J	53	J

Notes:
(1) Action Level presented is New York State's Unrestricted Use Soil Cleanup Objective (SCO) 6NYCRR375-6.8(a)
(Q) = Qualifier: <null space> detected; J estimated; U not detected; UJ not detected at estimated level; R rejected.
(Q) = Qualifier: UR detection limit rejected.
UG/KG = micrograms per kilogram; MG/KG = milligrams per kilogram.

Attachment B Table 1
Soil Samples Considered in Updated Risk Assessment
SEAD-12 Disposal Pit C (C1 C2)

Seneca Army Depot Activity
Romulus, NY

Area								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
Location_Id								S12EXSW-E-1-01		S12EXFL-I-3-01		S12EXFL-I-3-01		S12EXFL-I-3-02		S12EXFL-I-4-01	
Matrix								SOIL		SOIL		SOIL		SOIL		SOIL	
Sample_Id								S12EXSW-E-1-01		S12EXFL-I-3-02		S12EXFL-I-3-01		S12EXFL-I-3-03		S12EXFL-I-4-02	
Samp_Depth_Top								0		0		0		0		0	
Samp_Depth_Bot								0		0.2		0.2		0.2		0.2	
Sample_Date								8/5/2009		7/29/2009		7/29/2009		10/5/2009		10/15/2009	
								SA		DU		SA		SA		DU	
		Maximum	Frequency		Number	Number	Number	RA		RA		RA		RA		RA	
		Concentration	of	Action	of	of Times	of	Pit C1		Pit C2		Pit C2		Pit C2		Pit C2	
Parameter	**Units**	**Detected**	**Detection**	**Level (1)**	**Exceedances**	**Detected**	**Samples**	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)
Volatile Organic Compounds																	
Acetone	UG/KG	18	24%	50	0	20	85	23	UJ	22	UJ	22	UJ	1.7	UJ	21	U
Carbon disulfide	UG/KG	0.85	1%		0	1	85	0.59	U	0.57	UJ	0.57	UJ	0.85	J	0.52	U
Cis-1,2-Dichloroethene	UG/KG	0.45	2%	250	0	1	64	0.36	U	0.25	UJ	0.25	UJ	0.45	J	0.52	U
Meta/Para Xylene	UG/KG	0.86	3%	260	0	2	64	1.1	U	0.71	UJ	0.7	UJ	1.1	U	1	U
Methyl ethyl ketone	UG/KG	1.6	4%	120	0	3	85	0.87	U	0.85	UJ	0.85	UJ	0.85	U	21	U
Methylene chloride	UG/KG	2.8	24%	50	0	20	85	0.57	J	0.43	UJ	0.43	UJ	0.43	U	0.52	UJ
Styrene	UG/KG	0.61	1%		0	1	85	0.52	U	0.32	UJ	0.32	UJ	0.51	U	0.52	U
Toluene	UG/KG	62	39%	700	0	33	85	0.37	U	0.36	UJ	0.44	J	0.36	U	0.52	U
Trichloroethene	UG/KG	1	6%	470	0	5	85	0.46	U	0.45	UJ	0.45	UJ	0.45	U	1	U
Semivolatile Organic Compounds																	
2-Methylnaphthalene	UG/KG	4.4	1%		0	1	84	37	U	36	UJ	36	UJ	36	U	15	U
Anthracene	UG/KG	5.4	1%	100000	0	1	84	43	U	42	UJ	41	UJ	42	U	15	U
Benzo(a)anthracene	UG/KG	16	8%	1000	0	7	84	45	U	44	UJ	44	UJ	44	U	15	U
Benzo(a)pyrene	UG/KG	39	11%	1000	0	9	85	38	U	37	UJ	37	UJ	37	U	15	U
Benzo(b)fluoranthene	UG/KG	16	11%	1000	0	9	84	54	U	53	UJ	53	UJ	53	U	15	U
Benzo(ghi)perylene	UG/KG	39	12%	100000	0	10	85	110	U	99	UJ	99	UJ	100	U	45	U
Benzo(k)fluoranthene	UG/KG	16	8%	800	0	7	84	55	U	54	UJ	54	UJ	54	U	15	U
Benzyl alcohol	UG/KG	190	58%		0	37	64	46	J	56	J	55	J	26	U	15	U
Bis(2-Ethylhexyl)phthalate	UG/KG	96	15%		0	13	85	83	J	62	UJ	76	J	62	U	42	J
Butylbenzylphthalate	UG/KG	30	4%		0	3	84	46	U	45	UJ	45	UJ	45	U	15	U
Carbazole	UG/KG	7.4	2%		0	2	84	62	U	60	UJ	60	UJ	61	U	15	U
Chrysene	UG/KG	19	13%	1000	0	11	84	46	U	45	UJ	45	UJ	45	U	15	U
Di-n-butylphthalate	UG/KG	52	5%		0	4	84	160	U	150	UJ	150	UJ	160	U	15	U
Di-n-octylphthalate	UG/KG	20	8%		0	7	84	38	U	37	UJ	37	UJ	37	U	15	U
Dibenz(a,h)anthracene	UG/KG	5.6	1%	330	0	1	84	44	U	43	UJ	43	UJ	43	U	45	U
Dibenzofuran	UG/KG	4.1	1%	7000	0	1	84	42	U	40	UJ	40	UJ	41	U	15	U
Dimethylphthalate	UG/KG	86	7%		0	6	84	45	U	44	UJ	44	UJ	44	U	60	J
Fluoranthene	UG/KG	88	14%	100000	0	12	85	74	J	44	UJ	44	UJ	44	U	15	U
Indeno(1,2,3-cd)pyrene	UG/KG	12	7%	500	0	6	84	42	U	40	UJ	40	UJ	41	U	45	U
Phenanthrene	UG/KG	52	15%	100000	0	13	84	52	J	45	UJ	45	UJ	45	U	15	U
Pyrene	UG/KG	64	15%	100000	0	13	85	64	J	39	UJ	39	UJ	40	U	15	U
Pesticides/PCBs																	
Aroclor-1254	UG/KG	78	2%	100	0	2	85	20	U	19	UJ	19	UJ	190	U	5.28	U
4,4'-DDD	UG/KG	8.6	2%	3.3	2	2	85	**6.9**		1.9	UJ	1.9	UJ	19	U	0.39	U
4,4'-DDE	UG/KG	5.9	4%	3.3	2	3	85	**5.9**		1.9	UJ	1.9	UJ	19	U	0.41	U
4,4'-DDT	UG/KG	9.8	5%	3.3	3	4	85	**3.8**	J	1.9	UJ	1.9	UJ	19	U	0.48	U
Alpha-BHC	UG/KG	210	5%	20	2	4	85	0.97	U	0.94	UJ	0.94	UJ	9.4	U	0.37	U
Beta-BHC	UG/KG	63	1%	36	1	1	85	0.97	U	0.94	UJ	0.94	UJ	9.4	U	0.94	U

Attachment B Table 1
Soil Samples Considered in Updated Risk Assessment
SEAD-12 Disposal Pit C (C1 C2)

Seneca Army Depot Activity
Romulus, NY

								Area	SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
								Location_Id	S12EXSW-E-1-01		S12EXFL-I-3-01		S12EXFL-I-3-01		S12EXFL-I-3-02		S12EXFL-I-4-01	
								Matrix	SOIL		SOIL		SOIL		SOIL		SOIL	
								Sample_Id	S12EXSW-E-1-01		S12EXFL-I-3-02		S12EXFL-I-3-01		S12EXFL-I-3-03		S12EXFL-I-4-02	
								Samp_Depth_Top	0		0		0		0		0	
								Samp_Depth_Bot	0		0.2		0.2		0.2		0.2	
								Sample_Date	8/5/2009		7/29/2009		7/29/2009		10/5/2009		10/15/2009	
									SA		DU		SA		SA		DU	
		Maximum	Frequency			Number	Number		RA		RA		RA		RA		RA	
		Concentration	of	Action	Number	of Times	of		Pit C1		Pit C2		Pit C2		Pit C2		Pit C2	
Parameter	**Units**	**Detected**	**Detection**	**Level (1)**	**of Exceedances**	**Detected**	**Samples**		Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)
Delta-BHC	UG/KG	61	4%	40	1	3	85		0.97	U	0.94	UJ	0.94	UJ	9.4	U	0.51	U
Metals																		
Aluminum	MG/KG	35100	100%		0	85	85		13800		9900	J	9770	J	9110		6000	J
Antimony	MG/KG	0.28	1%		0	1	68		0.5	UJ	0.4	UJ	0.4	UJ	0.446	U	0.33	UJ
Arsenic	MG/KG	12.2	100%	13	0	85	85		5.1		3.5	J	3.6	J	4.9		4.8	J
Barium	MG/KG	304	100%	350	0	85	85		90.5		87.5	J	86.6	J	89		49	J
Beryllium	MG/KG	1.7	96%	7.2	0	82	85		0.73		0.52	J	0.53	J	0.553	J	0.36	J
Cadmium	MG/KG	1.25	29%	2.5	0	25	85		0.57	U	0.16	J	0.15	J	0.557	UJ	0.11	UJ
Calcium	MG/KG	186000	100%		0	85	85		18900		80400	J	80000	J	104000		110000	J
Chromium	MG/KG	51.2	100%	30	1	85	85		22.6		14.9	J	15.8	J	15.6		13	J
Cobalt	MG/KG	29	100%		0	85	85		11.9		8.3	J	9.1	J	9.2		6.7	J
Copper	MG/KG	74.5	100%	50	2	85	85		22.2		19.9	J	22.1	J	30.5		19	J
Cyanide	MG/KG	2.2	1%	27	0	1	85		0.5	U	0.42	UJ	0.5	UJ	0.5	U	0.2	UJ
Iron	MG/KG	56400	100%		0	85	85		23100		19400	J	21200	J	18500		15000	J
Lead	MG/KG	431	100%	63	2	85	85		25.3		8.8	J	9.3	J	9.3		13	J
Magnesium	MG/KG	74400	100%		0	85	85		7400		22100	J	16300	J	15100		41000	J
Manganese	MG/KG	1650	100%	1600	2	85	85		388		459	J	456	J	410		380	J
Mercury	MG/KG	0.15	76%	0.18	0	65	85		0.045	J	0.02	J	0.01	J	0.032	UJ	0.0099	J
Nickel	MG/KG	75	95%	30	24	81	85		**30.6**	J	23.5	J	25.9	J	25.2		22	J
Potassium	MG/KG	5330	100%		0	85	85		1640	J	1830	J	1720	J	1840		1100	J
Selenium	MG/KG	2	21%	3.9	0	18	85		1.2		0.173	UJ	0.173	UJ	0.193	U	0.28	UJ
Silver	MG/KG	0.27	2%	2	0	2	85		0.3	U	0.0257	UJ	0.0257	UJ	0.029	U	0.22	UJ
Sodium	MG/KG	1420	91%		0	77	85		60	J	143	J	145	J	153		140	J
Thallium	MG/KG	1.7	11%		0	9	85		0.5	U	0.176	UJ	0.176	UJ	0.196	U	0.56	UJ
Vanadium	MG/KG	68	100%		0	85	85		24.7		17.6	J	17.3	J	18		13	J
Zinc	MG/KG	6080	100%	109	3	85	85		86.2	J	48	J	51.8	J	46.4		55	J

Notes:
(1) Action Level presented is New York State's Unrestricted Use Soil Cleanup Objective (SCO) 6NYCRR375-6.8(a)
(Q) = Qualifier: <null space> detected; J estimated; U not detected; UJ not detected at estimated level; R rejected.
(Q) = Qualifier: UR detection limit rejected.
UG/KG = micrograms per kilogram; MG/KG = milligrams per kilogram.

Attachment B Table 1
Soil Samples Considered in Updated Risk Assessment
SEAD-12 Disposal Pit C (C1 C2)

Seneca Army Depot Activity
Romulus, NY

								Area	SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
								Location_Id	S12EXFL-I-4-01		S12EXFL-J-2-02		S12EXFL-J-4-01		S12EXFL-K-3-01		S12EXPR-I-2-01	
								Matrix	SOIL		SOIL		SOIL		SOIL		SOIL	
								Sample_Id	S12EXFL-I-4-01		S12EXFL-J-2-02		S12EXFL-J-4-01		S12EXFL-K-3-01		S12EXPR-I-2-01	
								Samp_Depth_Top	0		0		0		0		0	
								Samp_Depth_Bot	0.2		0.2		0.2		0.2		0.2	
								Sample_Date	10/15/2009		10/7/2009		7/29/2009		7/29/2009		7/29/2009	
									SA		SA		SA		SA		SA	
		Maximum	Frequency			Number	Number	Number	RA		RA		RA		RA		RA	
		Concentration	of	Action	Number	of Times	of		Pit C2		Pit C2		Pit C2		Pit C2		Pit C2	
Parameter	**Units**	**Detected**	**Detection**	**Level (1)**	**of Exceedances**	**Detected**	**Samples**		Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)
Volatile Organic Compounds																		
Acetone	UG/KG	18	24%	50	0	20	85		23	U	1.9	UJ	22	UJ	23	UJ	21	UJ
Carbon disulfide	UG/KG	0.85	1%		0	1	85		0.57	U	0.62	U	0.56	UJ	0.6	UJ	0.54	UJ
Cis-1,2-Dichloroethene	UG/KG	0.45	2%	250	0	1	64		0.57	U	0.38	U	0.35	UJ	0.26	UJ	0.23	UJ
Meta/Para Xylene	UG/KG	0.86	3%	260	0	2	64		1.1	U	1.2	U	1.1	UJ	0.74	UJ	0.66	UJ
Methyl ethyl ketone	UG/KG	1.6	4%	120	0	3	85		23	U	0.93	U	0.84	UJ	0.9	UJ	0.8	UJ
Methylene chloride	UG/KG	2.8	24%	50	0	20	85		0.64	J	0.47	U	0.42	UJ	0.45	UJ	0.4	UJ
Styrene	UG/KG	0.61	1%		0	1	85		0.57	U	0.55	U	0.5	UJ	0.33	UJ	0.3	UJ
Toluene	UG/KG	62	39%	700	0	33	85		0.57	U	0.39	U	0.4	J	0.38	UJ	0.8	J
Trichloroethene	UG/KG	1	6%	470	0	5	85		1.1	U	0.49	U	0.44	UJ	0.47	UJ	0.42	UJ
Semivolatile Organic Compounds																		
2-Methylnaphthalene	UG/KG	4.4	1%		0	1	84		15	U	39	U	36	UJ	38	UJ	34	UJ
Anthracene	UG/KG	5.4	1%	100000	0	1	84		15	U	45	U	41	UJ	44	UJ	39	UJ
Benzo(a)anthracene	UG/KG	16	8%	1000	0	7	84		15	U	48	U	43	UJ	46	UJ	41	UJ
Benzo(a)pyrene	UG/KG	39	11%	1000	0	9	85		15	U	41	U	37	UJ	39	UJ	35	UJ
Benzo(b)fluoranthene	UG/KG	16	11%	1000	0	9	84		15	U	58	U	52	UJ	56	UJ	49	UJ
Benzo(ghi)perylene	UG/KG	39	12%	100000	0	10	85		45	U	110	U	98	UJ	110	UJ	93	UJ
Benzo(k)fluoranthene	UG/KG	16	8%	800	0	7	84		15	U	59	U	53	UJ	57	UJ	50	UJ
Benzyl alcohol	UG/KG	190	58%		0	37	64		15	U	100	J	26	UJ	27	UJ	24	UJ
Bis(2-Ethylhexyl)phthalate	UG/KG	96	15%		0	13	85		15	UJ	67	U	61	UJ	65	UJ	58	UJ
Butylbenzylphthalate	UG/KG	30	4%		0	3	84		15	U	49	U	44	UJ	47	UJ	42	UJ
Carbazole	UG/KG	7.4	2%		0	2	84		15	U	66	U	60	UJ	64	UJ	57	UJ
Chrysene	UG/KG	19	13%	1000	0	11	84		15	U	49	U	44	UJ	47	UJ	42	UJ
Di-n-butylphthalate	UG/KG	52	5%		0	4	84		15	U	170	U	150	UJ	160	UJ	150	UJ
Di-n-octylphthalate	UG/KG	20	8%		0	7	84		15	U	41	U	37	UJ	39	UJ	35	UJ
Dibenz(a,h)anthracene	UG/KG	5.6	1%	330	0	1	84		45	U	47	U	42	UJ	45	UJ	40	UJ
Dibenzofuran	UG/KG	4.1	1%	7000	0	1	84		15	U	44	U	40	UJ	43	UJ	38	UJ
Dimethylphthalate	UG/KG	86	7%		0	6	84		78	J	48	U	43	UJ	46	UJ	41	UJ
Fluoranthene	UG/KG	88	14%	100000	0	12	85		15	U	48	U	43	UJ	46	UJ	41	UJ
Indeno(1,2,3-cd)pyrene	UG/KG	12	7%	500	0	6	84		45	U	44	U	40	UJ	43	UJ	38	UJ
Phenanthrene	UG/KG	52	15%	100000	0	13	84		15	U	49	U	44	UJ	47	UJ	42	UJ
Pyrene	UG/KG	64	15%	100000	0	13	85		15	U	43	U	39	UJ	42	UJ	37	UJ
Pesticides/PCBs																		
Aroclor-1254	UG/KG	78	2%	100	0	2	85		5.36	U	21	U	19	UJ	20	UJ	18	UJ
4,4'-DDD	UG/KG	8.6	2%	3.3	2	2	85		0.4	U	2.1	U	1.9	UJ	2	UJ	1.8	UJ
4,4'-DDE	UG/KG	5.9	4%	3.3	2	3	85		0.42	U	2.1	U	1.9	UJ	2	UJ	1.8	UJ
4,4'-DDT	UG/KG	9.8	5%	3.3	3	4	85		0.49	U	2.1	U	1.9	UJ	2	UJ	1.8	UJ
Alpha-BHC	UG/KG	210	5%	20	2	4	85		0.37	U	1.1	U	0.93	UJ	0.99	UJ	0.88	UJ
Beta-BHC	UG/KG	63	1%	36	1	1	85		0.95	U	1.1	U	0.93	UJ	0.99	UJ	0.88	UJ

Attachment B Table 1
Soil Samples Considered in Updated Risk Assessment
SEAD-12 Disposal Pit C (C1 C2)

Seneca Army Depot Activity
Romulus, NY

								Area	SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
								Location_Id	S12EXFL-I-4-01		S12EXFL-J-2-02		S12EXFL-J-4-01		S12EXFL-K-3-01		S12EXPR-I-2-01	
								Matrix	SOIL		SOIL		SOIL		SOIL		SOIL	
								Sample_Id	S12EXFL-I-4-01		S12EXFL-J-2-02		S12EXFL-J-4-01		S12EXFL-K-3-01		S12EXPR-I-2-01	
								Samp_Depth_Top	0		0		0		0		0	
								Samp_Depth_Bot	0.2		0.2		0.2		0.2		0.2	
								Sample_Date	10/15/2009		10/7/2009		7/29/2009		7/29/2009		7/29/2009	
									SA		SA		SA		SA		SA	
		Maximum	Frequency			Number	Number		RA		RA		RA		RA		RA	
		Concentration	of	Action	Number	of Times	of		Pit C2		Pit C2		Pit C2		Pit C2		Pit C2	
Parameter	**Units**	**Detected**	**Detection**	**Level (1)**	**of Exceedances**	**Detected**	**Samples**		Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)
Delta-BHC	UG/KG	61	4%	40	1	3	85		0.52	U	1.1	U	0.93	UJ	0.99	UJ	0.88	UJ
Metals																		
Aluminum	MG/KG	35100	100%		0	85	85		8700	J	12700	J	8590	J	11000	J	9610	J
Antimony	MG/KG	0.28	1%		0	1	68		0.34	UJ	0.485	UJ	0.4	UJ	0.4	UJ	0.4	UJ
Arsenic	MG/KG	12.2	100%	13	0	85	85		3.9	J	5.9	J	2.5	J	4	J	3.3	J
Barium	MG/KG	304	100%	350	0	85	85		69	J	105	J	82	J	73.3	J	62.1	J
Beryllium	MG/KG	1.7	96%	7.2	0	82	85		0.45	J	0.711	J	0.54	UJ	0.63	J	0.52	J
Cadmium	MG/KG	1.25	29%	2.5	0	25	85		0.11	UJ	0.868	J	0.28	J	0.15	J	0.52	UJ
Calcium	MG/KG	186000	100%		0	85	85		110000	J	64200	J	89600	J	113000	J	113000	J
Chromium	MG/KG	51.2	100%	30	1	85	85		14	J	20.6	J	13.7	J	17.3	J	15.2	J
Cobalt	MG/KG	29	100%		0	85	85		7.7	J	9.5	J	7.7	J	10.7	J	8	J
Copper	MG/KG	74.5	100%	50	2	85	85		22	J	29.1	J	17.3	J	20.4	J	18.5	J
Cyanide	MG/KG	2.2	1%	27	0	1	85		0.2	UJ	0.42	U	0.5	UJ	0.5	UJ	0.42	UJ
Iron	MG/KG	56400	100%		0	85	85		19000	J	23000	J	17500	J	21900	J	19500	J
Lead	MG/KG	431	100%	63	2	85	85		8.9	J	13.7	J	7	J	9.8	J	8.6	J
Magnesium	MG/KG	74400	100%		0	85	85		16000	J	12700	J	16500	J	11200	J	27800	J
Manganese	MG/KG	1650	100%	1600	2	85	85		440	J	471	J	404	J	498	J	417	J
Mercury	MG/KG	0.15	76%	0.18	0	65	85		0.012	J	0.031	J	0.01	J	0.02	J	0.02	J
Nickel	MG/KG	75	95%	30	24	81	85		26	J	**31.7**	J	21.6	J	**31.5**	J	24.4	J
Potassium	MG/KG	5330	100%		0	85	85		1400	J	1840	J	1670	J	1720	J	1430	J
Selenium	MG/KG	2	21%	3.9	0	18	85		0.28	UJ	0.21	UJ	0.173	UJ	0.173	UJ	0.173	UJ
Silver	MG/KG	0.27	2%	2	0	2	85		0.23	UJ	0.031	UJ	1.09	UJ	1.13	UJ	0.0257	UJ
Sodium	MG/KG	1420	91%		0	77	85		130	J	124	J	159	J	158	J	156	J
Thallium	MG/KG	1.7	11%		0	9	85		0.57	UJ	0.214	UJ	0.176	UJ	0.176	UJ	0.176	UJ
Vanadium	MG/KG	68	100%		0	85	85		16	J	22.2	J	15.9	J	17.6	J	15.9	J
Zinc	MG/KG	6080	100%	109	3	85	85		57	J	61	J	38.7	J	44.3	J	40.7	J

Notes:
(1) Action Level presented is New York State's Unrestricted Use Soil Cleanup Objective (SCO) 6NYCRR375-6.8(a)
(Q) = Qualifier: <null space> detected; J estimated; U not detected; UJ not detected at estimated level; R rejected.
(Q) = Qualifier: UR detection limit rejected.
UG/KG = micrograms per kilogram; MG/KG = milligrams per kilogram.

Attachment B Table 1
Soil Samples Considered in Updated Risk Assessment
SEAD-12 Disposal Pit C (C1 C2)

Seneca Army Depot Activity
Romulus, NY

								Area	SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
								Location_Id	S12EXPR-I-2-02		S12EXPR-I-3-01		S12EXPR-I-3-04		S12EXPR-I-4-01		S12EXPR-J-2-01	
								Matrix	SOIL		SOIL		SOIL		SOIL		SOIL	
								Sample_Id	S12EXPR-I-2-02		S12EXPR-I-3-01		S12EXPR-I-3-04		S12EXPR-I-4-01		S12EXPR-J-2-01	
								Samp_Depth_Top	0		0		0		0		0	
								Samp_Depth_Bot	0.2		0.2		0.2		0.2		0.2	
								Sample_Date	10/7/2009		7/29/2009		10/15/2009		10/15/2009		7/29/2009	
									SA		SA		SA		SA		SA	
									RA		RA		RA		RA		RA	
Parameter	**Units**	**Maximum Concentration Detected**	**Frequency of Detection**	**Action Level (1)**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples**		Pit C2		Pit C2		Pit C2		Pit C2		Pit C2	
									Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)
Volatile Organic Compounds																		
Acetone	UG/KG	18	24%	50	0	20	85		1.9	UJ	20	UJ	21	U	21	U	2.6	J
Carbon disulfide	UG/KG	0.85	1%		0	1	85		0.62	U	0.53	UJ	0.52	U	0.53	U	0.55	UJ
Cis-1,2-Dichloroethene	UG/KG	0.45	2%	250	0	1	64		0.38	U	0.23	UJ	0.52	U	0.53	U	0.24	UJ
Meta/Para Xylene	UG/KG	0.86	3%	260	0	2	64		1.2	U	0.65	UJ	1	U	1.1	U	0.68	UJ
Methyl ethyl ketone	UG/KG	1.6	4%	120	0	3	85		0.92	U	0.78	UJ	21	U	21	U	0.82	UJ
Methylene chloride	UG/KG	2.8	24%	50	0	20	85		0.46	U	0.39	UJ	0.52	U	0.53	U	0.41	UJ
Styrene	UG/KG	0.61	1%		0	1	85		0.55	U	0.29	UJ	0.52	U	0.53	U	0.31	UJ
Toluene	UG/KG	62	39%	700	0	33	85		0.39	U	0.33	UJ	0.52	U	0.53	U	0.68	J
Trichloroethene	UG/KG	1	6%	470	0	5	85		0.49	U	0.41	UJ	1	U	1.1	U	0.58	J
Semivolatile Organic Compounds																		
2-Methylnaphthalene	UG/KG	4.4	1%		0	1	84		39	U	33	UJ	15	U	15	U	35	UJ
Anthracene	UG/KG	5.4	1%	100000	0	1	84		45	U	38	UJ	15	U	15	U	40	UJ
Benzo(a)anthracene	UG/KG	16	8%	1000	0	7	84		48	U	40	UJ	15	U	15	U	42	UJ
Benzo(a)pyrene	UG/KG	39	11%	1000	0	9	85		40	U	34	UJ	15	U	15	U	36	UJ
Benzo(b)fluoranthene	UG/KG	16	11%	1000	0	9	84		57	U	49	UJ	15	U	15	U	51	UJ
Benzo(ghi)perylene	UG/KG	39	12%	100000	0	10	85		110	U	92	UJ	44	U	45	U	96	UJ
Benzo(k)fluoranthene	UG/KG	16	8%	800	0	7	84		58	U	50	UJ	15	U	15	U	52	UJ
Benzyl alcohol	UG/KG	190	58%		0	37	64		85	J	47	J	15	U	15	U	68	J
Bis(2-Ethylhexyl)phthalate	UG/KG	96	15%		0	13	85		67	U	57	UJ	15	U	15	U	60	UJ
Butylbenzylphthalate	UG/KG	30	4%		0	3	84		49	U	41	UJ	15	U	15	U	44	UJ
Carbazole	UG/KG	7.4	2%		0	2	84		66	U	56	UJ	15	U	15	U	59	UJ
Chrysene	UG/KG	19	13%	1000	0	11	84		49	U	41	UJ	15	U	15	U	44	UJ
Di-n-butylphthalate	UG/KG	52	5%		0	4	84		170	U	140	UJ	15	U	15	U	150	UJ
Di-n-octylphthalate	UG/KG	20	8%		0	7	84		40	U	34	UJ	15	U	15	U	36	UJ
Dibenz(a,h)anthracene	UG/KG	5.6	1%	330	0	1	84		46	U	39	UJ	44	U	45	U	41	UJ
Dibenzofuran	UG/KG	4.1	1%	7000	0	1	84		44	U	37	UJ	15	U	15	U	39	UJ
Dimethylphthalate	UG/KG	86	7%		0	6	84		48	U	40	UJ	15	U	44	J	42	UJ
Fluoranthene	UG/KG	88	14%	100000	0	12	85		48	U	40	UJ	15	U	15	U	42	UJ
Indeno(1,2,3-cd)pyrene	UG/KG	12	7%	500	0	6	84		44	U	37	UJ	44	U	45	U	39	UJ
Phenanthrene	UG/KG	52	15%	100000	0	13	84		49	U	41	UJ	15	U	15	U	44	UJ
Pyrene	UG/KG	64	15%	100000	0	13	85		43	U	36	UJ	15	U	15	U	38	UJ
Pesticides/PCBs																		
Aroclor-1254	UG/KG	78	2%	100	0	2	85		21	U	18	UJ	5.27	U	5.32	U	19	UJ
4,4'-DDD	UG/KG	8.6	2%	3.3	2	2	85		2.1	U	1.8	UJ	0.39	U	0.39	U	1.8	UJ
4,4'-DDE	UG/KG	5.9	4%	3.3	2	3	85		2.1	U	1.8	UJ	0.41	U	0.9	J	1.8	UJ
4,4'-DDT	UG/KG	9.8	5%	3.3	3	4	85		2.1	U	1.8	UJ	0.48	U	1.7	J	1.8	UJ
Alpha-BHC	UG/KG	210	5%	20	2	4	85		1.1	U	2.6	J	0.37	U	0.37	U	0.91	UJ
Beta-BHC	UG/KG	63	1%	36	1	1	85		1.1	U	0.86	UJ	0.93	U	0.94	U	0.91	UJ

Attachment B Table 1
Soil Samples Considered in Updated Risk Assessment
SEAD-12 Disposal Pit C (C1 C2)

Seneca Army Depot Activity
Romulus, NY

								Area	SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
								Location_Id	S12EXPR-I-2-02		S12EXPR-I-3-01		S12EXPR-I-3-04		S12EXPR-I-4-01		S12EXPR-J-2-01	
								Matrix	SOIL		SOIL		SOIL		SOIL		SOIL	
								Sample_Id	S12EXPR-I-2-02		S12EXPR-I-3-01		S12EXPR-I-3-04		S12EXPR-I-4-01		S12EXPR-J-2-01	
								Samp_Depth_Top	0		0		0		0		0	
								Samp_Depth_Bot	0.2		0.2		0.2		0.2		0.2	
								Sample_Date	10/7/2009		7/29/2009		10/15/2009		10/15/2009		7/29/2009	
									SA		SA		SA		SA		SA	
		Maximum	Frequency			Number	Number	Number	RA		RA		RA		RA		RA	
		Concentration	of	Action	Number	of Times	of		Pit C2		Pit C2		Pit C2		Pit C2		Pit C2	
Parameter	**Units**	**Detected**	**Detection**	**Level (1)**	**of Exceedances**	**Detected**	**Samples**		Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)
Delta-BHC	UG/KG	61	4%	40	1	3	85		1.1	U	0.86	UJ	0.51	U	0.52	U	0.91	UJ
Metals																		
Aluminum	MG/KG	35100	100%		0	85	85		16200	J	10400	J	8800	J	9800	J	9010	J
Antimony	MG/KG	0.28	1%		0	1	68		0.478	UJ	0.4	UJ	0.33	UJ	0.34	UJ	0.4	UJ
Arsenic	MG/KG	12.2	100%	13	0	85	85		5.7	J	4.4	J	4.1	J	3.8	J	4.2	J
Barium	MG/KG	304	100%	350	0	85	85		134	J	84.6	J	71	J	71	J	60.2	J
Beryllium	MG/KG	1.7	96%	7.2	0	82	85		0.867	J	0.59	J	0.46	J	0.49	J	0.55	J
Cadmium	MG/KG	1.25	29%	2.5	0	25	85		0.597	U	0.21	J	0.13	J	0.11	UJ	0.16	J
Calcium	MG/KG	186000	100%		0	85	85		9850	J	90100	J	63000	J	75000	J	151000	J
Chromium	MG/KG	51.2	100%	30	1	85	85		23.7	J	16.6	J	17	J	16	J	13.7	J
Cobalt	MG/KG	29	100%		0	85	85		16.2	J	11.3	J	8.9	J	8.1	J	7.7	J
Copper	MG/KG	74.5	100%	50	2	85	85		23.4	J	23	J	21	J	23	J	19.2	J
Cyanide	MG/KG	2.2	1%	27	0	1	85		0.5	U	0.42	UJ	0.2	UJ	0.2	UJ	0.42	UJ
Iron	MG/KG	56400	100%		0	85	85		24400	J	22600	J	20000	J	20000	J	18000	J
Lead	MG/KG	431	100%	63	2	85	85		18.1	J	10.9	J	9.4	J	8.4	J	10.1	J
Magnesium	MG/KG	74400	100%		0	85	85		5690	J	15600	J	12000	J	11000	J	11800	J
Manganese	MG/KG	1650	100%	1600	2	85	85		**1630**	J	521	J	410	J	380	J	511	J
Mercury	MG/KG	0.15	76%	0.18	0	65	85		0.031	J	0.02	J	0.014	J	0.011	J	0.03	J
Nickel	MG/KG	75	95%	30	24	81	85		**37.7**	J	**30.3**	J	26	J	28	J	24.1	J
Potassium	MG/KG	5330	100%		0	85	85		1740	J	1790	J	1100	J	1300	J	1320	J
Selenium	MG/KG	2	21%	3.9	0	18	85		0.833	J	0.45	J	0.28	UJ	0.28	UJ	0.25	J
Silver	MG/KG	0.27	2%	2	0	2	85		0.031	UJ	0.0257	UJ	0.22	UJ	0.22	UJ	0.0257	UJ
Sodium	MG/KG	1420	91%		0	77	85		47.4	J	163	J	94	J	110	J	151	J
Thallium	MG/KG	1.7	11%		0	9	85		1	UJ	0.176	UJ	0.56	UJ	0.56	UJ	0.176	UJ
Vanadium	MG/KG	68	100%		0	85	85		27.1	J	18.2	J	20	J	17	J	16.2	J
Zinc	MG/KG	6080	100%	109	3	85	85		60.9	J	54.1	J	59	J	52	J	36.4	J

Notes:
(1) Action Level presented is New York State's Unrestricted Use Soil Cleanup Objective (SCO) 6NYCRR375-6.8(a)
(Q) = Qualifier: <null space> detected; J estimated; U not detected; UJ not detected at estimated level; R rejected.
(Q) = Qualifier: UR detection limit rejected.
UG/KG = micrograms per kilogram; MG/KG = milligrams per kilogram.

Attachment B Table 1
Soil Samples Considered in Updated Risk Assessment
SEAD-12 Disposal Pit C (C1 C2)

Seneca Army Depot Activity
Romulus, NY

								Area	SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
								Location_Id	S12EXPR-J-3-01		S12EXPR-J-3-02		S12EXPR-J-4-01		S12EXPR-J-4-02		S12EXPR-J-4-03	
								Matrix	SOIL		SOIL		SOIL		SOIL		SOIL	
								Sample_Id	S12EXPR-J-3-01		S12EXPR-J-3-02		S12EXPR-J-4-01		S12EXPR-J-4-02		S12EXPR-J-4-03	
								Samp_Depth_Top	0		0		0		0		0	
								Samp_Depth_Bot	0.2		0.2		0.2		0.2		0.2	
								Sample_Date	7/29/2009		8/5/2009		7/29/2009		7/29/2009		7/29/2009	
									SA		SA		SA		SA		SA	
		Maximum	Frequency			Number	Number		RA		RA		RA		RA		RA	
		Concentration	of	Action	Number	of Times	of		Pit C2		Pit C2		Pit C2		Pit C2		Pit C2	
Parameter	**Units**	**Detected**	**Detection**	**Level (1)**	**of Exceedances**	**Detected**	**Samples**		Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)
Volatile Organic Compounds																		
Acetone	UG/KG	18	24%	50	0	20	85		2.6	J	1.7	UJ	2.4	J	2.2	J	3.1	J
Carbon disulfide	UG/KG	0.85	1%		0	1	85		0.55	UJ	0.57	U	0.57	UJ	0.55	UJ	0.57	UJ
Cis-1,2-Dichloroethene	UG/KG	0.45	2%	250	0	1	64		0.24	UJ	0.35	U	0.25	UJ	0.24	UJ	0.25	UJ
Meta/Para Xylene	UG/KG	0.86	3%	260	0	2	64		0.67	UJ	1.1	U	0.71	UJ	0.75	J	0.71	UJ
Methyl ethyl ketone	UG/KG	1.6	4%	120	0	3	85		0.81	UJ	0.84	U	0.85	UJ	0.82	UJ	0.85	UJ
Methylene chloride	UG/KG	2.8	24%	50	0	20	85		0.47	J	0.52	J	0.43	UJ	0.47	J	0.43	UJ
Styrene	UG/KG	0.61	1%		0	1	85		0.3	UJ	0.5	U	0.32	UJ	0.31	UJ	0.32	UJ
Toluene	UG/KG	62	39%	700	0	33	85		0.44	J	0.36	U	0.36	UJ	1.1	J	1.5	J
Trichloroethene	UG/KG	1	6%	470	0	5	85		0.43	UJ	0.45	U	0.45	UJ	0.65	J	1	J
Semivolatile Organic Compounds																		
2-Methylnaphthalene	UG/KG	4.4	1%		0	1	84		34	UJ	36	U	36	UJ	35	UJ	36	UJ
Anthracene	UG/KG	5.4	1%	100000	0	1	84		40	UJ	41	U	42	UJ	40	UJ	42	UJ
Benzo(a)anthracene	UG/KG	16	8%	1000	0	7	84		42	UJ	44	U	44	UJ	42	UJ	44	UJ
Benzo(a)pyrene	UG/KG	39	11%	1000	0	9	85		35	UJ	37	U	37	UJ	36	UJ	37	UJ
Benzo(b)fluoranthene	UG/KG	16	11%	1000	0	9	84		50	UJ	52	U	53	UJ	51	UJ	53	UJ
Benzo(ghi)perylene	UG/KG	39	12%	100000	0	10	85		95	UJ	99	U	100	UJ	96	UJ	100	UJ
Benzo(k)fluoranthene	UG/KG	16	8%	800	0	7	84		51	UJ	54	U	54	UJ	52	UJ	54	UJ
Benzyl alcohol	UG/KG	190	58%		0	37	64		38	J	140	J	63	J	65	J	26	UJ
Bis(2-Ethylhexyl)phthalate	UG/KG	96	15%		0	13	85		59	UJ	61	U	62	UJ	60	UJ	75	J
Butylbenzylphthalate	UG/KG	30	4%		0	3	84		43	UJ	45	U	45	UJ	44	UJ	45	UJ
Carbazole	UG/KG	7.4	2%		0	2	84		58	UJ	60	U	61	UJ	59	UJ	61	UJ
Chrysene	UG/KG	19	13%	1000	0	11	84		43	UJ	45	U	45	UJ	44	UJ	45	UJ
Di-n-butylphthalate	UG/KG	52	5%		0	4	84		150	UJ	150	U	160	UJ	150	UJ	160	UJ
Di-n-octylphthalate	UG/KG	20	8%		0	7	84		35	UJ	37	U	37	UJ	36	UJ	37	UJ
Dibenz(a,h)anthracene	UG/KG	5.6	1%	330	0	1	84		41	UJ	42	U	43	UJ	41	UJ	43	UJ
Dibenzofuran	UG/KG	4.1	1%	7000	0	1	84		39	UJ	40	U	41	UJ	39	UJ	41	UJ
Dimethylphthalate	UG/KG	86	7%		0	6	84		42	UJ	44	U	44	UJ	42	UJ	44	UJ
Fluoranthene	UG/KG	88	14%	100000	0	12	85		42	UJ	44	U	44	UJ	42	UJ	44	UJ
Indeno(1,2,3-cd)pyrene	UG/KG	12	7%	500	0	6	84		39	UJ	40	U	41	UJ	39	UJ	41	UJ
Phenanthrene	UG/KG	52	15%	100000	0	13	84		43	UJ	45	U	45	UJ	44	UJ	45	UJ
Pyrene	UG/KG	64	15%	100000	0	13	85		38	UJ	39	U	40	UJ	38	UJ	40	UJ
Pesticides/PCBs																		
Aroclor-1254	UG/KG	78	2%	100	0	2	85		19	UJ	19	U	53	J	19	UJ	19	UJ
4,4'-DDD	UG/KG	8.6	2%	3.3	2	2	85		1.8	UJ	1.9	U	1.9	UJ	1.8	UJ	1.9	UJ
4,4'-DDE	UG/KG	5.9	4%	3.3	2	3	85		1.8	UJ	1.9	U	1.9	UJ	1.8	UJ	1.9	UJ
4,4'-DDT	UG/KG	9.8	5%	3.3	3	4	85		1.8	UJ	1.9	U	1.9	UJ	1.8	UJ	1.9	UJ
Alpha-BHC	UG/KG	210	5%	20	2	4	85		0.89	UJ	0.93	U	0.94	UJ	0.91	UJ	0.94	UJ
Beta-BHC	UG/KG	63	1%	36	1	1	85		0.89	UJ	0.93	U	0.94	UJ	0.91	UJ	0.94	UJ

Attachment B Table 1
Soil Samples Considered in Updated Risk Assessment
SEAD-12 Disposal Pit C (C1 C2)

Seneca Army Depot Activity
Romulus, NY

								Area	SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
								Location_Id	S12EXPR-J-3-01		S12EXPR-J-3-02		S12EXPR-J-4-01		S12EXPR-J-4-02		S12EXPR-J-4-03	
								Matrix	SOIL		SOIL		SOIL		SOIL		SOIL	
								Sample_Id	S12EXPR-J-3-01		S12EXPR-J-3-02		S12EXPR-J-4-01		S12EXPR-J-4-02		S12EXPR-J-4-03	
								Samp_Depth_Top	0		0		0		0		0	
								Samp_Depth_Bot	0.2		0.2		0.2		0.2		0.2	
								Sample_Date	7/29/2009		8/5/2009		7/29/2009		7/29/2009		7/29/2009	
									SA		SA		SA		SA		SA	
		Maximum	Frequency			Number	Number	Number	RA		RA		RA		RA		RA	
		Concentration	of	Action		of	of Times	of	Pit C2		Pit C2		Pit C2		Pit C2		Pit C2	
Parameter	**Units**	**Detected**	**Detection**	**Level (1)**		**Exceedances**	**Detected**	**Samples**	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)
Delta-BHC	UG/KG	61	4%	40		1	3	85	0.89	UJ	0.93	U	0.94	UJ	0.91	UJ	0.94	UJ
Metals																		
Aluminum	MG/KG	35100	100%			0	85	85	9200	J	9800		10000	J	11800	J	16700	J
Antimony	MG/KG	0.28	1%			0	1	68	0.4	UJ	0.5	UJ	0.4	UJ	0.4	UJ	0.4	UJ
Arsenic	MG/KG	12.2	100%	13		0	85	85	3.6	J	3.3		3.5	J	4.6	J	6.8	J
Barium	MG/KG	304	100%	350		0	85	85	89.9	J	78		71.7	J	83.8	J	125	J
Beryllium	MG/KG	1.7	96%	7.2		0	82	85	0.51	J	0.55		0.52	J	0.64	J	0.96	J
Cadmium	MG/KG	1.25	29%	2.5		0	25	85	0.16	J	0.34	J	0.56	UJ	0.53	UJ	0.56	UJ
Calcium	MG/KG	186000	100%			0	85	85	105000	J	82600		84400	J	70500	J	3320	J
Chromium	MG/KG	51.2	100%	30		1	85	85	14.3	J	16.2		14.7	J	17.9	J	25.9	J
Cobalt	MG/KG	29	100%			0	85	85	8.6	J	10		7.4	J	9.6	J	12.6	J
Copper	MG/KG	74.5	100%	50		2	85	85	19.6	J	23.6		19.5	J	26.5	J	29.3	J
Cyanide	MG/KG	2.2	1%	27		0	1	85	0.42	UJ	0.42	U	0.5	UJ	0.42	UJ	0.42	UJ
Iron	MG/KG	56400	100%			0	85	85	19100	J	18600		18800	J	22700	J	33200	J
Lead	MG/KG	431	100%	63		2	85	85	8.1	J	9.2	J	8.2	J	10.8	J	14.4	J
Magnesium	MG/KG	74400	100%			0	85	85	15300	J	15900	J	24700	J	12700	J	5260	J
Manganese	MG/KG	1650	100%	1600		2	85	85	400	J	508		358	J	473	J	542	J
Mercury	MG/KG	0.15	76%	0.18		0	65	85	0.02	J	0.023	J	0.03	J	0.03	J	0.04	J
Nickel	MG/KG	75	95%	30		24	81	85	25.4	J	29.5		23.8	J	**30.5**	J	**47**	J
Potassium	MG/KG	5330	100%			0	85	85	1760	J	1680	J	1420	J	1550	J	1740	J
Selenium	MG/KG	2	21%	3.9		0	18	85	0.173	UJ	0.2	U	0.173	UJ	0.173	UJ	1.11	UJ
Silver	MG/KG	0.27	2%	2		0	2	85	0.0257	UJ	0.3	U	0.0257	UJ	0.0257	UJ	0.0257	UJ
Sodium	MG/KG	1420	91%			0	77	85	153	J	140		145	J	112	J	39.6	J
Thallium	MG/KG	1.7	11%			0	9	85	0.176	UJ	0.6	U	0.176	UJ	0.176	UJ	0.176	UJ
Vanadium	MG/KG	68	100%			0	85	85	16.2	J	18.5		17.1	J	19.6	J	28.4	J
Zinc	MG/KG	6080	100%	109		3	85	85	44.1	J	49	J	55.6	J	53.8	J	70.3	J

Notes:
(1) Action Level presented is New York State's Unrestricted Use Soil Cleanup Objective (SCO) 6NYCRR375-6.8(a)
(Q) = Qualifier: <null space> detected; J estimated; U not detected; UJ not detected at estimated level; R rejected.
(Q) = Qualifier: UR detection limit rejected.
UG/KG = micrograms per kilogram; MG/KG = milligrams per kilogram.

Attachment B Table 1
Soil Samples Considered in Updated Risk Assessment
SEAD-12 Disposal Pit C (C1 C2)

Seneca Army Depot Activity
Romulus, NY

								Area	SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
								Location_Id	S12EXPR-J-4-04		S12EXPR-J-5-01		S12EXPR-K-3-01		S12EXPR-K-4-01		S12EXSW-I-2-01	
								Matrix	SOIL		SOIL		SOIL		SOIL		SOIL	
								Sample_Id	S12EXPR-J-4-04		S12EXPR-J-5-01		S12EXPR-K-3-01		S12EXPR-K-4-01		S12EXSW-I-2-01	
								Samp_Depth_Top	0		0		0		0		0	
								Samp_Depth_Bot	0.2		0.2		0.2		0.2		0	
								Sample_Date	10/15/2009		7/29/2009		7/29/2009		7/29/2009		8/5/2009	
									SA		SA		SA		SA		SA	
		Maximum	Frequency			Number	Number	Number	RA		RA		RA		RA		RA	
		Concentration	of	Action	Number	of Times	of		Pit C2		Pit C2		Pit C2		Pit C2		Pit C2	
Parameter	**Units**	**Detected**	**Detection**	**Level (1)**	**of Exceedances**	**Detected**	**Samples**		Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)
Volatile Organic Compounds																		
Acetone	UG/KG	18	24%	50	0	20	85		21	U	2.3	J	5.3	J	9.6	J	23	UJ
Carbon disulfide	UG/KG	0.85	1%		0	1	85		0.52	U	0.56	UJ	0.58	UJ	0.53	UJ	0.59	U
Cis-1,2-Dichloroethene	UG/KG	0.45	2%	250	0	1	64		0.52	U	0.24	UJ	0.25	UJ	0.23	UJ	0.36	U
Meta/Para Xylene	UG/KG	0.86	3%	260	0	2	64		1	U	0.69	UJ	0.71	UJ	0.65	UJ	1.1	U
Methyl ethyl ketone	UG/KG	1.6	4%	120	0	3	85		21	U	0.83	UJ	0.86	UJ	1.6	J	0.88	U
Methylene chloride	UG/KG	2.8	24%	50	0	20	85		0.52	U	0.42	UJ	0.43	UJ	0.4	UJ	0.53	J
Styrene	UG/KG	0.61	1%		0	1	85		0.52	U	0.31	UJ	0.32	UJ	0.29	UJ	0.52	U
Toluene	UG/KG	62	39%	700	0	33	85		0.52	U	0.63	J	0.97	J	0.61	J	0.76	J
Trichloroethene	UG/KG	1	6%	470	0	5	85		1	U	0.44	UJ	0.76	J	0.42	UJ	0.46	U
Semivolatile Organic Compounds																		
2-Methylnaphthalene	UG/KG	4.4	1%		0	1	84		15	U	35	UJ	36	UJ	33	UJ	37	U
Anthracene	UG/KG	5.4	1%	100000	0	1	84		15	U	41	UJ	42	UJ	39	UJ	43	U
Benzo(a)anthracene	UG/KG	16	8%	1000	0	7	84		15	U	43	UJ	44	UJ	41	UJ	45	U
Benzo(a)pyrene	UG/KG	39	11%	1000	0	9	85		15	U	36	UJ	37	UJ	34	UJ	38	U
Benzo(b)fluoranthene	UG/KG	16	11%	1000	0	9	84		15	U	51	UJ	53	UJ	49	UJ	54	U
Benzo(ghi)perylene	UG/KG	39	12%	100000	0	10	85		44	U	97	UJ	100	UJ	92	UJ	110	U
Benzo(k)fluoranthene	UG/KG	16	8%	800	0	7	84		15	U	53	UJ	54	UJ	50	UJ	56	U
Benzyl alcohol	UG/KG	190	58%		0	37	64		15	U	69	J	26	UJ	24	UJ	48	J
Bis(2-Ethylhexyl)phthalate	UG/KG	96	15%		0	13	85		15	U	85	J	62	UJ	57	UJ	64	U
Butylbenzylphthalate	UG/KG	30	4%		0	3	84		15	U	44	UJ	45	UJ	42	UJ	46	U
Carbazole	UG/KG	7.4	2%		0	2	84		15	U	59	UJ	61	UJ	56	UJ	62	U
Chrysene	UG/KG	19	13%	1000	0	11	84		15	U	44	UJ	45	UJ	42	UJ	46	U
Di-n-butylphthalate	UG/KG	52	5%		0	4	84		15	U	150	UJ	160	UJ	140	UJ	160	U
Di-n-octylphthalate	UG/KG	20	8%		0	7	84		15	U	36	UJ	37	UJ	34	UJ	38	U
Dibenz(a,h)anthracene	UG/KG	5.6	1%	330	0	1	84		44	U	42	UJ	43	UJ	40	UJ	44	U
Dibenzofuran	UG/KG	4.1	1%	7000	0	1	84		15	U	40	UJ	41	UJ	37	UJ	42	U
Dimethylphthalate	UG/KG	86	7%		0	6	84		15	U	43	UJ	44	UJ	41	UJ	45	U
Fluoranthene	UG/KG	88	14%	100000	0	12	85		15	U	43	UJ	44	UJ	41	UJ	45	U
Indeno(1,2,3-cd)pyrene	UG/KG	12	7%	500	0	6	84		44	U	40	UJ	41	UJ	37	UJ	42	U
Phenanthrene	UG/KG	52	15%	100000	0	13	84		15	U	44	UJ	45	UJ	42	UJ	46	U
Pyrene	UG/KG	64	15%	100000	0	13	85		15	U	38	UJ	40	UJ	36	UJ	41	U
Pesticides/PCBs																		
Aroclor-1254	UG/KG	78	2%	100	0	2	85		5.27	U	19	UJ	20	UJ	18	UJ	20	U
4,4'-DDD	UG/KG	8.6	2%	3.3	2	2	85		0.39	U	1.9	UJ	1.9	UJ	1.8	UJ	2	U
4,4'-DDE	UG/KG	5.9	4%	3.3	2	3	85		0.41	U	1.9	UJ	1.9	UJ	1.8	UJ	2	U
4,4'-DDT	UG/KG	9.8	5%	3.3	3	4	85		0.48	U	1.9	UJ	1.9	UJ	1.8	UJ	2	U
Alpha-BHC	UG/KG	210	5%	20	2	4	85		0.37	U	0.92	UJ	0.95	UJ	0.87	UJ	0.97	U
Beta-BHC	UG/KG	63	1%	36	1	1	85		0.93	U	0.92	UJ	0.95	UJ	0.87	UJ	0.97	U

Attachment B Table 1
Soil Samples Considered in Updated Risk Assessment
SEAD-12 Disposal Pit C (C1 C2)

Seneca Army Depot Activity
Romulus, NY

							Area	SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
							Location_Id	S12EXPR-J-4-04		S12EXPR-J-5-01		S12EXPR-K-3-01		S12EXPR-K-4-01		S12EXSW-I-2-01	
							Matrix	SOIL		SOIL		SOIL		SOIL		SOIL	
							Sample_Id	S12EXPR-J-4-04		S12EXPR-J-5-01		S12EXPR-K-3-01		S12EXPR-K-4-01		S12EXSW-I-2-01	
							Samp_Depth_Top	0		0		0		0		0	
							Samp_Depth_Bot	0.2		0.2		0.2		0.2		0	
							Sample_Date	10/15/2009		7/29/2009		7/29/2009		7/29/2009		8/5/2009	
								SA		SA		SA		SA		SA	
		Maximum	Frequency			Number	Number	Number		RA		RA		RA		RA	
		Concentration	of	Action		of	of Times	of		Pit C2		Pit C2		Pit C2		Pit C2	
Parameter	**Units**	**Detected**	**Detection**	**Level (1)**		**Exceedances**	**Detected**	**Samples**		Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)
Delta-BHC	UG/KG	61	4%	40		1	3	85		0.51	U	0.92	UJ	0.95	UJ	0.87	UJ	0.97	U
Metals																			
Aluminum	MG/KG	35100	100%			0	85	85		9100	J	12900	J	12300	J	16300	J	9190	
Antimony	MG/KG	0.28	1%			0	1	68		0.33	UJ	0.4	UJ	0.4	UJ	0.4	UJ	0.5	UJ
Arsenic	MG/KG	12.2	100%	13		0	85	85		8	J	4.8	J	4.6	J	5	J	4.6	
Barium	MG/KG	304	100%	350		0	85	85		87	J	86	J	88.4	J	116	J	95.2	
Beryllium	MG/KG	1.7	96%	7.2		0	82	85		0.5	J	0.77	J	0.7	J	0.9	J	0.57	J
Cadmium	MG/KG	1.25	29%	2.5		0	25	85		0.11	UJ	0.54	UJ	0.55	UJ	0.5	UJ	0.57	U
Calcium	MG/KG	186000	100%			0	85	85		74000	J	14600	J	76100	J	11600	J	91900	
Chromium	MG/KG	51.2	100%	30		1	85	85		14	J	19.6	J	19.8	J	25.3	J	15.6	
Cobalt	MG/KG	29	100%			0	85	85		8.6	J	11.5	J	9.8	J	15	J	7.8	
Copper	MG/KG	74.5	100%	50		2	85	85		35	J	22.9	J	28.5	J	31.2	J	34.5	
Cyanide	MG/KG	2.2	1%	27		0	1	85		0.2	UJ	0.5	UJ	0.5	UJ	0.42	UJ	0.42	U
Iron	MG/KG	56400	100%			0	85	85		24000	J	26300	J	26200	J	33200	J	19600	
Lead	MG/KG	431	100%	63		2	85	85		13	J	13.7	J	13.5	J	14.6	J	9.9	
Magnesium	MG/KG	74400	100%			0	85	85		12000	J	5520	J	18000	J	6710	J	13600	
Manganese	MG/KG	1650	100%	1600		2	85	85		400	J	538	J	471	J	923	J	337	
Mercury	MG/KG	0.15	76%	0.18		0	65	85		0.019	J	0.03	J	0.02	J	0.04	J	0.026	J
Nickel	MG/KG	75	95%	30		24	81	85		28	J	29.3	J	**33.1**	J	**48**	J	27.1	J
Potassium	MG/KG	5330	100%			0	85	85		1300	J	1420	J	1730	J	1470	J	1650	J
Selenium	MG/KG	2	21%	3.9		0	18	85		0.29	J	1.08	UJ	0.173	UJ	1.3	J	1.1	U
Silver	MG/KG	0.27	2%	2		0	2	85		0.22	UJ	0.0257	UJ	0.0257	UJ	0.0257	UJ	0.3	U
Sodium	MG/KG	1420	91%			0	77	85		110	J	50.6	J	131	J	46	J	130	
Thallium	MG/KG	1.7	11%			0	9	85		0.56	UJ	0.176	UJ	0.176	UJ	0.176	UJ	0.3	U
Vanadium	MG/KG	68	100%			0	85	85		19	J	23.1	J	21.4	J	26.7	J	21.9	
Zinc	MG/KG	6080	100%	109		3	85	85		65	J	51.6	J	79.9	J	67	J	48.6	J

Notes:
(1) Action Level presented is New York State's Unrestricted Use Soil Cleanup Objective (SCO) 6NYCRR375-6.8(a)
(Q) = Qualifier: <null space> detected; J estimated; U not detected; UJ not detected at estimated level; R rejected.
(Q) = Qualifier: UR detection limit rejected.
UG/KG = micrograms per kilogram; MG/KG = milligrams per kilogram.

Attachment B Table 1
Soil Samples Considered in Updated Risk Assessment
SEAD-12 Disposal Pit C (C1 C2)

Seneca Army Depot Activity
Romulus, NY

							Area	SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
							Location_Id	S12EXSW-I-2-02		S12EXSW-I-2-03		S12EXSW-I-3-01		S12EXSW-I-3-01		S12EXSW-I-3-02	
							Matrix	SOIL		SOIL		SOIL		SOIL		SOIL	
							Sample_Id	S12EXSW-I-2-02		S12EXSW-I-2-03		S12EXSW-I-3-01		S12EXSW-I-3-05		S12EXSW-I-3-02	
							Samp_Depth_Top	0		0		0		0		0	
							Samp_Depth_Bot	0.2		0.2		0		0.2		0.2	
							Sample_Date	10/7/2009		10/7/2009		8/5/2009		10/5/2009		10/5/2009	
								SA		SA		SA		SA		SA	
		Maximum	Frequency			Number	Number	Number	RA		RA		RA		RA		RA	
		Concentration	of	Action	Number	of Times	of	Pit C2		Pit C2		Pit C2		Pit C2		Pit C2	
Parameter	**Units**	**Detected**	**Detection**	**Level (1)**	**of Exceedances**	**Detected**	**Samples**	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)
Volatile Organic Compounds																	
Acetone	UG/KG	18	24%	50	0	20	85	1.9	UJ	1.9	UJ	22	UJ	1.7	UJ	1.7	UJ
Carbon disulfide	UG/KG	0.85	1%		0	1	85	0.65	U	0.65	U	0.57	U	0.58	U	0.58	U
Cis-1,2-Dichloroethene	UG/KG	0.45	2%	250	0	1	64	0.39	U	0.39	U	0.35	U	0.35	U	0.35	U
Meta/Para Xylene	UG/KG	0.86	3%	260	0	2	64	1.2	U	1.2	U	1.1	U	1.1	U	1.1	U
Methyl ethyl ketone	UG/KG	1.6	4%	120	0	3	85	0.96	U	0.96	U	0.85	U	0.86	U	0.86	U
Methylene chloride	UG/KG	2.8	24%	50	0	20	85	2.8	J	0.77	J	0.66	J	0.43	U	0.43	U
Styrene	UG/KG	0.61	1%		0	1	85	0.57	U	0.57	U	0.51	U	0.51	U	0.51	U
Toluene	UG/KG	62	39%	700	0	33	85	0.41	U	0.41	U	0.36	U	0.36	U	0.37	U
Trichloroethene	UG/KG	1	6%	470	0	5	85	0.51	U	0.51	U	0.45	U	0.45	U	0.46	U
Semivolatile Organic Compounds																	
2-Methylnaphthalene	UG/KG	4.4	1%		0	1	84	41	U	41	U	36	U	36	U	190	U
Anthracene	UG/KG	5.4	1%	100000	0	1	84	47	U	47	U	42	U	42	U	210	U
Benzo(a)anthracene	UG/KG	16	8%	1000	0	7	84	49	U	50	U	44	U	44	U	230	U
Benzo(a)pyrene	UG/KG	39	11%	1000	0	9	85	42	U	42	U	37	U	38	U	190	U
Benzo(b)fluoranthene	UG/KG	16	11%	1000	0	9	84	60	U	60	U	53	U	53	U	270	U
Benzo(ghi)perylene	UG/KG	39	12%	100000	0	10	85	120	U	120	U	99	U	100	U	510	U
Benzo(k)fluoranthene	UG/KG	16	8%	800	0	7	84	61	U	61	U	54	U	54	U	280	U
Benzyl alcohol	UG/KG	190	58%		0	37	64	190	J	120	J	40	J	26	U	130	U
Bis(2-Ethylhexyl)phthalate	UG/KG	96	15%		0	13	85	70	U	70	U	62	U	62	U	320	U
Butylbenzylphthalate	UG/KG	30	4%		0	3	84	51	U	51	U	45	U	45	U	230	U
Carbazole	UG/KG	7.4	2%		0	2	84	68	U	68	U	61	U	61	U	310	U
Chrysene	UG/KG	19	13%	1000	0	11	84	51	U	51	U	45	U	45	U	230	U
Di-n-butylphthalate	UG/KG	52	5%		0	4	84	170	U	170	U	160	U	160	U	770	U
Di-n-octylphthalate	UG/KG	20	8%		0	7	84	42	U	42	U	37	U	38	U	190	U
Dibenz(a,h)anthracene	UG/KG	5.6	1%	330	0	1	84	48	U	48	U	43	U	43	U	220	U
Dibenzofuran	UG/KG	4.1	1%	7000	0	1	84	46	U	46	U	41	U	41	U	210	U
Dimethylphthalate	UG/KG	86	7%		0	6	84	49	U	50	U	44	U	44	U	230	U
Fluoranthene	UG/KG	88	14%	100000	0	12	85	49	U	50	U	44	U	44	U	230	U
Indeno(1,2,3-cd)pyrene	UG/KG	12	7%	500	0	6	84	46	U	46	U	41	U	41	U	210	U
Phenanthrene	UG/KG	52	15%	100000	0	13	84	51	U	51	U	45	U	45	U	230	U
Pyrene	UG/KG	64	15%	100000	0	13	85	44	U	45	U	39	U	40	U	200	U
Pesticides/PCBs																	
Aroclor-1254	UG/KG	78	2%	100	0	2	85	78		22	U	19	U	200	U	200	U
4,4'-DDD	UG/KG	8.6	2%	3.3	2	2	85	2.1	U	2.2	U	1.9	U	19	U	19	U
4,4'-DDE	UG/KG	5.9	4%	3.3	2	3	85	2.1	U	2.2	U	1.9	U	19	U	19	U
4,4'-DDT	UG/KG	9.8	5%	3.3	3	4	85	2.1	U	2.2	U	1.9	U	19	U	19	U
Alpha-BHC	UG/KG	210	5%	20	2	4	85	1.1	U	1.1	U	14		9.5	U	**210**	
Beta-BHC	UG/KG	63	1%	36	1	1	85	1.1	U	1.1	U	0.94	U	**63**		9.5	U

Attachment B Table 1
Soil Samples Considered in Updated Risk Assessment
SEAD-12 Disposal Pit C (C1 C2)

Seneca Army Depot Activity
Romulus, NY

								Area	SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
								Location_Id	S12EXSW-I-2-02		S12EXSW-I-2-03		S12EXSW-I-3-01		S12EXSW-I-3-01		S12EXSW-I-3-02	
								Matrix	SOIL		SOIL		SOIL		SOIL		SOIL	
								Sample_Id	S12EXSW-I-2-02		S12EXSW-I-2-03		S12EXSW-I-3-01		S12EXSW-I-3-05		S12EXSW-I-3-02	
								Samp_Depth_Top	0		0		0		0		0	
								Samp_Depth_Bot	0.2		0.2		0		0.2		0.2	
								Sample_Date	10/7/2009		10/7/2009		8/5/2009		10/5/2009		10/5/2009	
									SA		SA		SA		SA		SA	
		Maximum	Frequency			Number	Number		RA		RA		RA		RA		RA	
		Concentration	of	Action	Number	of Times	of		Pit C2		Pit C2		Pit C2		Pit C2		Pit C2	
Parameter	**Units**	**Detected**	**Detection**	**Level (1)**	**of Exceedances**	**Detected**	**Samples**		Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)
Delta-BHC	UG/KG	61	4%	40	1	3	85		1.1	U	1.1	U	3.3		9.5	U	**61**	
Metals																		
Aluminum	MG/KG	35100	100%		0	85	85		15500	J	14400	J	10100		10700		10100	
Antimony	MG/KG	0.28	1%		0	1	68		0.498	UJ	0.503	UJ	0.5	UJ	0.449	U	0.451	U
Arsenic	MG/KG	12.2	100%	13	0	85	85		5.7	J	5.3	J	3.4		5.1		5.9	
Barium	MG/KG	304	100%	350	0	85	85		110	J	107	J	79.7		80.9		80.2	
Beryllium	MG/KG	1.7	96%	7.2	0	82	85		0.923	J	0.79	J	0.55	J	0.593		0.562	J
Cadmium	MG/KG	1.25	29%	2.5	0	25	85		0.622	U	0.629	U	0.55	U	0.561	UJ	0.564	UJ
Calcium	MG/KG	186000	100%		0	85	85		13400	J	48200	J	87200		85000		75600	
Chromium	MG/KG	51.2	100%	30	1	85	85		24.9	J	20.9	J	16		17.1		18	
Cobalt	MG/KG	29	100%		0	85	85		11.1	J	10.2	J	8.7		12.7		11.4	
Copper	MG/KG	74.5	100%	50	2	85	85		28	J	24	J	20.6		22.5		28.7	
Cyanide	MG/KG	2.2	1%	27	0	1	85		0.42	U	0.42	U	0.42	U	0.5	U	0.42	U
Iron	MG/KG	56400	100%		0	85	85		28100	J	22900	J	18700		19700		20300	
Lead	MG/KG	431	100%	63	2	85	85		14	J	10.4	J	8.9		9.3		11.3	
Magnesium	MG/KG	74400	100%		0	85	85		5890	J	9620	J	13100		14700		12900	
Manganese	MG/KG	1650	100%	1600	2	85	85		451	J	738	J	446		423		471	
Mercury	MG/KG	0.15	76%	0.18	0	65	85		0.042		0.033	J	0.02	J	0.031	UJ	0.033	UJ
Nickel	MG/KG	75	95%	30	24	81	85		**37.6**	J	**30.5**	J	26.9	J	27.7		29.4	
Potassium	MG/KG	5330	100%		0	85	85		1630	J	2400	J	1630	J	1770		1700	
Selenium	MG/KG	2	21%	3.9	0	18	85		0.522	J	0.525	J	1.1	U	1.1	UJ	0.195	U
Silver	MG/KG	0.27	2%	2	0	2	85		0.032	UJ	0.032	UJ	0.3	U	0.029	U	0.029	U
Sodium	MG/KG	1420	91%		0	77	85		51.6	J	125	J	140		143		131	
Thallium	MG/KG	1.7	11%		0	9	85		0.657	UJ	0.664	UJ	0.2	U	0.198	U	0.199	U
Vanadium	MG/KG	68	100%		0	85	85		26.4	J	24.8	J	17.8		19.5		20	
Zinc	MG/KG	6080	100%	109	3	85	85		62.4	J	57.6	J	49.4	J	64.6		50.9	

Notes:
(1) Action Level presented is New York State's Unrestricted Use Soil Cleanup Objective (SCO) 6NYCRR375-6.8(a)
(Q) = Qualifier: <null space> detected; J estimated; U not detected; UJ not detected at estimated level; R rejected.
(Q) = Qualifier: UR detection limit rejected.
UG/KG = micrograms per kilogram; MG/KG = milligrams per kilogram.

Attachment B Table 1
Soil Samples Considered in Updated Risk Assessment
SEAD-12 Disposal Pit C (C1 C2)

Seneca Army Depot Activity
Romulus, NY

								Area	SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
								Location_Id	S12EXSW-I-3-03		S12EXSW-I-3-04		S12EXSW-I-4-01		S12EXSW-J-2-01		S12EXSW-J-2-02	
								Matrix	SOIL		SOIL		SOIL		SOIL		SOIL	
								Sample_Id	S12EXSW-I-3-03		S12EXSW-I-3-04		S12EXSW-I-4-01		S12EXSW-J-2-01		S12EXSW-J-2-02	
								Samp_Depth_Top	0		0		0		0		0	
								Samp_Depth_Bot	0.2		0.2		0.2		0		0.2	
								Sample_Date	10/5/2009		10/15/2009		10/15/2009		8/4/2009		10/7/2009	
									DU		SA		SA		SA		SA	
		Maximum	Frequency			Number	Number	Number	RA		RA		RA		RA		RA	
		Concentration	of	Action	Number	of Times	of		Pit C2		Pit C2		Pit C2		Pit C2		Pit C2	
Parameter	**Units**	**Detected**	**Detection**	**Level (1)**	**of Exceedances**	**Detected**	**Samples**		Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)
Volatile Organic Compounds																		
Acetone	UG/KG	18	24%	50	0	20	85		1.8	UJ	22	U	23	U	22	UJ	1.8	UJ
Carbon disulfide	UG/KG	0.85	1%		0	1	85		0.59	U	0.55	U	0.57	U	0.57	U	0.61	U
Cis-1,2-Dichloroethene	UG/KG	0.45	2%	250	0	1	64		0.36	U	0.55	U	0.57	U	0.35	U	0.37	U
Meta/Para Xylene	UG/KG	0.86	3%	260	0	2	64		1.1	U	1.1	U	1.1	U	1.1	U	1.1	U
Methyl ethyl ketone	UG/KG	1.6	4%	120	0	3	85		0.87	U	22	U	23	U	0.85	U	0.9	U
Methylene chloride	UG/KG	2.8	24%	50	0	20	85		0.44	U	0.55	U	0.57	U	0.59	J	1.9	J
Styrene	UG/KG	0.61	1%		0	1	85		0.52	U	0.55	U	0.57	U	0.5	U	0.54	U
Toluene	UG/KG	62	39%	700	0	33	85		0.37	U	0.55	U	0.57	U	1.6	J	0.38	U
Trichloroethene	UG/KG	1	6%	470	0	5	85		0.46	U	1.1	U	1.1	U	0.45	U	0.48	U
Semivolatile Organic Compounds																		
2-Methylnaphthalene	UG/KG	4.4	1%		0	1	84		190	U	15	U	15	U	36	U	38	U
Anthracene	UG/KG	5.4	1%	100000	0	1	84		220	U	15	U	15	U	42	U	44	U
Benzo(a)anthracene	UG/KG	16	8%	1000	0	7	84		230	U	15	U	15	U	44	U	46	U
Benzo(a)pyrene	UG/KG	39	11%	1000	0	9	85		190	U	15	U	15	U	37	U	39	U
Benzo(b)fluoranthene	UG/KG	16	11%	1000	0	9	84		270	U	15	U	15	U	53	U	56	U
Benzo(ghi)perylene	UG/KG	39	12%	100000	0	10	85		510	U	44	U	46	U	99	U	110	U
Benzo(k)fluoranthene	UG/KG	16	8%	800	0	7	84		280	U	15	U	15	U	54	U	57	U
Benzyl alcohol	UG/KG	190	58%		0	37	64		140	U	15	U	15	U	42	J	99	J
Bis(2-Ethylhexyl)phthalate	UG/KG	96	15%		0	13	85		320	U	15	U	15	U	61	U	65	U
Butylbenzylphthalate	UG/KG	30	4%		0	3	84		230	U	15	U	15	U	45	U	48	U
Carbazole	UG/KG	7.4	2%		0	2	84		310	U	15	U	15	U	60	U	64	U
Chrysene	UG/KG	19	13%	1000	0	11	84		230	U	15	U	15	U	45	U	48	U
Di-n-butylphthalate	UG/KG	52	5%		0	4	84		770	U	15	U	15	U	150	U	160	U
Di-n-octylphthalate	UG/KG	20	8%		0	7	84		190	U	15	U	15	U	37	U	39	U
Dibenz(a,h)anthracene	UG/KG	5.6	1%	330	0	1	84		220	U	44	U	46	U	43	U	45	U
Dibenzofuran	UG/KG	4.1	1%	7000	0	1	84		210	U	15	U	15	U	40	U	43	U
Dimethylphthalate	UG/KG	86	7%		0	6	84		230	U	58	J	86	J	44	U	46	U
Fluoranthene	UG/KG	88	14%	100000	0	12	85		230	U	15	U	15	U	44	U	46	U
Indeno(1,2,3-cd)pyrene	UG/KG	12	7%	500	0	6	84		210	U	44	U	46	U	40	U	43	U
Phenanthrene	UG/KG	52	15%	100000	0	13	84		230	U	15	U	15	U	45	U	48	U
Pyrene	UG/KG	64	15%	100000	0	13	85		200	U	15	U	15	U	39	U	42	U
Pesticides/PCBs																		
Aroclor-1254	UG/KG	78	2%	100	0	2	85		200	U	5.19	U	5.41	U	19	U	21	U
4,4'-DDD	UG/KG	8.6	2%	3.3	2	2	85		20	U	0.38	U	0.4	U	1.9	U	2	U
4,4'-DDE	UG/KG	5.9	4%	3.3	2	3	85		20	U	0.4	U	0.42	U	1.9	U	2	U
4,4'-DDT	UG/KG	9.8	5%	3.3	3	4	85		20	U	0.47	U	0.49	U	1.9	U	2	U
Alpha-BHC	UG/KG	210	5%	20	2	4	85		**130**		0.36	U	0.38	U	0.94	U	0.99	U
Beta-BHC	UG/KG	63	1%	36	1	1	85		9.6	U	0.92	U	0.96	U	0.94	U	0.99	U

Attachment B Table 1
Soil Samples Considered in Updated Risk Assessment
SEAD-12 Disposal Pit C (C1 C2)

Seneca Army Depot Activity
Romulus, NY

								Area	SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
								Location_Id	S12EXSW-I-3-03		S12EXSW-I-3-04		S12EXSW-I-4-01		S12EXSW-J-2-01		S12EXSW-J-2-02	
								Matrix	SOIL		SOIL		SOIL		SOIL		SOIL	
								Sample_Id	S12EXSW-I-3-03		S12EXSW-I-3-04		S12EXSW-I-4-01		S12EXSW-J-2-01		S12EXSW-J-2-02	
								Samp_Depth_Top	0		0		0		0		0	
								Samp_Depth_Bot	0.2		0.2		0.2		0		0.2	
								Sample_Date	10/5/2009		10/15/2009		10/15/2009		8/4/2009		10/7/2009	
									DU		SA		SA		SA		SA	
		Maximum	Frequency			Number	Number		RA		RA		RA		RA		RA	
		Concentration	of	Action	Number	of Times	of		Pit C2		Pit C2		Pit C2		Pit C2		Pit C2	
Parameter	**Units**	**Detected**	**Detection**	**Level (1)**	**of Exceedances**	**Detected**	**Samples**		Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)
Delta-BHC	UG/KG	61	4%	40	1	3	85		38		0.5	U	0.53	U	0.94	U	0.99	U
Metals																		
Aluminum	MG/KG	35100	100%		0	85	85		9840		5300	J	8900	J	9050		12500	J
Antimony	MG/KG	0.28	1%		0	1	68		0.447	U	0.33	UJ	0.34	UJ	0.5	UJ	0.471	UJ
Arsenic	MG/KG	12.2	100%	13	0	85	85		6.1		3.2	J	3.7	J	3.5		6.1	J
Barium	MG/KG	304	100%	350	0	85	85		79.7		53	J	78	J	81.9		88.6	J
Beryllium	MG/KG	1.7	96%	7.2	0	82	85		0.556	J	0.25	J	0.45	J	0.49	J	0.665	J
Cadmium	MG/KG	1.25	29%	2.5	0	25	85		0.664		0.11	UJ	0.12	J	0.54	U	0.589	U
Calcium	MG/KG	186000	100%		0	85	85		87500		78000	J	89000	J	80100		51700	J
Chromium	MG/KG	51.2	100%	30	1	85	85		16.3		8.1	J	15	J	14.5		19.4	J
Cobalt	MG/KG	29	100%		0	85	85		7.8		4.3	J	7.8	J	9.3		8.6	J
Copper	MG/KG	74.5	100%	50	2	85	85		23.2		18	J	22	J	20.7		32.1	J
Cyanide	MG/KG	2.2	1%	27	0	1	85		0.5	U	0.2	UJ	0.21	UJ	0.5	U	0.42	U
Iron	MG/KG	56400	100%		0	85	85		18900		12000	J	19000	J	18400		19800	J
Lead	MG/KG	431	100%	63	2	85	85		11.6		5.4	J	7.9	J	8.1		10.4	J
Magnesium	MG/KG	74400	100%		0	85	85		21200		20000	J	16000	J	20200		12500	J
Manganese	MG/KG	1650	100%	1600	2	85	85		539		380	J	370	J	432		367	J
Mercury	MG/KG	0.15	76%	0.18	0	65	85		0.032	UJ	0.01	J	0.013	J	0.022	J	0.017	J
Nickel	MG/KG	75	95%	30	24	81	85		25.1		11	J	28	J	26.5	J	31.7	J
Potassium	MG/KG	5330	100%		0	85	85		1730		1100	J	1300	J	1700	J	1580	J
Selenium	MG/KG	2	21%	3.9	0	18	85		0.193	U	0.27	UJ	0.29	UJ	1.1	U	0.204	UJ
Silver	MG/KG	0.27	2%	2	0	2	85		0.029	U	0.22	UJ	0.23	UJ	0.3	U	0.03	UJ
Sodium	MG/KG	1420	91%		0	77	85		151		77	J	120	J	140		84.3	J
Thallium	MG/KG	1.7	11%		0	9	85		0.197	U	0.55	UJ	0.57	UJ	0.2	U	0.207	UJ
Vanadium	MG/KG	68	100%		0	85	85		19.2		12	J	16	J	16.8		22.6	J
Zinc	MG/KG	6080	100%	109	3	85	85		51.9		35	J	56	J	98.8	J	58.8	J

Notes:
(1) Action Level presented is New York State's Unrestricted Use Soil Cleanup Objective (SCO) 6NYCRR375-6.8(a)
(Q) = Qualifier: <null space> detected; J estimated; U not detected; UJ not detected at estimated level; R rejected.
(Q) = Qualifier: UR detection limit rejected.
UG/KG = micrograms per kilogram; MG/KG = milligrams per kilogram.

Attachment B Table 1
Soil Samples Considered in Updated Risk Assessment
SEAD-12 Disposal Pit C (C1 C2)

Seneca Army Depot Activity
Romulus, NY

								Area	SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
								Location_Id	S12EXSW-J-3-01		S12EXSW-J-3-02		S12EXSW-J-4-01		S12EXSW-J-4-02		S12EXSW-J-4-03	
								Matrix	SOIL		SOIL		SOIL		SOIL		SOIL	
								Sample_Id	S12EXSW-J-3-01		S12EXSW-J-3-02		S12EXSW-J-4-01		S12EXSW-J-4-02		S12EXSW-J-4-03	
								Samp_Depth_Top	0		0		0		0		0	
								Samp_Depth_Bot	0		0		0		0		0	
								Sample_Date	8/4/2009		8/4/2009		8/4/2009		8/4/2009		8/4/2009	
									SA		SA		SA		SA		SA	
		Maximum	Frequency			Number	Number		RA		RA		RA		RA		RA	
		Concentration	of	Action	Number	of Times	of		Pit C2		Pit C2		Pit C2		Pit C2		Pit C2	
Parameter	**Units**	**Detected**	**Detection**	**Level (1)**	**of Exceedances**	**Detected**	**Samples**		Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)
Volatile Organic Compounds																		
Acetone	UG/KG	18	24%	50	0	20	85		24	UJ	22	UJ	23	UJ	1.7	UJ	22	UJ
Carbon disulfide	UG/KG	0.85	1%		0	1	85		0.62	U	0.57	U	0.59	U	0.57	U	0.56	U
Cis-1,2-Dichloroethene	UG/KG	0.45	2%	250	0	1	64		0.38	U	0.35	U	0.36	U	0.35	U	0.34	U
Meta/Para Xylene	UG/KG	0.86	3%	260	0	2	64		1.2	U	1.1	U	1.1	U	1.1	U	1.1	U
Methyl ethyl ketone	UG/KG	1.6	4%	120	0	3	85		0.93	U	0.85	U	0.87	U	0.85	U	0.83	U
Methylene chloride	UG/KG	2.8	24%	50	0	20	85		0.66	J	5.5	U	0.58	J	5.6	U	5.4	U
Styrene	UG/KG	0.61	1%		0	1	85		0.55	U	0.5	U	0.52	U	0.51	U	0.49	U
Toluene	UG/KG	62	39%	700	0	33	85		0.98	J	0.46	J	0.66	J	0.58	J	1.1	J
Trichloroethene	UG/KG	1	6%	470	0	5	85		0.49	U	0.45	U	0.46	U	0.45	U	0.44	U
Semivolatile Organic Compounds																		
2-Methylnaphthalene	UG/KG	4.4	1%		0	1	84		39	U	36	U	37	U	36	U	35	U
Anthracene	UG/KG	5.4	1%	100000	0	1	84		45	U	41	U	43	U	42	U	40	U
Benzo(a)anthracene	UG/KG	16	8%	1000	0	7	84		48	U	44	U	45	U	44	U	43	U
Benzo(a)pyrene	UG/KG	39	11%	1000	0	9	85		41	U	37	U	38	U	37	U	36	U
Benzo(b)fluoranthene	UG/KG	16	11%	1000	0	9	84		58	U	52	U	54	U	53	U	51	U
Benzo(ghi)perylene	UG/KG	39	12%	100000	0	10	85		110	U	99	U	110	U	100	U	97	U
Benzo(k)fluoranthene	UG/KG	16	8%	800	0	7	84		59	U	54	U	55	U	54	U	52	U
Benzyl alcohol	UG/KG	190	58%		0	37	64		50	J	26	U	50	J	49	J	95	J
Bis(2-Ethylhexyl)phthalate	UG/KG	96	15%		0	13	85		67	U	61	U	63	U	62	U	60	U
Butylbenzylphthalate	UG/KG	30	4%		0	3	84		49	U	45	U	46	U	45	U	44	U
Carbazole	UG/KG	7.4	2%		0	2	84		66	U	60	U	62	U	61	U	59	U
Chrysene	UG/KG	19	13%	1000	0	11	84		49	U	45	U	46	U	45	U	44	U
Di-n-butylphthalate	UG/KG	52	5%		0	4	84		170	U	150	U	160	U	160	U	150	U
Di-n-octylphthalate	UG/KG	20	8%		0	7	84		41	U	37	U	38	U	37	U	36	U
Dibenz(a,h)anthracene	UG/KG	5.6	1%	330	0	1	84		47	U	43	U	44	U	43	U	42	U
Dibenzofuran	UG/KG	4.1	1%	7000	0	1	84		44	U	40	U	42	U	41	U	39	U
Dimethylphthalate	UG/KG	86	7%		0	6	84		48	U	44	U	45	U	44	U	43	U
Fluoranthene	UG/KG	88	14%	100000	0	12	85		48	U	44	U	45	U	44	U	43	U
Indeno(1,2,3-cd)pyrene	UG/KG	12	7%	500	0	6	84		44	U	40	U	42	U	41	U	39	U
Phenanthrene	UG/KG	52	15%	100000	0	13	84		49	U	45	U	46	U	45	U	44	U
Pyrene	UG/KG	64	15%	100000	0	13	85		43	U	39	U	40	U	39	U	38	U
Pesticides/PCBs																		
Aroclor-1254	UG/KG	78	2%	100	0	2	85		21	U	19	U	20	U	19	U	19	U
4,4'-DDD	UG/KG	8.6	2%	3.3	2	2	85		2.1	U	1.9	U	2	U	1.9	U	1.9	U
4,4'-DDE	UG/KG	5.9	4%	3.3	2	3	85		2.1	U	1.9	U	2	U	1.9	U	1.9	U
4,4'-DDT	UG/KG	9.8	5%	3.3	3	4	85		2.1	U	1.9	U	2	U	1.9	U	1.9	U
Alpha-BHC	UG/KG	210	5%	20	2	4	85		1.1	U	0.93	U	0.96	U	0.94	U	0.91	U
Beta-BHC	UG/KG	63	1%	36	1	1	85		1.1	U	0.93	U	0.96	U	0.94	U	0.91	U

Attachment B Table 1
Soil Samples Considered in Updated Risk Assessment
SEAD-12 Disposal Pit C (C1 C2)

Seneca Army Depot Activity
Romulus, NY

								Area	SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
								Location_Id	S12EXSW-J-3-01		S12EXSW-J-3-02		S12EXSW-J-4-01		S12EXSW-J-4-02		S12EXSW-J-4-03	
								Matrix	SOIL		SOIL		SOIL		SOIL		SOIL	
								Sample_Id	S12EXSW-J-3-01		S12EXSW-J-3-02		S12EXSW-J-4-01		S12EXSW-J-4-02		S12EXSW-J-4-03	
								Samp_Depth_Top	0		0		0		0		0	
								Samp_Depth_Bot	0		0		0		0		0	
								Sample_Date	8/4/2009		8/4/2009		8/4/2009		8/4/2009		8/4/2009	
									SA		SA		SA		SA		SA	
		Maximum	Frequency			Number	Number	Number	RA		RA		RA		RA		RA	
		Concentration	of	Action		of	of Times	of	Pit C2		Pit C2		Pit C2		Pit C2		Pit C2	
Parameter	**Units**	**Detected**	**Detection**	**Level (1)**		**Exceedances**	**Detected**	**Samples**	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)
Delta-BHC	UG/KG	61	4%	40		1	3	85	1.1	U	0.93	U	0.96	U	0.94	U	0.91	U
Metals																		
Aluminum	MG/KG	35100	100%			0	85	85	13100		9710		10500		11600		9860	
Antimony	MG/KG	0.28	1%			0	1	68	0.5	UJ	0.5	UJ	0.5	UJ	0.5	UJ	0.5	UJ
Arsenic	MG/KG	12.2	100%	13		0	85	85	3		3.9		5.7		4		3	
Barium	MG/KG	304	100%	350		0	85	85	101		79.4		71.4		90.5		84.4	
Beryllium	MG/KG	1.7	96%	7.2		0	82	85	0.71		0.55		0.61		0.63		0.56	
Cadmium	MG/KG	1.25	29%	2.5		0	25	85	0.59	U	0.54	U	1.25		0.55	U	0.54	U
Calcium	MG/KG	186000	100%			0	85	85	28200		78200		73900		67700		91500	
Chromium	MG/KG	51.2	100%	30		1	85	85	19.4		15.6		17		18.7		15.9	
Cobalt	MG/KG	29	100%			0	85	85	9.8		9.7		10.4		10.9		9.4	
Copper	MG/KG	74.5	100%	50		2	85	85	22.2		24.3		41.3		24.4		22.1	
Cyanide	MG/KG	2.2	1%	27		0	1	85	0.5	U	0.5	U	0.42	U	0.42	U	0.42	U
Iron	MG/KG	56400	100%			0	85	85	19900		19100		20800		21900		18300	
Lead	MG/KG	431	100%	63		2	85	85	11.8		10.1		13.9		10.9		8.1	
Magnesium	MG/KG	74400	100%			0	85	85	6990		12700		12200		11900		13600	
Manganese	MG/KG	1650	100%	1600		2	85	85	802		422		409		557		433	
Mercury	MG/KG	0.15	76%	0.18		0	65	85	0.036	J	0.021	J	0.034	J	0.021	J	0.016	J
Nickel	MG/KG	75	95%	30		24	81	85	28.1	J	27.5	J	**39**	J	**33.1**	J	27.5	J
Potassium	MG/KG	5330	100%			0	85	85	1480	J	1570	J	1480	J	1650	J	1670	J
Selenium	MG/KG	2	21%	3.9		0	18	85	1.2	U	1.1	U	1.1	U	1.1	U	1.1	U
Silver	MG/KG	0.27	2%	2		0	2	85	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U
Sodium	MG/KG	1420	91%			0	77	85	70	J	130		110		130		160	
Thallium	MG/KG	1.7	11%			0	9	85	1.1	U	0.2	U	0.3	U	0.6	U	0.2	U
Vanadium	MG/KG	68	100%			0	85	85	22.3		17.7		21.2		19.8		17.3	
Zinc	MG/KG	6080	100%	109		3	85	85	55.4	J	50.8	J	**118**	J	54	J	46.9	J

Notes:
(1) Action Level presented is New York State's Unrestricted Use Soil Cleanup Objective (SCO) 6NYCRR375-6.8(a)
(Q) = Qualifier: <null space> detected; J estimated; U not detected; UJ not detected at estimated level; R rejected.
(Q) = Qualifier: UR detection limit rejected.
UG/KG = micrograms per kilogram; MG/KG = milligrams per kilogram.

Attachment B Table 1
Soil Samples Considered in Updated Risk Assessment
SEAD-12 Disposal Pit C (C1 C2)

Seneca Army Depot Activity
Romulus, NY

								Area	SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
								Location_Id	S12EXSW-J-4-04		S12EXSW-J-5-01		S12EXSW-K-3-01		S12EXSW-K-4-01		MW12-14	
								Matrix	SOIL		SOIL		SOIL		SOIL		SOIL	
								Sample_Id	S12EXSW-J-4-04		S12EXSW-J-5-01		S12EXSW-K-3-01		S12EXSW-K-4-01		123099	
								Samp_Depth_Top	0		0		0		0		0	
								Samp_Depth_Bot	0.2		0		0		0		0.2	
								Sample_Date	10/15/2009		8/5/2009		8/5/2009		8/5/2009		14-Oct-98	
									SA		SA		SA		SA		SA	
									RA		RA		RA		RA I PHASE 1 STEP 1 I PHA			
Parameter	**Units**	**Maximum Concentration Detected**	**Frequency of Detection**	**Action Level (1)**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples**		Pit C2		Pit C2		Pit C2		Pit C2			
									Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)
Volatile Organic Compounds																		
Acetone	UG/KG	18	24%	50	0	20	85		22	U	22	UJ	22	UJ	23	UJ	14	U
Carbon disulfide	UG/KG	0.85	1%		0	1	85		0.54	U	0.56	U	0.56	U	0.59	U	14	U
Cis-1,2-Dichloroethene	UG/KG	0.45	2%	250	0	1	64		0.54	U	0.34	U	0.34	U	0.36	U		
Meta/Para Xylene	UG/KG	0.86	3%	260	0	2	64		1.1	U	1.1	U	1.1	U	1.1	U		
Methyl ethyl ketone	UG/KG	1.6	4%	120	0	3	85		22	U	0.83	U	0.83	U	0.87	U	14	U
Methylene chloride	UG/KG	2.8	24%	50	0	20	85		0.54	U	5.4	U	5.4	U	5.7	U	14	U
Styrene	UG/KG	0.61	1%		0	1	85		0.61	J	0.49	U	0.49	U	0.52	U	14	U
Toluene	UG/KG	62	39%	700	0	33	85		0.54	U	0.58	J	1.5	J	0.42	J	14	U
Trichloroethene	UG/KG	1	6%	470	0	5	85		1.1	U	0.44	U	0.44	U	0.46	U	14	U
Semivolatile Organic Compounds																		
2-Methylnaphthalene	UG/KG	4.4	1%		0	1	84		15	U	35	U	35	U	37	U	85	U
Anthracene	UG/KG	5.4	1%	100000	0	1	84		15	U	41	U	41	U	43	U	85	U
Benzo(a)anthracene	UG/KG	16	8%	1000	0	7	84		15	U	43	U	43	U	45	U	85	U
Benzo(a)pyrene	UG/KG	39	11%	1000	0	9	85		15	U	36	U	36	U	38	U	85	U
Benzo(b)fluoranthene	UG/KG	16	11%	1000	0	9	84		15	U	52	U	52	U	54	U	85	U
Benzo(ghi)perylene	UG/KG	39	12%	100000	0	10	85		45	U	97	U	97	U	110	U	85	U
Benzo(k)fluoranthene	UG/KG	16	8%	800	0	7	84		15	U	53	U	53	U	55	U	85	U
Benzyl alcohol	UG/KG	190	58%		0	37	64		15	U	120	J	94	J	130	J		
Bis(2-Ethylhexyl)phthalate	UG/KG	96	15%		0	13	85		15	U	60	U	60	U	63	U	85	UJ
Butylbenzylphthalate	UG/KG	30	4%		0	3	84		15	U	44	U	44	U	46	U	85	UJ
Carbazole	UG/KG	7.4	2%		0	2	84		15	U	59	U	59	U	62	U	85	UJ
Chrysene	UG/KG	19	13%	1000	0	11	84		15	U	44	U	44	U	46	U	5.9	J
Di-n-butylphthalate	UG/KG	52	5%		0	4	84		15	U	150	U	150	U	160	U	85	U
Di-n-octylphthalate	UG/KG	20	8%		0	7	84		15	U	36	U	36	U	38	U	85	UJ
Dibenz(a,h)anthracene	UG/KG	5.6	1%	330	0	1	84		45	U	42	U	42	U	44	U	85	U
Dibenzofuran	UG/KG	4.1	1%	7000	0	1	84		15	U	40	U	40	U	41	U	85	U
Dimethylphthalate	UG/KG	86	7%		0	6	84		47	J	43	U	43	U	45	U	85	U
Fluoranthene	UG/KG	88	14%	100000	0	12	85		15	U	43	U	43	U	45	U	85	U
Indeno(1,2,3-cd)pyrene	UG/KG	12	7%	500	0	6	84		45	U	40	U	40	U	41	U	85	U
Phenanthrene	UG/KG	52	15%	100000	0	13	84		15	U	44	U	44	U	46	U	6	J
Pyrene	UG/KG	64	15%	100000	0	13	85		15	U	39	U	39	U	40	U	85	U
Pesticides/PCBs																		
Aroclor-1254	UG/KG	78	2%	100	0	2	85		5.3	U	19	U	19	U	20	U	42	U
4,4'-DDD	UG/KG	8.6	2%	3.3	2	2	85		0.39	U	1.9	U	1.9	U	1.9	U	**8.6**	
4,4'-DDE	UG/KG	5.9	4%	3.3	2	3	85		0.41	U	1.9	U	1.9	U	1.9	U	4.2	U
4,4'-DDT	UG/KG	9.8	5%	3.3	3	4	85		0.48	U	1.9	U	1.9	U	1.9	U	4.2	U
Alpha-BHC	UG/KG	210	5%	20	2	4	85		0.37	U	0.92	U	0.92	U	0.96	U	2.2	U
Beta-BHC	UG/KG	63	1%	36	1	1	85		0.94	U	0.92	U	0.92	U	0.96	U	2.2	U

Attachment B Table 1
Soil Samples Considered in Updated Risk Assessment
SEAD-12 Disposal Pit C (C1 C2)

Seneca Army Depot Activity
Romulus, NY

								Area	SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
								Location_Id	S12EXSW-J-4-04		S12EXSW-J-5-01		S12EXSW-K-3-01		S12EXSW-K-4-01		MW12-14	
								Matrix	SOIL		SOIL		SOIL		SOIL		SOIL	
								Sample_Id	S12EXSW-J-4-04		S12EXSW-J-5-01		S12EXSW-K-3-01		S12EXSW-K-4-01		123099	
								Samp_Depth_Top	0		0		0		0		0	
								Samp_Depth_Bot	0.2		0		0		0		0.2	
								Sample_Date	10/15/2009		8/5/2009		8/5/2009		8/5/2009		14-Oct-98	
									SA		SA		SA		SA		SA	
		Maximum	Frequency			Number	Number	Number	RA		RA		RA		RA I PHASE 1 STEP 1 I PHA			
		Concentration	of	Action		of	of Times	of	Pit C2		Pit C2		Pit C2		Pit C2			
Parameter	**Units**	**Detected**	**Detection**	**Level (1)**		**Exceedances**	**Detected**	**Samples**	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)
Delta-BHC	UG/KG	61	4%	40		1	3	85	0.51	U	0.92	U	0.92	U	0.96	U	2.2	U
Metals																		
Aluminum	MG/KG	35100	100%			0	85	85	7400	J	12800		12400		10800		12000	J
Antimony	MG/KG	0.28	1%			0	1	68	0.34	UJ	0.5	UJ	0.5	UJ	0.5	UJ	1.4	UR
Arsenic	MG/KG	12.2	100%	13		0	85	85	5.1	J	4.3		3.3		2.7		4.3	J
Barium	MG/KG	304	100%	350		0	85	85	82	J	87.5		97.6		86.6		90.7	
Beryllium	MG/KG	1.7	96%	7.2		0	82	85	0.46	J	0.69		0.68		0.57		0.51	J
Cadmium	MG/KG	1.25	29%	2.5		0	25	85	0.13	J	0.54	U	0.54	U	0.55	U	0.07	U
Calcium	MG/KG	186000	100%			0	85	85	100000	J	46100		53600		91200		2620	J
Chromium	MG/KG	51.2	100%	30		1	85	85	12	J	19.9		21.1		18.3		16.5	
Cobalt	MG/KG	29	100%			0	85	85	8.1	J	9.4		11.1		9.2		11	
Copper	MG/KG	74.5	100%	50		2	85	85	42	J	23		24.2		20.1		14.6	
Cyanide	MG/KG	2.2	1%	27		0	1	85	0.2	UJ	0.5	U	0.42	U	0.5	U	0.68	U
Iron	MG/KG	56400	100%			0	85	85	18000	J	21800		21800		20000		23200	
Lead	MG/KG	431	100%	63		2	85	85	8.9	J	11.4	J	10.3	J	8.8	J	18.6	J
Magnesium	MG/KG	74400	100%			0	85	85	15000	J	8930	J	10600	J	10600	J	3070	J
Manganese	MG/KG	1650	100%	1600		2	85	85	390	J	582		466		480		693	
Mercury	MG/KG	0.15	76%	0.18		0	65	85	0.019	J	0.025	J	0.025	J	0.016	J	0.06	U
Nickel	MG/KG	75	95%	30		24	81	85	30	J	29.7		**34.8**		**30.1**		19.5	J
Potassium	MG/KG	5330	100%			0	85	85	1500	J	1640	J	1710	J	1720	J	1110	J
Selenium	MG/KG	2	21%	3.9		0	18	85	0.28	UJ	1.1	U	0.2	U	0.2	U	1	U
Silver	MG/KG	0.27	2%	2		0	2	85	0.22	UJ	0.3	U	0.3	U	0.3	U	0.27	U
Sodium	MG/KG	1420	91%			0	77	85	140	J	100	J	110		160		57.5	U
Thallium	MG/KG	1.7	11%			0	9	85	0.56	UJ	0.6	U	0.6	U	0.6	U	1.7	J
Vanadium	MG/KG	68	100%			0	85	85	21	J	23.1		20.7		18.1		21.8	
Zinc	MG/KG	6080	100%	109		3	85	85	61	J	53.7	J	58.2	J	44.7	J	57.6	J

Notes:
(1) Action Level presented is New York State's Unrestricted Use Soil Cleanup Objective (SCO) 6NYCRR375-6.8(a)
(Q) = Qualifier: <null space> detected; J estimated; U not detected; UJ not detected at estimated level; R rejected.
(Q) = Qualifier: UR detection limit rejected.
UG/KG = micrograms per kilogram; MG/KG = milligrams per kilogram.

Attachment B Table 1
Soil Samples Considered in Updated Risk Assessment
SEAD-12 Disposal Pit C (C1 C2)

Seneca Army Depot Activity
Romulus, NY

Area							SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12				
Location_Id							MW12-7		SS12-150		SS12-155		SS12-155		MW12-14						
Matrix							SOIL		SOIL		SOIL		SOIL		SOIL						
Sample_Id							123180		123345		123350		123479		123100						
Samp_Depth_Top							0		0		0		0		8						
Samp_Depth_Bot							0.2		0.2		0.2		0.2		10						
Sample_Date							28-Oct-98		17-Nov-98		17-Nov-98		17-Nov-98		14-Oct-98						
							SA		SA		SA		SA		SA						
		Maximum	Frequency		Number	Number	Number	SE 1 STEP 1 I		PHASE 1 STEP 1 I		PHASE 1 STEP 1 I		PHASE 1 STEP 1 I		PHASE 1 STEP 1 I		PHA			
Parameter	Units	Concentration Detected	of Detection	Action Level (1)	of Exceedances	of Times Detected	of Samples	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)				
Volatile Organic Compounds																					
Acetone	UG/KG	18	24%	50	0	20	85	7	J	7	J	13	U	8	J	14	UJ				
Carbon disulfide	UG/KG	0.85	1%		0	1	85	13	U	13	U	13	U	14	U	11	U				
Cis-1,2-Dichloroethene	UG/KG	0.45	2%	250	0	1	64														
Meta/Para Xylene	UG/KG	0.86	3%	260	0	2	64														
Methyl ethyl ketone	UG/KG	1.6	4%	120	0	3	85	13	U	13	U	13	U	14	U	11	U				
Methylene chloride	UG/KG	2.8	24%	50	0	20	85	13	U	13	U	13	U	14	U	11	U				
Styrene	UG/KG	0.61	1%		0	1	85	13	U	13	U	13	UJ	14	U	11	UJ				
Toluene	UG/KG	62	39%	700	0	33	85	13	U	13	U	13	U	14	U	11	UJ				
Trichloroethene	UG/KG	1	6%	470	0	5	85	13	U	13	U	13	U	14	U	11	UJ				
Semivolatile Organic Compounds																					
2-Methylnaphthalene	UG/KG	4.4	1%		0	1	84	85	U	84	U	82	U	81	U	72	U				
Anthracene	UG/KG	5.4	1%	100000	0	1	84	85	U	84	U	82	U	81	U	72	U				
Benzo(a)anthracene	UG/KG	16	8%	1000	0	7	84	5.4	J	9.5	J	82	U	11	J	72	U				
Benzo(a)pyrene	UG/KG	39	11%	1000	0	9	85	6.7	J	9.7	J	4.2	J	13	J	72	U				
Benzo(b)fluoranthene	UG/KG	16	11%	1000	0	9	84	7.4	J	12	J	9	J	12	J	72	U				
Benzo(ghi)perylene	UG/KG	39	12%	100000	0	10	85	7.5	J	84	U	82	U	12	J	72	UJ				
Benzo(k)fluoranthene	UG/KG	16	8%	800	0	7	84	7.7	J	9.3	J	82	U	14	J	72	U				
Benzyl alcohol	UG/KG	190	58%		0	37	64														
Bis(2-Ethylhexyl)phthalate	UG/KG	96	15%		0	13	85	85	U	84	UJ	82	UJ	81	UJ	74	UJ				
Butylbenzylphthalate	UG/KG	30	4%		0	3	84	85	U	84	UJ	82	UJ	81	UJ	72	UJ				
Carbazole	UG/KG	7.4	2%		0	2	84	85	U	84	UJ	82	UJ	6.4	J	72	UJ				
Chrysene	UG/KG	19	13%	1000	0	11	84	7.7	J	13	J	5.1	J	13	J	72	U				
Di-n-butylphthalate	UG/KG	52	5%		0	4	84	85	U	4.2	J	82	U	81	U	72	U				
Di-n-octylphthalate	UG/KG	20	8%		0	7	84	85	U	84	UJ	82	UJ	81	U	11	J				
Dibenz(a,h)anthracene	UG/KG	5.6	1%	330	0	1	84	85	U	84	U	82	U	5.6	J	72	UJ				
Dibenzofuran	UG/KG	4.1	1%	7000	0	1	84	85	U	84	U	82	U	81	U	72	U				
Dimethylphthalate	UG/KG	86	7%		0	6	84	85	U	84	U	82	U	81	U	72	U				
Fluoranthene	UG/KG	88	14%	100000	0	12	85	11	J	22	J	7.2	J	20	J	72	U				
Indeno(1,2,3-cd)pyrene	UG/KG	12	7%	500	0	6	84	6	J	84	U	82	U	12	J	72	UJ				
Phenanthrene	UG/KG	52	15%	100000	0	13	84	6.6	J	19	J	4.6	J	11	J	72	U				
Pyrene	UG/KG	64	15%	100000	0	13	85	13	J	20	J	7.5	J	15	J	72	U				
Pesticides/PCBs																					
Aroclor-1254	UG/KG	78	2%	100	0	2	85	43	U	42	U	41	U	41	U	36	U				
4,4'-DDD	UG/KG	8.6	2%	3.3	2	2	85	4.3	U	4.2	U	4.1	U	4.1	U	3.6	U				
4,4'-DDE	UG/KG	5.9	4%	3.3	2	3	85	4.3	U	4.2	U	4.1	U	4.1	U	3.6	U				
4,4'-DDT	UG/KG	9.8	5%	3.3	3	4	85	4.3	U	4.2	U	4.1	U	4.1	U	3.6	U				
Alpha-BHC	UG/KG	210	5%	20	2	4	85	2.2	U	2.2	U	2.1	U	2.1	U	1.8	U				
Beta-BHC	UG/KG	63	1%	36	1	1	85	2.2	U	2.2	U	2.1	U	2.1	U	1.8	U				

Attachment B Table 1
Soil Samples Considered in Updated Risk Assessment
SEAD-12 Disposal Pit C (C1 C2)

Seneca Army Depot Activity
Romulus, NY

Area								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12					
Location_Id								MW12-7		SS12-150		SS12-155		SS12-155		MW12-14					
Matrix								SOIL		SOIL		SOIL		SOIL		SOIL					
Sample_Id								123180		123345		123350		123479		123100					
Samp_Depth_Top								0		0		0		0		8					
Samp_Depth_Bot								0.2		0.2		0.2		0.2		10					
Sample_Date								28-Oct-98		17-Nov-98		17-Nov-98		17-Nov-98		14-Oct-98					
								SA		SA		SA		SA		SA					
		Maximum	Frequency			Number	Number	Number	SE 1 STEP 1 I		PHASE 1 STEP 1 I		PHASE 1 STEP 1 I		PHASE 1 STEP 1 I		PHASE 1 STEP 1 I		PHA		
Parameter	Units	Concentration Detected	of Detection	Action Level (1)	of Exceedances	of Times Detected	of Samples	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)				
Delta-BHC	UG/KG	61	4%	40	1	3	85	2.2	U	2.2	U	2.1	U	2.1	U	1.8	U				
Metals																					
Aluminum	MG/KG	35100	100%		0	85	85	12400		12800	J	13900	J	11600	J	6380	J				
Antimony	MG/KG	0.28	1%		0	1	68	1.6	UR	1	UR	1.2	UR	1.1	UR	1	UR				
Arsenic	MG/KG	12.2	100%	13	0	85	85	4.1		3.9	J	3.8	J	3.5	J	3.1	J				
Barium	MG/KG	304	100%	350	0	85	85	81.6		102		108		96.8		69.8					
Beryllium	MG/KG	1.7	96%	7.2	0	82	85	0.63	J	0.52	J	0.47	J	0.45	J	0.23	J				
Cadmium	MG/KG	1.25	29%	2.5	0	25	85	0.46	U	0.3	U	0.36	U	0.31	U	0.05	U				
Calcium	MG/KG	186000	100%		0	85	85	3720		16200		4400		3960		96500	J				
Chromium	MG/KG	51.2	100%	30	1	85	85	16.5	J	16.4		17.7		15.4		11.4					
Cobalt	MG/KG	29	100%		0	85	85	9	J	7.7	J	8.6	J	8.2	J	7	J				
Copper	MG/KG	74.5	100%	50	2	85	85	15.7		16.1		15.8		15.2		16.7					
Cyanide	MG/KG	2.2	1%	27	0	1	85	0.66	U	0.66	U	0.64	U	0.61	U	0.57	U				
Iron	MG/KG	56400	100%		0	85	85	20300		20300	J	21700	J	20400	J	15500					
Lead	MG/KG	431	100%	63	2	85	85	16	J	15		14		14		6.7	J				
Magnesium	MG/KG	74400	100%		0	85	85	3200		5130		3640		3190		21000	J				
Manganese	MG/KG	1650	100%	1600	2	85	85	640		502		690		607		385					
Mercury	MG/KG	0.15	76%	0.18	0	65	85	0.06	U	0.05	U	0.06	U	0.06	U	0.05	U				
Nickel	MG/KG	75	95%	30	24	81	85	17.2	UJ	18.7		19.6		18.3	J	19.3	J				
Potassium	MG/KG	5330	100%		0	85	85	1280		1500		1510		1030		1200					
Selenium	MG/KG	2	21%	3.9	0	18	85	0.84	J	0.43	J	0.9	J	0.65	J	0.77	U				
Silver	MG/KG	0.27	2%	2	0	2	85	0.31	U	0.2	U	0.24	U	0.21	U	0.23	J				
Sodium	MG/KG	1420	91%		0	77	85	64.2	U	72.3	J	50.6	U	43.8	U	113	J				
Thallium	MG/KG	1.7	11%		0	9	85	1.3	U	0.88	U	1	U	0.9	U	1.2	J				
Vanadium	MG/KG	68	100%		0	85	85	21.8		21.8		22.5		19.1		11.8					
Zinc	MG/KG	6080	100%	109	3	85	85	54.2	J	52.5	J	58.2	J	51.4	J	33.5	J				

Notes:
(1) Action Level presented is New York State's Unrestricted Use Soil Cleanup Objective (SCO) 6NYCRR375-6.8(a)
(Q) = Qualifier: <null space> detected; J estimated; U not detected; UJ not detected at estimated level; R rejected.
(Q) = Qualifier: UR detection limit rejected.
UG/KG = micrograms per kilogram; MG/KG = milligrams per kilogram.

Attachment B Table 1
Soil Samples Considered in Updated Risk Assessment
SEAD-12 Disposal Pit C (C1 C2)

Seneca Army Depot Activity
Romulus, NY

Area							SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12				
Location_Id							MW12-14		MW12-15		MW12-33		MW12-33		MW12-34						
Matrix							SOIL		SOIL		SOIL		SOIL		SOIL						
Sample_Id							123101		123030		123196		123197		123200						
Samp_Depth_Top							10		8		6		10		10						
Samp_Depth_Bot							12		10		8		0		12						
Sample_Date							14-Oct-98		01-Oct-98		31-Oct-98		31-Oct-98		31-Oct-98						
							SA		SA		SA		SA		SA						
		Maximum	Frequency		Number	Number	Number	SE 1 STEP 1 I		PHASE 1 STEP 1 I		PHASE 1 STEP 1 I		PHASE 1 STEP 1 I		PHASE 1 STEP 1 I		PHA			
Parameter	Units	Concentration Detected	of Detection	Action Level (1)	of Exceedances	of Times Detected	of Samples	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)				
Volatile Organic Compounds																					
Acetone	UG/KG	18	24%	50	0	20	85	14	UJ	11	UJ	15		10	J	9	J				
Carbon disulfide	UG/KG	0.85	1%		0	1	85	11	UJ	11	U	11	U	11	UJ	11	U				
Cis-1,2-Dichloroethene	UG/KG	0.45	2%	250	0	1	64														
Meta/Para Xylene	UG/KG	0.86	3%	260	0	2	64														
Methyl ethyl ketone	UG/KG	1.6	4%	120	0	3	85	11	UJ	11	U	11	U	11	UJ	11	U				
Methylene chloride	UG/KG	2.8	24%	50	0	20	85	11	UJ	11	U	11	U	11	UJ	11	U				
Styrene	UG/KG	0.61	1%		0	1	85	11	UJ	11	UJ	11	U	11	UJ	11	U				
Toluene	UG/KG	62	39%	700	0	33	85	7	J	62		11	U	11	UJ	11	U				
Trichloroethene	UG/KG	1	6%	470	0	5	85	11	UJ	11	U	11	U	11	UJ	11	U				
Semivolatile Organic Compounds																					
2-Methylnaphthalene	UG/KG	4.4	1%		0	1	84	73	U	72	UJ	74	U	72	U	72	U				
Anthracene	UG/KG	5.4	1%	100000	0	1	84	73	U	72	U	74	U	72	U	72	U				
Benzo(a)anthracene	UG/KG	16	8%	1000	0	7	84	73	U	72	U	74	U	6.3	J	72	U				
Benzo(a)pyrene	UG/KG	39	11%	1000	0	9	85	73	U	72	U	74	U	8.8	J	72	U				
Benzo(b)fluoranthene	UG/KG	16	11%	1000	0	9	84	73	U	72	U	74	U	12	J	72	U				
Benzo(ghi)perylene	UG/KG	39	12%	100000	0	10	85	73	UJ	72	U	4.3	J	8.1	J	5	J				
Benzo(k)fluoranthene	UG/KG	16	8%	800	0	7	84	73	U	72	U	74	U	10	J	72	U				
Benzyl alcohol	UG/KG	190	58%		0	37	64														
Bis(2-Ethylhexyl)phthalate	UG/KG	96	15%		0	13	85	73	UJ	14	J	74	U	100	U	130	U				
Butylbenzylphthalate	UG/KG	30	4%		0	3	84	73	UJ	72	U	74	U	72	U	72	U				
Carbazole	UG/KG	7.4	2%		0	2	84	73	UJ	72	U	74	UJ	72	UJ	72	U				
Chrysene	UG/KG	19	13%	1000	0	11	84	73	U	72	UJ	74	U	13	J	9.2	J				
Di-n-butylphthalate	UG/KG	52	5%		0	4	84	73	U	10	J	74	U	72	U	72	U				
Di-n-octylphthalate	UG/KG	20	8%		0	7	84	9.1	J	8.4	J	74	U	15	J	20	J				
Dibenz(a,h)anthracene	UG/KG	5.6	1%	330	0	1	84	73	UJ	72	U	74	U	72	U	72	U				
Dibenzofuran	UG/KG	4.1	1%	7000	0	1	84	73	U	72	U	74	U	72	U	72	U				
Dimethylphthalate	UG/KG	86	7%		0	6	84	73	U	72	U	74	U	72	U	72	U				
Fluoranthene	UG/KG	88	14%	100000	0	12	85	73	U	72	U	74	U	11	J	72	U				
Indeno(1,2,3-cd)pyrene	UG/KG	12	7%	500	0	6	84	73	UJ	72	U	74	U	6.3	J	72	U				
Phenanthrene	UG/KG	52	15%	100000	0	13	84	73	U	72	U	74	U	6.8	J	4.6	J				
Pyrene	UG/KG	64	15%	100000	0	13	85	73	U	72	U	74	U	17	J	7	J				
Pesticides/PCBs																					
Aroclor-1254	UG/KG	78	2%	100	0	2	85	37	U	36	U	37	U	36	U	36	U				
4,4'-DDD	UG/KG	8.6	2%	3.3	2	2	85	3.7	U	3.6	U	3.7	U	3.6	U	3.6	U				
4,4'-DDE	UG/KG	5.9	4%	3.3	2	3	85	3.7	U	3.6	U	3.7	U	3.6	U	3.6	U				
4,4'-DDT	UG/KG	9.8	5%	3.3	3	4	85	3.7	U	3.6	U	3.7	U	3.6	U	3.6	U				
Alpha-BHC	UG/KG	210	5%	20	2	4	85	1.9	U	1.8	U	1.9	U	1.9	U	1.9	U				
Beta-BHC	UG/KG	63	1%	36	1	1	85	1.9	U	1.8	U	1.9	U	1.9	U	1.9	U				

Attachment B Table 1
Soil Samples Considered in Updated Risk Assessment
SEAD-12 Disposal Pit C (C1 C2)

Seneca Army Depot Activity
Romulus, NY

Area								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12					
Location_Id								MW12-14		MW12-15		MW12-33		MW12-33		MW12-34					
Matrix								SOIL		SOIL		SOIL		SOIL		SOIL					
Sample_Id								123101		123030		123196		123197		123200					
Samp_Depth_Top								10		8		6		10		10					
Samp_Depth_Bot								12		10		8		0		12					
Sample_Date								14-Oct-98		01-Oct-98		31-Oct-98		31-Oct-98		31-Oct-98					
								SA		SA		SA		SA		SA					
		Maximum	Frequency			Number	Number	Number	SE 1 STEP 1 I PHASE 1 STEP 1 I PHASE 1 STEP 1 I PHASE 1 STEP 1 I PHASE 1 STEP 1 I PHA														
Parameter	Units	Concentration Detected	of Detection	Action Level (1)	of Exceedances	of Times Detected	of Samples	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)				
Delta-BHC	UG/KG	61	4%	40	1	3	85	1.9	U	1.8	U	1.9	U	1.9	U	1.9	U				
Metals																					
Aluminum	MG/KG	35100	100%		0	85	85	5990	J	5330		8690		6170		6930					
Antimony	MG/KG	0.28	1%		0	1	68	0.83	UR	1.1	UR	1.1	UR	1.1	UJ	0.95	UJ				
Arsenic	MG/KG	12.2	100%	13	0	85	85	3.1	J	1.9		3.3		2.1		2.5					
Barium	MG/KG	304	100%	350	0	85	85	76.7		63		74.7		90.8		76.8					
Beryllium	MG/KG	1.7	96%	7.2	0	82	85	0.23	J	0.18	J	0.47	J	0.32	J	0.29	J				
Cadmium	MG/KG	1.25	29%	2.5	0	25	85	0.04	U	0.05	U	0.32	U	0.05	U	0.05	U				
Calcium	MG/KG	186000	100%		0	85	85	84000	J	65000	J	94800		65100		72700					
Chromium	MG/KG	51.2	100%	30	1	85	85	11		9.1		14.2	J	10.7		13.4					
Cobalt	MG/KG	29	100%		0	85	85	8	J	6.1	J	10.5		6.8	J	9.8					
Copper	MG/KG	74.5	100%	50	2	85	85	15.2		13.4		22.1		19		24.3					
Cyanide	MG/KG	2.2	1%	27	0	1	85	0.57	U	0.55	UJ	0.61	U	0.55	U	0.57	U				
Iron	MG/KG	56400	100%		0	85	85	15300		12400		17600	J	15400	J	18100	J				
Lead	MG/KG	431	100%	63	2	85	85	6	J	3.8	J	5.2	J	8	J	12.1	J				
Magnesium	MG/KG	74400	100%		0	85	85	21200	J	19700		20200		16800		14200					
Manganese	MG/KG	1650	100%	1600	2	85	85	359		341		493		312	J	377	J				
Mercury	MG/KG	0.15	76%	0.18	0	65	85	0.05	U	0.05	U	0.06	U	0.06	U	0.05	U				
Nickel	MG/KG	75	95%	30	24	81	85	21.4	J	15.6		23.3	UJ	20.9		29.3					
Potassium	MG/KG	5330	100%		0	85	85	1110		979		1830		1080		893					
Selenium	MG/KG	2	21%	3.9	0	18	85	0.63	U	0.82	UJ	0.41	U	0.8	UJ	1.5	J				
Silver	MG/KG	0.27	2%	2	0	2	85	0.16	U	0.21	U	0.21	U	0.21	U	0.19	U				
Sodium	MG/KG	1420	91%		0	77	85	113	J	93.4	J	79.7	J	43.8	U	64.9	J				
Thallium	MG/KG	1.7	11%		0	9	85	0.92	J	1.2	U	0.98	J	1.3	J	1.3	J				
Vanadium	MG/KG	68	100%		0	85	85	10.9		10.1		15.7		11.7		12.8					
Zinc	MG/KG	6080	100%	109	3	85	85	38.9	J	29.6		51.1	J	41	J	85.4	J				

Notes:
(1) Action Level presented is New York State's Unrestricted Use Soil Cleanup Objective (SCO) 6NYCRR375-6.8(a)
(Q) = Qualifier: <null space> detected; J estimated; U not detected; UJ not detected at estimated level; R rejected.
(Q) = Qualifier: UR detection limit rejected.
UG/KG = micrograms per kilogram; MG/KG = milligrams per kilogram.

Attachment B Table 1
Soil Samples Considered in Updated Risk Assessment
SEAD-12 Disposal Pit C (C1 C2)

Seneca Army Depot Activity
Romulus, NY

Area								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12					
Location_Id								MW12-7		MW12-7		TP12-5C		TP12-6A		TP12-6B					
Matrix								SOIL		SOIL		SOIL		SOIL		SOIL					
Sample_Id								123181		123182		123091		123158		123159					
Samp_Depth_Top								4		8		8		2.5		3					
Samp_Depth_Bot								6		10		8		2.5		3					
Sample_Date								28-Oct-98		28-Oct-98		13-Oct-98		17-Oct-98		17-Oct-98					
								SA		SA		SA		SA		SA					
		Maximum	Frequency		Number	Number	Number	SE 1 STEP 1 I		PHASE 1 STEP 1 I		PHASE 1 STEP 1 I		PHASE 1 STEP 1 I		PHASE 1 STEP 1 I		PHA			
Parameter	Units	Concentration Detected	of Detection	Action Level (1)	of Exceedances	of Times Detected	of Samples	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)				
Volatile Organic Compounds																					
Acetone	UG/KG	18	24%	50	0	20	85	6	J	5	J	11	U	13	U	16	UJ				
Carbon disulfide	UG/KG	0.85	1%		0	1	85	12	U	11	U	11	U	13	U	16	U				
Cis-1,2-Dichloroethene	UG/KG	0.45	2%	250	0	1	64														
Meta/Para Xylene	UG/KG	0.86	3%	260	0	2	64														
Methyl ethyl ketone	UG/KG	1.6	4%	120	0	3	85	12	U	11	U	11	U	13	U	16	UJ				
Methylene chloride	UG/KG	2.8	24%	50	0	20	85	12	U	11	U	11	U	13	U	16	U				
Styrene	UG/KG	0.61	1%		0	1	85	12	U	11	U	11	U	13	U	16	U				
Toluene	UG/KG	62	39%	700	0	33	85	12	U	11	U	11	U	13	U	16	U				
Trichloroethene	UG/KG	1	6%	470	0	5	85	12	U	11	U	11	U	13	U	16	U				
Semivolatile Organic Compounds																					
2-Methylnaphthalene	UG/KG	4.4	1%		0	1	84	76	U	72	U	74	U	85	U	84	U				
Anthracene	UG/KG	5.4	1%	100000	0	1	84	76	U	72	U	74	U	85	U	84	U				
Benzo(a)anthracene	UG/KG	16	8%	1000	0	7	84	76	U	72	U	74	U	85	U	15	J				
Benzo(a)pyrene	UG/KG	39	11%	1000	0	9	85	76	U	72	U	74	UJ	85	U	15	J				
Benzo(b)fluoranthene	UG/KG	16	11%	1000	0	9	84	76	U	72	U	74	U	5.1	J	16	J				
Benzo(ghi)perylene	UG/KG	39	12%	100000	0	10	85	76	U	72	U	74	U	4.9	J	13	J				
Benzo(k)fluoranthene	UG/KG	16	8%	800	0	7	84	76	U	72	U	74	U	85	U	16	J				
Benzyl alcohol	UG/KG	190	58%		0	37	64														
Bis(2-Ethylhexyl)phthalate	UG/KG	96	15%		0	13	85	76	U	72	U	74	U	12	J	13	J				
Butylbenzylphthalate	UG/KG	30	4%		0	3	84	76	U	72	U	74	U	15	J	27	J				
Carbazole	UG/KG	7.4	2%		0	2	84	76	U	72	U	74	U	85	U	84	U				
Chrysene	UG/KG	19	13%	1000	0	11	84	76	U	72	U	74	U	5.2	J	19	J				
Di-n-butylphthalate	UG/KG	52	5%		0	4	84	76	U	72	U	74	U	640	UJ	850	UJ				
Di-n-octylphthalate	UG/KG	20	8%		0	7	84	14	J	6.9	J	74	U	85	U	84	U				
Dibenz(a,h)anthracene	UG/KG	5.6	1%	330	0	1	84	76	U	72	U	74	U	85	U	84	U				
Dibenzofuran	UG/KG	4.1	1%	7000	0	1	84	76	U	72	U	74	U	85	U	84	U				
Dimethylphthalate	UG/KG	86	7%		0	6	84	76	U	72	U	74	U	85	U	84	U				
Fluoranthene	UG/KG	88	14%	100000	0	12	85	76	U	72	U	74	U	7.7	J	31	J				
Indeno(1,2,3-cd)pyrene	UG/KG	12	7%	500	0	6	84	76	U	72	U	74	U	85	U	9.4	J				
Phenanthrene	UG/KG	52	15%	100000	0	13	84	76	U	72	U	74	U	5	J	13	J				
Pyrene	UG/KG	64	15%	100000	0	13	85	76	U	72	U	74	U	8.2	J	30	J				
Pesticides/PCBs																					
Aroclor-1254	UG/KG	78	2%	100	0	2	85	38	U	36	U	37	UJ	42	U	42	U				
4,4'-DDD	UG/KG	8.6	2%	3.3	2	2	85	3.8	U	3.6	U	3.7	UJ	4.2	U	4.2	U				
4,4'-DDE	UG/KG	5.9	4%	3.3	2	3	85	3.8	U	3.6	U	3.7	UJ	4.2	U	4.2	U				
4,4'-DDT	UG/KG	9.8	5%	3.3	3	4	85	3.8	U	3.6	U	3.7	UJ	4.2	U	3.4	J				
Alpha-BHC	UG/KG	210	5%	20	2	4	85	2	U	1.8	U	1.9	UJ	2.2	U	2.2	U				
Beta-BHC	UG/KG	63	1%	36	1	1	85	2	U	1.8	U	1.9	UJ	2.2	U	2.2	U				

Attachment B Table 1
Soil Samples Considered in Updated Risk Assessment
SEAD-12 Disposal Pit C (C1 C2)

Seneca Army Depot Activity
Romulus, NY

Area								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12					
Location_Id								MW12-7		MW12-7		TP12-5C		TP12-6A		TP12-6B					
Matrix								SOIL		SOIL		SOIL		SOIL		SOIL					
Sample_Id								123181		123182		123091		123158		123159					
Samp_Depth_Top								4		8		8		2.5		3					
Samp_Depth_Bot								6		10		8		2.5		3					
Sample_Date								28-Oct-98		28-Oct-98		13-Oct-98		17-Oct-98		17-Oct-98					
								SA		SA		SA		SA		SA					
		Maximum	Frequency			Number	Number	Number	SE 1 STEP 1 I PHASE 1 STEP 1 I PHASE 1 STEP 1 I PHASE 1 STEP 1 I PHASE 1 STEP 1 I PHA													
Parameter	Units	Concentration Detected	of Detection	Action Level (1)	of Exceedances	of Times Detected	of Samples	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)				
Delta-BHC	UG/KG	61	4%	40	1	3	85	2	U	1.8	U	1.9	UJ	2.2	U	2.2	U				
Metals																					
Aluminum	MG/KG	35100	100%		0	85	85	7400		7700		7130		11300		7180					
Antimony	MG/KG	0.28	1%		0	1	68	1.2	UR	0.89	UR	1.2	UR	1.3	UR	1	UR				
Arsenic	MG/KG	12.2	100%	13	0	85	85	3		3.3		3.3		4.3		4.1					
Barium	MG/KG	304	100%	350	0	85	85	62.7		68.2		77.5		82.2		63.2					
Beryllium	MG/KG	1.7	96%	7.2	0	82	85	0.39	J	0.38	J	0.26	J	0.47	J	0.31	J				
Cadmium	MG/KG	1.25	29%	2.5	0	25	85	0.35	U	0.26	U	0.06	U	0.07	U	0.05	U				
Calcium	MG/KG	186000	100%		0	85	85	72400		62500		91300	J	24600		114000					
Chromium	MG/KG	51.2	100%	30	1	85	85	12.4	J	13.3	J	12		16.5		11.2					
Cobalt	MG/KG	29	100%		0	85	85	8.2	J	8.4		10.5		10.2	J	8.5	J				
Copper	MG/KG	74.5	100%	50	2	85	85	19.4		18.5		20		20.3		18.5					
Cyanide	MG/KG	2.2	1%	27	0	1	85	0.58	U	0.54	U	0.56	U	0.67	U	0.64	U				
Iron	MG/KG	56400	100%		0	85	85	16500		17200		16100	J	22700		14600					
Lead	MG/KG	431	100%	63	2	85	85	5	J	4.7	J	8.1		15.4	J	15.1	J				
Magnesium	MG/KG	74400	100%		0	85	85	15300		13800		15500		6520		9930					
Manganese	MG/KG	1650	100%	1600	2	85	85	378		387		423		545		314					
Mercury	MG/KG	0.15	76%	0.18	0	65	85	0.05	U	0.05	U	0.1	J	0.06	U	0.06	U				
Nickel	MG/KG	75	95%	30	24	81	85	21.7	UJ	21.3	UJ	25.5		24.1		21.2					
Potassium	MG/KG	5330	100%		0	85	85	1160		1290		1290		978	J	920					
Selenium	MG/KG	2	21%	3.9	0	18	85	0.45	U	0.34	U	0.89	U	1	UJ	0.78	UJ				
Silver	MG/KG	0.27	2%	2	0	2	85	0.23	U	0.18	U	0.23	U	0.27	U	0.2	U				
Sodium	MG/KG	1420	91%		0	77	85	75.1	J	103	J	148	J	55.7	U	42.9	U				
Thallium	MG/KG	1.7	11%		0	9	85	1.2	J	1.3	J	1	U	1.1	U	0.89	U				
Vanadium	MG/KG	68	100%		0	85	85	13.6		13.6		12.8		19.7		17.5					
Zinc	MG/KG	6080	100%	109	3	85	85	49.6	J	50.5	J	53.1	J	59		61.5					

Notes:
(1) Action Level presented is New York State's Unrestricted Use Soil Cleanup Objective (SCO) 6NYCRR375-6.8(a)
(Q) = Qualifier: <null space> detected; J estimated; U not detected; UJ not detected at estimated level; R rejected.
(Q) = Qualifier: UR detection limit rejected.
UG/KG = micrograms per kilogram; MG/KG = milligrams per kilogram.

Attachment B Table 1
Soil Samples Considered in Updated Risk Assessment
SEAD-12 Disposal Pit C (C1 C2)

Seneca Army Depot Activity
Romulus, NY

Area								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12			
Location_Id								TP12-6C		TP12A-6		TP12A-8		TP12-23B		TP12-23C					
Matrix								SOIL		SOIL		SOIL		SOIL		SOIL					
Sample_Id								123160		TP12A-6-2		TP12A-8-1		123140		123141					
Samp_Depth_Top								3.5		7		7		2		3					
Samp_Depth_Bot								3.5		7		7		2		3					
Sample_Date								17-Oct-98		23-Jun-94		24-Jun-94		17-Oct-98		17-Oct-98					
								SA		SA		SA		SA		SA					
		Maximum	Frequency		Number	Number	Number	SE 1 STEP 1		ESI		ESI I PHASE 1 STEP 1		I PHASE 1 STEP 1							
Parameter	Units	Concentration Detected	of Detection	Action Level (1)	of Exceedances	of Times Detected	of Samples	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)				
Volatile Organic Compounds																					
Acetone	UG/KG	18	24%	50	0	20	85	13	UJ	11	U	11	U	18		12	U				
Carbon disulfide	UG/KG	0.85	1%		0	1	85	13	U	11	U	11	U	11	U	12	U				
Cis-1,2-Dichloroethene	UG/KG	0.45	2%	250	0	1	64														
Meta/Para Xylene	UG/KG	0.86	3%	260	0	2	64														
Methyl ethyl ketone	UG/KG	1.6	4%	120	0	3	85	13	UJ	11	U	11	U	11	U	12	U				
Methylene chloride	UG/KG	2.8	24%	50	0	20	85	13	U	11	U	11	U	11	U	12	U				
Styrene	UG/KG	0.61	1%		0	1	85	13	U	11	U	11	U	11	U	12	U				
Toluene	UG/KG	62	39%	700	0	33	85	13	U	11	U	11	U	11	U	12	U				
Trichloroethene	UG/KG	1	6%	470	0	5	85	13	U	11	U	11	U	11	U	12	U				
Semivolatile Organic Compounds																					
2-Methylnaphthalene	UG/KG	4.4	1%		0	1	84	78	U	370	U	370	U	4.4	J	770	UR				
Anthracene	UG/KG	5.4	1%	100000	0	1	84	78	U	370	U	370	U	5.4	J	770	UR				
Benzo(a)anthracene	UG/KG	16	8%	1000	0	7	84	7.4	J	370	U	370	U	16	J	770	UR				
Benzo(a)pyrene	UG/KG	39	11%	1000	0	9	85	7.8	J	370	U	370	U	13	J	39	J				
Benzo(b)fluoranthene	UG/KG	16	11%	1000	0	9	84	11	J	370	U	370	U	14	J	770	UR				
Benzo(ghi)perylene	UG/KG	39	12%	100000	0	10	85	9.7	J	370	U	370	U	11	J	39	J				
Benzo(k)fluoranthene	UG/KG	16	8%	800	0	7	84	8.6	J	370	U	370	U	12	J	770	UR				
Benzyl alcohol	UG/KG	190	58%		0	37	64														
Bis(2-Ethylhexyl)phthalate	UG/KG	96	15%		0	13	85	16	J	370	U	370	U	5	J	770	UJ				
Butylbenzylphthalate	UG/KG	30	4%		0	3	84	30	J	370	U	370	U	76	U	770	UR				
Carbazole	UG/KG	7.4	2%		0	2	84	78	U	370	U	370	U	7.4	J	770	UR				
Chrysene	UG/KG	19	13%	1000	0	11	84	11	J	370	U	370	U	17	J	770	UR				
Di-n-butylphthalate	UG/KG	52	5%		0	4	84	680	UJ	32	J	52	J	440	UJ	770	UR				
Di-n-octylphthalate	UG/KG	20	8%		0	7	84	78	U	370	U	370	U	76	U	770	UR				
Dibenz(a,h)anthracene	UG/KG	5.6	1%	330	0	1	84	78	U	370	U	370	U	76	U	770	UR				
Dibenzofuran	UG/KG	4.1	1%	7000	0	1	84	78	U	370	U	370	U	4.1	J	770	UR				
Dimethylphthalate	UG/KG	86	7%		0	6	84	78	U	370	U	370	U	76	U	770	UR				
Fluoranthene	UG/KG	88	14%	100000	0	12	85	17	J	370	U	370	U	36	J	88	J				
Indeno(1,2,3-cd)pyrene	UG/KG	12	7%	500	0	6	84	7.6	J	370	U	370	U	8.7	J	770	UR				
Phenanthrene	UG/KG	52	15%	100000	0	13	84	8.3	J	370	U	370	U	30	J	770	UR				
Pyrene	UG/KG	64	15%	100000	0	13	85	16	J	370	U	370	U	32	J	52	J				
Pesticides/PCBs																					
Aroclor-1254	UG/KG	78	2%	100	0	2	85	39	U	37	U	37	U	38	U	38	U				
4,4'-DDD	UG/KG	8.6	2%	3.3	2	2	85	3.9	U	3.7	U	3.7	U	3.8	U	3.8	U				
4,4'-DDE	UG/KG	5.9	4%	3.3	2	3	85	3.9	U	3.7	U	3.7	U	3.8	U	3.8	U				
4,4'-DDT	UG/KG	9.8	5%	3.3	3	4	85	3.9	U	3.7	U	3.7	U	3.8	U	3.8	U				
Alpha-BHC	UG/KG	210	5%	20	2	4	85	2	U	1.9	U	1.9	U	2	U	2	U				
Beta-BHC	UG/KG	63	1%	36	1	1	85	2	U	1.9	U	1.9	U	2	U	2	U				

Attachment B Table 1
Soil Samples Considered in Updated Risk Assessment
SEAD-12 Disposal Pit C (C1 C2)

Seneca Army Depot Activity
Romulus, NY

								Area		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
								Location_Id		TP12-6C		TP12A-6		TP12A-8		TP12-23B		TP12-23C			
								Matrix		SOIL		SOIL		SOIL		SOIL		SOIL			
								Sample_Id		123160		TP12A-6-2		TP12A-8-1		123140		123141			
								Samp_Depth_Top		3.5		7		7		2		3			
								Samp_Depth_Bot		3.5		7		7		2		3			
								Sample_Date		17-Oct-98		23-Jun-94		24-Jun-94		17-Oct-98		17-Oct-98			
										SA		SA		SA		SA		SA			
		Maximum	Frequency			Number	Number	Number	SE 1 STEP 1			ESI		ESI I PHASE 1 STEP 1		I PHASE 1 STEP 1					
Parameter	**Units**	**Concentration Detected**	**of Detection**	**Action Level (1)**		**of Exceedances**	**of Times Detected**	**of Samples**	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)	Value	(Q)		
Delta-BHC	UG/KG	61	4%	40		1	3	85	2	U	1.9	U	1.9	U	2	U	2	U		
Metals																				
Aluminum	MG/KG	35100	100%			0	85	85	7690		8460		6610		11000		11000			
Antimony	MG/KG	0.28	1%			0	1	68	1.4	UR	0.28	J	0.26	UJ	1	UR	1.3	UR		
Arsenic	MG/KG	12.2	100%	13		0	85	85	3.8		2.9		3.1		6.7		3.9			
Barium	MG/KG	304	100%	350		0	85	85	62.2		76.2		67.4		77.3		73			
Beryllium	MG/KG	1.7	96%	7.2		0	82	85	0.35	J	0.4	J	0.31	J	0.33	J	0.43	J		
Cadmium	MG/KG	1.25	29%	2.5		0	25	85	0.07	U	0.35	J	0.5	J	0.05	U	0.06	U		
Calcium	MG/KG	186000	100%			0	85	85	138000		62000	J	86700	J	90700		32100			
Chromium	MG/KG	51.2	100%	30		1	85	85	13.1		14		10.6		16.4		29.7			
Cobalt	MG/KG	29	100%			0	85	85	7.8	J	6.8	J	7.1	J	7.9	J	11.5			
Copper	MG/KG	74.5	100%	50		2	85	85	19.3		16.4		17.7		16.2		**74.5**			
Cyanide	MG/KG	2.2	1%	27		0	1	85	0.62	U	0.48	U	0.49	U	0.59	U	2.2			
Iron	MG/KG	56400	100%			0	85	85	17400		17100		14400		18000		51000			
Lead	MG/KG	431	100%	63		2	85	85	14.8	J	**431**	J	12.3	J	9.3		**90.9**	J		
Magnesium	MG/KG	74400	100%			0	85	85	13500		11600		36100		25100		9450			
Manganese	MG/KG	1650	100%	1600		2	85	85	359		358		326		497		331			
Mercury	MG/KG	0.15	76%	0.18		0	65	85	0.09	J	0.03	J	0.02	J	0.05	U	0.15	J		
Nickel	MG/KG	75	95%	30		24	81	85	22.6		22		18.9		20.7		**36.9**			
Potassium	MG/KG	5330	100%			0	85	85	977	J	1700	J	1480	J	1330		1940			
Selenium	MG/KG	2	21%	3.9		0	18	85	1.1	UJ	0.48	U	0.54	U	0.78	UJ	0.99	UJ		
Silver	MG/KG	0.27	2%	2		0	2	85	0.28	U	0.09	U	0.1	U	0.2	U	0.27	J		
Sodium	MG/KG	1420	91%			0	77	85	82.5	J	95	J	112	J	42.5	U	1420			
Thallium	MG/KG	1.7	11%			0	9	85	1.2	U	0.34	U	0.38	U	1.1	J	1.1	U		
Vanadium	MG/KG	68	100%			0	85	85	14.6		14.1		11		17.7		17.6			
Zinc	MG/KG	6080	100%	109		3	85	85	94.5		53.8		42.6		69.6		**6080**			

Notes:
(1) Action Level presented is New York State's Unrestricted Use Soil Cleanup Objective (SCO) 6NYCRR375-6.8(a)
(Q) = Qualifier: <null space> detected; J estimated; U not detected; UJ not detected at estimated level; R rejected.
(Q) = Qualifier: UR detection limit rejected.
UG/KG = micrograms per kilogram; MG/KG = milligrams per kilogram.

ATTACHMENT B TABLE 2
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN IN SEAD-12 PIT C SOIL (UPDATED)
SEAD-12 Updated Risk Assessment
Seneca Army Depot Activity

Scenario Time frame:	Cuurent/Future
Medium:	Soil
Exposure Medium:	Soil
Exposure Point:	SEAD-12 Pit C

CAS Number	Chemical	Minimum Detected Concentration [2] (mg/kg)	Q	Maximum Detected Concentration [2] (mg/kg)	Q	Location of Maximum Concentration	Detection Frequency [1,2]	Range of Reporting Limits [2] (mg/kg)	Concentration Used for Screening [3] (mg/kg)	Screening Value [5] (mg/kg)	Potential ARAR/TBC Source	ARAR / TBC Value [6] (mg/kg)	COPC Flag	Rationale for Contaminant Deletion or Selection [7]	Background Value [4] (mg/kg)
VOC															
67-64-1	Acetone	0.0022	J	0.0096	J	S12EXPR-K-4-01	12 / 72	0.0017 - 0.07	0.0096	6100	NYSDEC Subpart 375-6	50	NO	BSL	--
75-15-0	Carbon disulfide	0.00085	J	0.00085	J	S12EXFL-I-3-02	1 / 72	0.00051 - 0.016	0.00085	82			NO	BSL	--
156-59-2	Cis-1,2-Dichloroethene	0.00045	J	0.00045	J	S12EXFL-I-3-02	1 / 59	0.00023 - 0.0011	0.00045	16	NYSDEC Subpart 375-6	250	NO	BSL	--
SA0078	Meta/Para Xylene	0.00075	J	0.00086	J	S12EXPR-D-2-01	2 / 59	0.00065 - 0.0033	0.00086	59	NYSDEC Subpart 375-6	260	NO	BSL	--
78-93-3	Methyl ethyl ketone	0.00086	J	0.0016	J	S12EXPR-K-4-01	3 / 72	0.00076 - 0.023	0.0016	2800	NYSDEC Subpart 375-6	120	NO	BSL	--
75-09-2	Methylene chloride	0.00035	J	0.0028	J	S12EXSW-I-2-02	21 / 72	0.00039 - 0.016	0.0028	11	NYSDEC Subpart 375-6	50	NO	BSL	--
100-42-5	Styrene	0.00061	J	0.00061	J	S12EXSW-J-4-04	1 / 72	0.00029 - 0.016	0.00061	630			NO	BSL	--
108-88-3	Toluene	0.00031	J	0.0033	J	S12EXSW-B-2-01	30 / 72	0.00033 - 0.016	0.0033	500	NYSDEC Subpart 375-6	700	NO	BSL	--
79-01-6	Trichloroethene	0.00048	J	0.001	J	S12EXPR-J-4-03	5 / 72	0.0004 - 0.016	0.001	2.8	NYSDEC Subpart 375-6	470	NO	BSL	--
SVOC															
120-12-7	Anthracene	0.043	J	0.043	J	TP12A-7	1 / 71	0.015 - 0.37	0.043	1700	NYSDEC Subpart 375-6	100000	NO	BSL	--
56-55-3	Benzo(a)anthracene	0.0074	J	0.15	J	TP12A-7	5 / 71	0.015 - 0.37	0.15	0.15	NYSDEC Subpart 375-6	1000	YES	ASL	--
50-32-8	Benzo(a)pyrene	0.0042	J	0.18	J	TP12A-7	7 / 72	0.015 - 0.37	0.18	0.015	NYSDEC Subpart 375-6	1000	YES	ASL	--
205-99-2	Benzo(b)fluoranthene	0.0051	J	0.32	J	TP12A-7	7 / 71	0.015 - 0.37	0.32	0.15	NYSDEC Subpart 375-6	1000	YES	ASL	--
191-24-2	Benzo(ghi)perylene	0.0049	J	0.098	J	TP12A-7	6 / 72	0.044 - 0.51	0.098		NYSDEC Subpart 375-6	100000		NSV	--
207-08-9	Benzo(k)fluoranthene	0.0086	J	0.016	J	TP12-6B	4 / 71	0.015 - 0.54	0.016	1.5	NYSDEC Subpart 375-6	800	NO	BSL	--
100-51-6	Benzyl alcohol	0.036	J	0.14	J	S12EXSW-B-2-01	31 / 59	0.015 - 0.42	0.14	610			NO	BSL	--
117-81-7	Bis(2-Ethylhexyl)phthalate	0.012	J	0.096	J	S12EXPR-D-1-01	11 / 72	0.015 - 0.77	0.096	35			NO	BSL	--
85-68-7	Butylbenzylphthalate	0.015	J	0.03	J	TP12-6C	3 / 71	0.015 - 0.54	0.03	260			NO	BSL	--
86-74-8	Carbazole	0.0064	J	0.0064	J	SS12-155	1 / 71	0.015 - 0.54	0.0064					NSV	--
218-01-9	Chrysene	0.0051	J	0.21	J	TP12A-7	7 / 71	0.015 - 0.37	0.21	15	NYSDEC Subpart 375-6	1000	NO	CSG	--
84-74-2	Di-n-butylphthalate	0.0042	J	0.052	J	TP12A-8	5 / 71	0.015 - 0.85	0.052	610			NO	BSL	--
53-70-3	Dibenz(a,h)anthracene	0.0056	J	0.099	J	TP12A-7	2 / 71	0.038 - 0.37	0.099	0.015	NYSDEC Subpart 375-6	330	YES	ASL	--
131-11-3	Dimethylphthalate	0.044	J	0.086	J	S12EXSW-I-4-01	5 / 71	0.015 - 0.54	0.086					NSV	--
206-44-0	Fluoranthene	0.0072	J	0.32	J	TP12A-7	10 / 72	0.015 - 0.37	0.32	230	NYSDEC Subpart 375-6	100000	NO	BSL	--
193-39-5	Indeno(1,2,3-cd)pyrene	0.0076	J	0.14	J	TP12A-7	4 / 71	0.036 - 0.37	0.14	0.15	NYSDEC Subpart 375-6	500	NO	CSG	--
85-01-8	Phenanthrene	0.0046	J	0.12	J	TP12A-7	9 / 71	0.015 - 0.37	0.12		NYSDEC Subpart 375-6	100000		NSV	
129-00-0	Pyrene	0.0075	J	0.23	J	TP12A-7	10 / 72	0.015 - 0.37	0.23	170	NYSDEC Subpart 375-6	100000	NO	BSL	
Pesticide/PCBs															
11097-69-1	Aroclor-1254	0.053	J	0.078		S12EXSW-I-2-02	2 / 72	0.00519 - 0.2	0.078	0.22	NYSDEC Subpart 375-6	100	NO	BSL	--
72-54-8	4,4'-DDD	0.0069		0.0069		S12EXSW-E-1-01	1 / 72	0.00038 - 0.0195	0.0069	2	NYSDEC Subpart 375-6	3.3	NO	BSL	--
72-55-9	4,4'-DDE	0.0009	J	0.0059		S12EXSW-E-1-01	4 / 72	0.0004 - 0.0195	0.0059	1.4	NYSDEC Subpart 375-6	3.3	NO	BSL	--
50-29-3	4,4'-DDT	0.0017	J	0.0098		S12EXSW-D-1-01	4 / 72	0.00047 - 0.0195	0.0098	1.7	NYSDEC Subpart 375-6	3.3	NO	BSL	--
319-84-6	Alpha-BHC	0.0026	J	0.17		S12EXSW-I-3-02	3 / 72	0.00036 - 0.0095	0.17	0.077	NYSDEC Subpart 375-6	20	YES	ASL	--
319-85-7	Beta-BHC	0.063		0.063		S12EXSW-I-3-01	1 / 72	0.00086 - 0.00955	0.063	0.27	NYSDEC Subpart 375-6	36	NO	CSG	--
319-86-8	Delta-BHC	0.0033		0.0495	J	S12EXSW-I-3-02	2 / 72	0.0005 - 0.0095	0.0495		NYSDEC Subpart 375-6	40		CSG	--
Metals and Cyanide															
7429-90-5	Aluminum	5300	J	35100		S12EXSW-B-2-01	72 / 72	0 - 0	35100	7700			YES	ASL	BCKGRD
7440-36-0	Antimony	0.28	J	0.39	J	TP12A-7	2 / 64	0.26 - 2	0.39	3.1			NO	BSL	
7440-38-2	Arsenic	1.5	J	12.2		S12EXSW-B-2-01	72 / 72	0 - 0	12.2	0.39	NYSDEC Subpart 375-6	13	YES	ASL	BCKGRD
7440-39-3	Barium	48.2	J	304		S12EXSW-B-2-01	72 / 72	0 - 0	304	1500	NYSDEC Subpart 375-6	350	NO	BSL	
7440-41-7	Beryllium	0.25	J	1.7		S12EXSW-B-2-01	69 / 72	0.53 - 0.55	1.7	16	NYSDEC Subpart 375-6	7.2	NO	BSL	
7440-43-9	Cadmium	0.11	J	1.25		S12EXSW-J-4-01	27 / 72	0.05 - 1.7	1.25	7	NYSDEC Subpart 375-6	2.5	NO	BSL	
7440-70-2	Calcium	3320	J	186000		S12EXSW-B-2-01	72 / 72	0 - 0	186000					NUT	NUT
7440-47-3	Chromium	8.1	J	51.2		S12EXSW-B-2-01	72 / 72	0 - 0	51.2	12000	NYSDEC Subpart 375-6	30	NO	BSL	
7440-48-4	Cobalt	4.3	J	29		S12EXSW-B-2-01	72 / 72	0 - 0	29	2.3			YES	ASL	BCKGRD
7440-50-8	Copper	10.7	J	74.5		TP12-23C	72 / 72	0 - 0	74.5	310	NYSDEC Subpart 375-6	50	NO	BSL	
57-12-5	Cyanide	2.2		2.2		TP12-23C	1 / 72	0.2 - 1.1	2.2	160	NYSDEC Subpart 375-6	27	NO	BSL	
7439-89-6	Iron	12000	J	56400		S12EXSW-B-2-01	72 / 72	0 - 0	56400	5500			YES	ASL	BCKGRD
7439-92-1	Lead	5.4	J	431	J	TP12A-6	72 / 72	0 - 0	431	40	NYSDEC Subpart 375-6	63	YES	ASL	BCKGRD
7439-95-4	Magnesium	3190		74400	J	S12EXPR-A-2-01	72 / 72	0 - 0	74400					NSV	
7439-96-5	Manganese	314		1650		S12EXSW-B-2-01	72 / 72	0 - 0	1650	180	NYSDEC Subpart 375-6	1600	YES	ASL	BCKGRD
7487-94-7	Mercury	0.01	J	0.15	J	TP12-23C	64 / 72	0.031 - 0.06	0.15	2.3	NYSDEC Subpart 375-6	0.18	NO	BSL	
7440-02-0	Nickel	11	J	75	J	S12EXSW-B-2-01	72 / 72	0 - 0	75	150	NYSDEC Subpart 375-6	30	NO	BSL	

ATTACHMENT B TABLE 2

OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN IN SEAD-12 PIT C SOIL (UPDATED)

SEAD-12 Updated Risk Assessment

Seneca Army Depot Activity

Scenario Time frame:	Cuurent/Future
Medium:	Soil
Exposure Medium:	Soil
Exposure Point:	SEAD-12 Pit C

CAS Number	Chemical	Minimum Detected Concentration [2] (mg/kg)	Q	Maximum Detected Concentration [2] (mg/kg)	Q	Location of Maximum Concentration	Detection Frequency [1,2]			Range of Reporting Limits [2] (mg/kg)			Concentration Used for Screening [3] (mg/kg)	Screening Value [5] (mg/kg)	Potential ARAR/TBC Source	ARAR / TBC Value [6] (mg/kg)	COPC Flag	Rationale for Contaminant Deletion or Selection [7]	Background Value [4] (mg/kg)
7440-09-7	Potassium	920		5330	J	S12EXSW-B-2-01	72	/	72	0	-	0	5330					NUT	NUT
7782-49-2	Selenium	0.25	J	2	J	S12EXPR-E-1-01	18	/	72	0.173	-	3.5	2	39	NYSDEC Subpart 375-6	3.9	NO	BSL	
7440-22-4	Silver	0.27	J	0.27	J	TP12-23C	1	/	72	0.0257	-	1.19	0.27	39	NYSDEC Subpart 375-6	2	NO	BSL	
7440-23-5	Sodium	37.2	J	1420		TP12-23C	67	/	72	26.5	-	55.7	1420					NUT	NUT
7440-28-0	Thallium	0.7	J	0.98	J	TP12A-7	2	/	72	0.176	-	2	0.98	0.078			YES	ASL	ASL
7440-62-2	Vanadium	11		68		S12EXSW-B-2-01	72	/	72	0	-	0	68	39			YES	ASL	BCKGRD
7440-66-6	Zinc	29.1	J	6080		TP12-23C	72	/	72	0	-	0	6080	2300	NYSDEC Subpart 375-6	109	YES	ASL	BCKGRD

Notes:

1. Field duplicate pairs were averaged as a discrete sample. Laboratory duplicates were not included in the assessment. Range of reporting limits were presented for nondetects only.
2. The maximum detected concentration was used for screening.
3. Metals are compared to Background Dataset using Pro UCL Wilcoxon Mann Whitney Tests.
4. EPA Regional Screening Levels for residential soil. On-line resources available at http://www.epa.gov/region09/superfund/prg/index.html. Last updated June 2011.
   USEPA RSLs were derived based on Direct contact exposure (ingestion and dermal contact) and a target Cancer Risk of 1E-6 or a Target Hazard Quotient of 0.1.
   Screening values for calcium, magnesium, potassium, and sodium were calculated based on an assumption of 200 mg/day soil ingestion and recommended dietary allowances and adequate intakes for 1-3 yr children (500 mg/day and 80 mg/day for calcium and magnesium) and minimum requirements for 1 yr children (225 mg/day and 1000 mg/day for sodium and potassium) from Marilyn Wright (2001) Dietary Reference Intakes.
   RSL for xylene, meta diet was used as screening value for xylene, meta/para.
   RSL for cadmium, diet was used as screening value for cadmium.
   RSL for chromium (III, insoluble salt) was used as screening value for chromium.
   PRG for nickel (soluble salts) was used as screening value for nickel.
5. Potential ARAR/TBC values are from NYSDEC Brownfield Unrestricted Use Soil Cleanup Objectives, http://www.dec.state.ny.us/website/regs/subpart375_6.html
6. Rationale codes
   Selection Reason:
   - Above Screening Levels (ASL)
   - Chemicals in the Same Group were retained as COPC (CSG)

   Deletion Reason:
   - Essential Nutrient (NUT)
   - Below Screening Level (BSL)
   - No Screening Value (NSV)

Definitions:

COPC = Chemical of Potential Concern

ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered

Q = Qualifier

J = Estimated Value

J = Estimated Value

Attachment B Table 3
Wilcoxon Mann Whitney Test Summary
Updated Disposal Pit C versus SEDA Background Dataset
SEAD-12 Updated Risk Assessment
Seneca Army Depot Activity

Parameter	# of Pit AB Samples	Pit AB Mean WRS Value	# of Background Samples	Background Mean WRS Value	Wilcoxon Rank Sum Tests: Mean/Median of Site = Mean/Median of Background	Mean/Median of Site >= Mean/Median of Background	Mean/Median of Site <= Mean/Median of Background	Is Site > Background?
					Conclusion with Alpha = 0.05			
Aluminum	72	55.61	57	76.86	FALSE	FALSE	**TRUE**	No
Arsenic	72	55.26	55	75.44	FALSE	FALSE	**TRUE**	No
Calcium	72	77.76	57	48.88	FALSE	**TRUE**	FALSE	**Yes**
Cobalt	72	59.13	57	72.34	FALSE	FALSE	**TRUE**	No
Iron	72	56.71	57	75.47	FALSE	FALSE	**TRUE**	No
Lead	72	63.03	54	64.13	**TRUE**	**TRUE**	**TRUE**	No
Magnesium	72	74.72	57	52.73	FALSE	**TRUE**	FALSE	**Yes**
Manganese	72	55.91	54	73.62	FALSE	FALSE	**TRUE**	No
Potassium	72	73.42	57	54.37	FALSE	**TRUE**	FALSE	**Yes**
Sodium	72	77.17	57	49.62	FALSE	**TRUE**	FALSE	**Yes**
Thallium [1]	72	74.14	54	49.31	FALSE	**TRUE**	FALSE	**Yes**
Vanadium	72	60.87	57	70.22	**TRUE**	**TRUE**	**TRUE**	No
Zinc	72	52.05	54	78.77	FALSE	FALSE	**TRUE**	No

Notes:
1. Thallium detected result account for 3% of the Pit C dataset.
2. Below is a description of the True/False values for the particular scenario being evaluated.

Mean/Median of Site = Mean/Median of Background
True = Do Not Reject H0, Conclude Site = Background, P-Value >= alpha (0.05)
False = Reject H0, Conclude Site <> Background, P-Value < alpha (0.05)

Mean/Median of Site >= Mean/Median of Background
True = Do Not Reject H0, Conclude Site >= Background, P-Value >= alpha (0.05)
False = Reject H0, Conclude Site < Background, P-Value < alpha (0.05)

Mean/Median of Site <= Mean/Median of Background
True = Do Not Reject H0, Conclude Site <= Background, P-Value >= alpha (0.05)
False = Reject H0, Conclude Site > Background, P-Value < alpha (0.05)

Attachment B Table 4A
SOIL EXPOSURE POINT CONCENTRATION SUMMARY - TOTAL SOIL
SEAD-12 Updated Risk Assessment
SENECA ARMY DEPOT ACTIVITY

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Soil
Exposure Point:	SEAD-12

Chemical of Potential Concern	Units	Arithmetic Mean (1)	95% UCL of Normal Data (1)	Maximum Detected Concentration (1)	Q	EPC Units	Reasonable Maximum Exposure (2)		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
Total Soil									
Volatile Organics									
Semi Volatile Organics									
Benzo(a)anthracene	mg/kg	1.01E-02	3.39E-02	1.60E-02	J	mg/kg	#######	95% KM (% Bootstrap) UCL	Non-Parametric
Benzo(a)pyrene	mg/kg	1.30E-02	3.07E-02	3.90E-02	J	mg/kg	#######	95% KM (t) UCL	Non-Parametric
Benzo(b)fluoranthene	mg/kg	1.09E-02	3.69E-02	1.60E-02	J	mg/kg	#######	95% KM (t) UCL	Non-Parametric
Benzo(ghi)perylene	mg/kg	1.15E-02	5.93E-02	3.90E-02	J	mg/kg	#######	95% KM (t) UCL	Non-Parametric
Benzo(k)fluoranthene	mg/kg	1.11E-02	3.82E-02	1.60E-02	J	mg/kg	#######	95% KM (% Bootstrap) UCL	Non-Parametric
Carbazole	mg/kg	--	--	7.40E-03	J	mg/kg	**#######**	Maximum (4)	Maximum
Chrysene	mg/kg	1.08E-02	3.29E-02	1.90E-02	J	mg/kg	#######	95% KM (t) UCL	Non-Parametric
Dibenz(a,h)anthracene	mg/kg	--	--	5.60E-03	J	mg/kg	**#######**	Maximum (4)	Maximum
Dimethylphthalate	mg/kg	6.22E-02	4.03E-02	8.60E-02	J	mg/kg	#######	95% KM (% Bootstrap) UCL	Non-Parametric
Indeno(1,2,3-cd)pyrene	mg/kg	8.33E-03	3.40E-02	1.20E-02	J	mg/kg	**#######**	95% KM (% Bootstrap) UCL	Non-Parametric
Phenanthrene	mg/kg	1.62E-02	3.35E-02	5.20E-02	J	mg/kg	#######	95% KM (t) UCL	Non-Parametric
Pesticide/PCBs									
Alpha-BHC	mg/kg	8.92E-02	9.66E-03	2.10E-01		mg/kg	#######	95% KM (% Bootstrap) UCL	Non-Parametric
Beta-BHC	mg/kg	--	--	6.30E-02		mg/kg	#######	Maximum (4)	Maximum
Delta-BHC	mg/kg	3.40E-02	3.27E-03	6.10E-02	J	mg/kg	#######	95% KM (% Bootstrap) UCL	Non-Parametric
Metals									
Calcium	mg/kg	72,299	78,692	186,000		mg/kg	89,504	95% Chebyshev (Mean, Sd) UCL	Non-Parametric
Magnesium	mg/kg	15,118	16,928	74,400	J	mg/kg	19,862	95% Chebyshev (Mean, Sd) UCL	Non-Parametric
Potassium	mg/kg	1,630	1,685	5,330	J	mg/kg	1,690	95% Modified-t UCL	Normal
Sodium	mg/kg	143	159	1,420		mg/kg	**165**	95% KM (BCA) UCL	Non-Parametric
Thallium	mg/kg	1.22	0.39	1.70	J	mg/kg	**1.13**	95% KM (% Bootstrap) UCL	Non-Parametric

Notes:
1. All values were calculated by ProUCL version 4.00.04 using the combined RI and RA dataset for Pits C1 and C2.
2. Grey shaded cells represent non-detects in the dataset influencing which statistical methods were available (10 or more detects recommended). If the Student-t method was not available the Maximum Likelihood Estimate(MLE) Method for Normal distribution was used. If the MLE Method could not be calculated the DL/2 Substitution Method was used in its place.
3. The EPCs were calculated using the ProUCL (Version 4.01.00) and the EPCs were selected in accordance with the ProUCL Version 4.01 User Guide (USEPA, 2009) and the Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites
4. **Bold** values have limited detection frequency (4 or less observations).

Other Notes Q - qualifier
J = Estimated Value

Attachment B Table 4B
AMBIENT AIR EXPOSURE POINT CONCENTRATIONS - DISPOSAL PIT C
SEAD-12 Updated Risk Assessment
Seneca Army Depot Activity

Equation for Air EPC from Surface : CSsurf x PM10 x CF	Equation for Air EPC from Total Soils (mg/m³): CStot x PM10 x CF
Variables:	Variables:
CSsurf = Chemical Concentration in Surface Soil, from EPC data (m	CStot = Chemical Concentration in Total Soils, from EPC data (mg/kg)
PM_{10} = Average Measured PM10 Concentration = 17 ug/m³	PM10 = PM10 Concentration Calculated for Construction Worker= 138 u
CF = Conversion Factor = 1E-9 kg/ug	CF = Conversion Factor = 1E-9 kg/ug

Analyte	EPC Data for Surface Soil (mg/kg)	EPC Data for Total Soils (mg/kg)	Calculated Air EPC Surface Soil (mg/m³)	Calculated Air EPC Total Soils (mg/m³)
Semi Volatile Organics				
Benzo(a)anthracene	1.08E-02	1.08E-02	1.84E-10	1.54E-09
Benzo(a)pyrene	1.20E-02	1.20E-02	2.04E-10	1.71E-09
Benzo(b)fluoranthene	1.24E-02	1.24E-02	2.10E-10	1.77E-09
Benzo(ghi)perylene	1.68E-02	1.68E-02	2.85E-10	2.40E-09
Benzo(k)fluoranthene	1.23E-02	1.23E-02	2.09E-10	1.76E-09
Carbazole	7.40E-03	7.40E-03	1.26E-10	1.06E-09
Chrysene	1.22E-02	1.22E-02	2.07E-10	1.74E-09
Dibenz(a,h)anthracene	5.60E-03	5.60E-03	9.52E-11	8.01E-10
Dimethylphthalate	5.93E-02	5.93E-02	1.01E-09	8.48E-09
Indeno(1,2,3-cd)pyrene	9.85E-03	9.85E-03	1.67E-10	1.41E-09
Phenanthrene	1.37E-02	1.37E-02	2.33E-10	1.96E-09
Pesticide/PCBs				
Alpha-BHC	1.32E-01	1.32E-01	2.24E-09	1.89E-08
Beta-BHC	6.30E-02	6.30E-02	1.07E-09	9.01E-09
Delta-BHC	6.10E-02	6.10E-02	1.04E-09	8.72E-09
Metals				
Calcium	8.95E+04	8.95E+04	1.52E-03	1.28E-02
Magnesium	1.99E+04	1.99E+04	3.38E-04	2.84E-03
Potassium	1.69E+03	1.69E+03	2.87E-05	2.42E-04
Sodium	1.65E+02	1.65E+02	2.80E-06	2.36E-05
Thallium	1.13E+00	1.13E+00	1.92E-08	1.62E-07

ND = Compound was not detected.

ATTACHMENT B TABLE 5 (Disposal Pit C)
CALCULATION OF INTAKE AND RISK FROM INHALATION OF DUST IN AMBIENT AIR
REASONABLE MAXIMUM EXPOSURE (RME) - SEAD-12
SEAD-12 Updated Risk Assessment
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CA \times IR \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):
CA = Chemical Concentration in Air, Calculated from Air EPC Data
IR = Inhalation Rate
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Inhalation RfD (mg/kg-day)	Carc. Slope Inhalation (mg/kg-day)-1	Air EPC* from Surface Soil (mg/m3)	Air EPC* from Total Soils (mg/m3)	Current Site Worker Intake (mg/kg-day) (Nc)	Current Site Worker Intake (mg/kg-day) (Car)	Current Site Worker Hazard Quotient	Current Site Worker Cancer Risk	Future Outdoor Park Worker Intake (mg/kg-day) (Nc)	Future Outdoor Park Worker Intake (mg/kg-day) (Car)	Future Outdoor Park Worker Hazard Quotient	Future Outdoor Park Worker Cancer Risk
Semi Volatile Organics												
Benzo(a)anthracene	NA	NA	1.84E-10	1.54E-09								
Benzo(a)pyrene	NA	3.85E+00	2.04E-10	1.71E-09		5.47E-13		2E-12		3.99E-12		2E-11
Benzo(b)fluoranthene	NA	3.85E-01	2.10E-10	1.77E-09		5.63E-13		2E-13		4.11E-12		2E-12
Benzo(ghi)perylene	NA	NA	2.85E-10	2.40E-09								
Benzo(k)fluoranthene	NA	3.85E-01	2.09E-10	1.76E-09		5.61E-13		2E-13		4.09E-12		2E-12
Carbazole	NA	NA	1.26E-10	1.06E-09								
Chrysene	NA	3.85E-02	2.07E-10	1.74E-09		5.54E-13		2E-14		4.04E-12		2E-13
Dibenz(a,h)anthracene	NA	4.20E+00	9.52E-11	8.01E-10		2.55E-13		1E-12		1.86E-12		8E-12
Dimethylphthalate	NA	NA	1.01E-09	8.48E-09								
Indeno(1,2,3-cd)pyrene	NA	3.85E-01	1.67E-10	1.41E-09		4.49E-13		2E-13		3.28E-12		1E-12
Phenanthrene	NA	NA	2.33E-10	1.96E-09								
Pesticide/PCBs												
Alpha-BHC	NA	6.30E+00	2.24E-09	1.89E-08		6.02E-12		4E-11		4.39E-11		3E-10
Beta-BHC	NA	1.86E+00	1.07E-09	9.01E-09		2.87E-12		5E-12		2.10E-11		4E-11
Delta-BHC	NA	NA	1.04E-09	8.72E-09								
Metals												
Calcium	NA	NA	1.52E-03	1.28E-02								
Magnesium	NA	NA	3.38E-04	2.84E-03								
Potassium	NA	NA	2.87E-05	2.42E-04								
Sodium	NA	NA	2.80E-06	2.36E-05								
Thallium	NA	NA	1.92E-08	1.62E-07								
Total Hazard Quotient and Cancer Risk:							**0.0E+00**	**4.7E-11**			**0.0E+00**	**3.4E-10**

Assumptions for Current Site Worker			Assumptions for Future Outdoor Park Worker		
CA =	EPC	Surface Only	CA =	EPC	Surface Only
BW =	70	kg	BW =	70	kg
IR =	9.6	m3/day	IR =	8	m3/day
EF =	20	days/year	EF =	175	days/year
ED =	25	years	ED =	25	years
AT (Nc) =	9,125	days	AT (Nc) =	9,125	days
AT (Car) =	25,550	days	AT (Car) =	25,550	days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
* See Table L-5B for calculation of Air EPC.
NA= Information not available.
ND = Compound not detected.

ATTACHMENT B TABLE 5 (Disposal Pit C)
CALCULATION OF INTAKE AND RISK FROM INHALATION OF DUST IN AMBIENT AIR
REASONABLE MAXIMUM EXPOSURE (RME) - SEAD-12
SEAD-12 Updated Risk Assessment
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CA \times IR \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):
CA = Chemical Concentration in Air, Calculated from Air EPC Data
IR = Inhalation Rate
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Inhalation RfD (mg/kg-day)	Carc. Slope Inhalation (mg/kg-day)-1	Air EPC* from Surface Soil (mg/m3)	Air EPC* from Total Soils (mg/m3)	Future Recreational Visitor (Child) Intake (mg/kg-day) (Nc)	Intake (mg/kg-day) (Car)	Hazard Quotient	Cancer Risk	Future Construction Worker Intake (mg/kg-day) (Nc)	Intake (mg/kg-day) (Car)	Hazard Quotient	Cancer Risk
Semi Volatile Organics												
Benzo(a)anthracene	NA	NA	1.84E-10	1.54E-09								
Benzo(a)pyrene	NA	3.85E+00	2.04E-10	1.71E-09		3.24E-13		1E-12		2.49E-12		1E-11
Benzo(b)fluoranthene	NA	3.85E-01	2.10E-10	1.77E-09		3.34E-13		1E-13		2.57E-12		1E-12
Benzo(ghi)perylene	NA	NA	2.85E-10	2.40E-09								
Benzo(k)fluoranthene	NA	3.85E-01	2.09E-10	1.76E-09		3.32E-13		1E-13		2.56E-12		1E-12
Carbazole	NA	NA	1.26E-10	1.06E-09								
Chrysene	NA	3.85E-02	2.07E-10	1.74E-09		3.28E-13		1E-14		2.53E-12		1E-13
Dibenz(a,h)anthracene	NA	4.20E+00	9.52E-11	8.01E-10		1.51E-13		6E-13		1.16E-12		5E-12
Dimethylphthalate	NA	NA	1.01E-09	8.48E-09								
Indeno(1,2,3-cd)pyrene	NA	3.85E-01	1.67E-10	1.41E-09		2.66E-13		1E-13		2.05E-12		8E-13
Phenanthrene	NA	NA	2.33E-10	1.96E-09								
Pesticide/PCBs												
Alpha-BHC	NA	6.30E+00	2.24E-09	1.89E-08		3.56E-12		2E-11		2.74E-11		2E-10
Beta-BHC	NA	1.86E+00	1.07E-09	9.01E-09		1.70E-12		3E-12		1.31E-11		2E-11
Delta-BHC	NA	NA	1.04E-09	8.72E-09								
Metals												
Calcium	NA	NA	1.52E-03	1.28E-02								
Magnesium	NA	NA	3.38E-04	2.84E-03								
Potassium	NA	NA	2.87E-05	2.42E-04								
Sodium	NA	NA	2.80E-06	2.36E-05								
Thallium	NA	NA	1.92E-08	1.62E-07								
Total Hazard Quotient and Cancer Risk:							**0.0E+00**	**2.8E-11**			**0.0E+00**	**2.1E-10**

Assumptions for Future Recreational Visitor (Child)			Assumptions for Future Construction Worker		
CA =	EPC	Surface Only	CA =	EPC	Surface/Subsurface
BW =	15	kg	BW =	70	kg
IR =	8.7	m3/day	IR =	10.4	m3/day
EF =	14	days/year	EF =	250	days/year
ED =	5	years	ED =	1	years
AT (Nc) =	1,825	days	AT (Nc) =	365	days
AT (Car) =	25,550	days	AT (Car) =	25,550	days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
* See Table L-5B for calculation of Air EPC.
NA= Information not available.
ND = Compound not detected.

ATTACHMENT B TABLE 5 (Disposal Pit C)
CALCULATION OF INTAKE AND RISK FROM INHALATION OF DUST IN AMBIENT AIR
REASONABLE MAXIMUM EXPOSURE (RME) - SEAD-12
SEAD-12 Updated Risk Assessment
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CA \times IR \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):

CA = Chemical Concentration in Air, Calculated from Air EPC Data
IR = Inhalation Rate
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Equation for Total Lifetime Cancer Risk = Adult Contribution + Child Contribution

Analyte	Inhalation RfD (mg/kg-day)	Carc. Slope Inhalation (mg/kg-day)-1	Air EPC* from Surface Soil (mg/m3)	Future Resident (Adult) Intake (mg/kg-day) (Nc)	Future Resident (Adult) Intake (mg/kg-day) (Car)	Future Resident (Adult) Hazard Quotient	Future Resident (Adult) Contribution to Lifetime Cancer Risk	Future Resident (Child) Intake (mg/kg-day) (Nc)	Future Resident (Child) Intake (mg/kg-day) (Car)	Future Resident (Child) Hazard Quotient	Future Resident (Child) Contribution to Lifetime Cancer Risk	Resident Total Lifetime Cancer Risk
Semi Volatile Organics												
Benzo(a)anthracene	NA	NA	1.84E-10									
Benzo(a)pyrene	NA	3.85E+00	2.04E-10		1.91E-11		7E-11		9.71E-12		4E-11	1E-10
Benzo(b)fluoranthene	NA	3.85E-01	2.10E-10		1.97E-11		8E-12		1.00E-11		4E-12	1E-11
Benzo(ghi)perylene	NA	NA	2.85E-10									
Benzo(k)fluoranthene	NA	3.85E-01	2.09E-10		1.96E-11		8E-12		9.97E-12		4E-12	1E-11
Carbazole	NA	NA	1.26E-10									
Chrysene	NA	3.85E-02	2.07E-10		1.94E-11		7E-13		9.85E-12		4E-13	1E-12
Dibenz(a,h)anthracene	NA	4.20E+00	9.52E-11		8.94E-12		4E-11		4.54E-12		2E-11	6E-11
Dimethylphthalate	NA	NA	1.01E-09									
Indeno(1,2,3-cd)pyrene	NA	3.85E-01	1.67E-10		1.57E-11		6E-12		7.98E-12		3E-12	9E-12
Phenanthrene	NA	NA	2.33E-10									
Pesticide/PCBs												
Alpha-BHC	NA	6.30E+00	2.24E-09		2.11E-10		1E-09		1.07E-10		7E-10	2E-09
Beta-BHC	NA	1.86E+00	1.07E-09		1.01E-10		2E-10		5.11E-11		9E-11	3E-10
Delta-BHC	NA	NA	1.04E-09									
Metals												
Calcium	NA	NA	1.52E-03									
Magnesium	NA	NA	3.38E-04									
Potassium	NA	NA	2.87E-05									
Sodium	NA	NA	2.80E-06									
Thallium	NA	NA	1.92E-08									
Total Hazard Quotient and Cancer Risk:						**0.0E+00**	**1.6E-09**			**0.0E+00**	**8.4E-10**	**2.5E-09**

Assumptions for Future Resident (Adult)			Assumptions for Future Resident (Child)		
CA =	EPC	Surface Only	CA =	EPC	Surface Only
BW =	70	kg	BW =	15	kg
IR =	20	m3/day	IR =	8.7	m3/day
EF =	350	days/year	EF =	350	days/year
ED =	24	years	ED =	6	years
AT (Nc) =	8,760	days	AT (Nc) =	2,190	days
AT (Car) =	25,550	days	AT (Car) =	25,550	days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
* See Table L-5B for calculation of Air EPC.
NA= Information not available.
ND = Compound not detected.

ATTACHMENT B TABLE 6 (Disposal Pit C)
CALCULATION OF INTAKE AND RISK FROM THE INGESTION OF SOIL
REASONABLE MAXIMUM EXPOSURE (RME) - SEAD-12
SEAD-12 Updated Risk Assessment
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CS \times IR \times CF \times FI \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):

CS = Chemical Concentration in Soil, Calculated from Soil EPC Data
IR = Ingestion Rate
CF = Conversion Factor
FI = Fraction Ingested
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Oral RfD	Carc. Slope Oral	EPC Surface Soil	EPC from Total Soils	Current Site Worker				Future Outdoor Park Worker			
					Intake (mg/kg-day)		Hazard Quotient	Cancer Risk	Intake (mg/kg-day)		Hazard Quotient	Cancer Risk
	(mg/kg-day)	(mg/kg-day)-1	(mg/kg)	(mg/kg)	(Nc)	(Car)			(Nc)	(Car)		
Semi Volatile Organics												
Benzo(a)anthracene	NA	7.30E-01	1.08E-02	1.08E-02		3.02E-10		2E-10		2.64E-09		2E-09
Benzo(a)pyrene	NA	7.30E+00	1.20E-02	1.20E-02		3.35E-10		2E-09		2.93E-09		2E-08
Benzo(b)fluoranthene	NA	7.30E-01	1.24E-02	1.24E-02		3.45E-10		3E-10		3.02E-09		2E-09
Benzo(ghi)perylene	NA	NA	1.68E-02	1.68E-02								
Benzo(k)fluoranthene	NA	7.30E-02	1.23E-02	1.23E-02		3.44E-10		3E-11		3.01E-09		2E-10
Carbazole	NA	2.00E-02	7.40E-03	7.40E-03		2.07E-10		4E-12		1.81E-09		4E-11
Chrysene	3.00E-04	7.30E-03	1.22E-02	1.22E-02	9.51E-10	3.40E-10	3E-06	2E-12	8.32E-09	2.97E-09	3E-05	2E-11
Dibenz(a,h)anthracene	NA	7.30E+00	5.60E-03	5.60E-03		1.57E-10		1E-09		1.37E-09		1E-08
Dimethylphthalate	NA	NA	5.93E-02	5.93E-02								
Indeno(1,2,3-cd)pyrene	NA	7.30E-01	9.85E-03	9.85E-03		2.75E-10		2E-10		2.41E-09		2E-09
Phenanthrene	NA	NA	1.37E-02	1.37E-02								
Pesticide/PCBs												
Alpha-BHC	NA	6.30E+00	1.32E-01	1.32E-01		3.69E-09		2E-08		3.23E-08		2E-07
Beta-BHC	NA	1.80E+00	6.30E-02	6.30E-02		1.76E-09		3E-09		1.54E-08		3E-08
Delta-BHC	NA	NA	6.10E-02	6.10E-02								
Metals												
Calcium	NA	NA	8.95E+04	8.95E+04								
Magnesium	NA	NA	1.99E+04	1.99E+04								
Potassium	NA	NA	1.69E+03	1.69E+03								
Sodium	NA	NA	1.65E+02	1.65E+02								
Thallium	6.00E-04	NA	1.13E+00	1.13E+00	8.85E-08		1E-04		7.74E-07		1E-03	
Total Hazard Quotient and Cancer Risk:							**1.5E-04**	**3.1E-08**			**1.3E-03**	**2.7E-07**

Assumptions for Current Site Worker			Assumptions for Future Outdoor Park Worker		
CF =	1E-06	kg/mg	CF =	1E-06	kg/mg
CS =	EPC	Surface Only	CS =	EPC	Surface Only
BW =	70	kg	BW =	70	kg
IR =	100	mg soil/day	IR =	100	mg soil/day
FI =	1	unitless	FI =	1	unitless
EF =	20	days/year	EF =	175	days/year
ED =	25	years	ED =	25	years
AT (Nc) =	9,125	days	AT (Nc) =	9,125	days
AT (Car) =	25,550	days	AT (Car) =	25,550	days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.
ND= Compound not detected.

ATTACHMENT B TABLE 6 (Disposal Pit C)
CALCULATION OF INTAKE AND RISK FROM THE INGESTION OF SOIL
REASONABLE MAXIMUM EXPOSURE (RME) - SEAD-12
SEAD-12 Updated Risk Assessment
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CS \times IR \times CF \times FI \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):

CS = Chemical Concentration in Soil, Calculated from Soil EPC Data
IR = Ingestion Rate
CF = Conversion Factor
FI = Fraction Ingested
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Oral RfD	Carc. Slope Oral	EPC Surface Soil	EPC from Total Soils	Future Recreational Visitor (Child)				Future Construction Worker			
					Intake (mg/kg-day)		Hazard Quotient	Cancer Risk	Intake (mg/kg-day)		Hazard Quotient	Cancer Risk
	(mg/kg-day)	(mg/kg-day)-1	(mg/kg)	(mg/kg)	(Nc)	(Car)			(Nc)	(Car)		
Semi Volatile Organics												
Benzo(a)anthracene	NA	7.30E-01	1.08E-02	1.08E-02		3.95E-10		3E-10		7.25E-10		5E-10
Benzo(a)pyrene	NA	7.30E+00	1.20E-02	1.20E-02		4.38E-10		3E-09		8.04E-10		6E-09
Benzo(b)fluoranthene	NA	7.30E-01	1.24E-02	1.24E-02		4.51E-10		3E-10		8.29E-10		6E-10
Benzo(ghi)perylene	NA	NA	1.68E-02	1.68E-02								
Benzo(k)fluoranthene	NA	7.30E-02	1.23E-02	1.23E-02		4.49E-10		3E-11		8.25E-10		6E-11
Carbazole	NA	2.00E-02	7.40E-03	7.40E-03		2.70E-10		5E-12		4.97E-10		1E-11
Chrysene	3.00E-04	7.30E-03	1.22E-02	1.22E-02	6.21E-09	4.44E-10	2E-05	3E-12	5.71E-08	8.15E-10	2E-04	6E-12
Dibenz(a,h)anthracene	NA	7.30E+00	5.60E-03	5.60E-03		2.05E-10		1E-09		3.76E-10		3E-09
Dimethylphthalate	NA	NA	5.93E-02	5.93E-02								
Indeno(1,2,3-cd)pyrene	NA	7.30E-01	9.85E-03	9.85E-03		3.60E-10		3E-10		6.61E-10		5E-10
Phenanthrene	NA	NA	1.37E-02	1.37E-02								
Pesticide/PCBs												
Alpha-BHC	NA	6.30E+00	1.32E-01	1.32E-01		4.82E-09		3E-08		8.85E-09		6E-08
Beta-BHC	NA	1.80E+00	6.30E-02	6.30E-02		2.30E-09		4E-09		4.23E-09		8E-09
Delta-BHC	NA	NA	6.10E-02	6.10E-02								
Metals												
Calcium	NA	NA	8.95E+04	8.95E+04								
Magnesium	NA	NA	1.99E+04	1.99E+04								
Potassium	NA	NA	1.69E+03	1.69E+03								
Sodium	NA	NA	1.65E+02	1.65E+02								
Thallium	6.00E-04	NA	1.13E+00	1.13E+00	5.78E-07		1E-03		5.31E-06		9E-03	
Total Hazard Quotient and Cancer Risk:							**9.8E-04**	**4.0E-08**			**9.0E-03**	**7.4E-08**

Assumptions for Future Recreational Visitor (Child)			Assumptions for Future Construction Worker		
CF =	1E-06	kg/mg	CF =	1E-06	kg/mg
CS =	EPC	Surface Only	CS =	EPC	Surface/Subsurface
BW =	15	kg	BW =	70	kg
IR =	200	mg soil/day	IR =	480	mg soil/day
FI =	1	unitless	FI =	1	unitless
EF =	14	days/year	EF =	250	days/year
ED =	5	years	ED =	1	years
AT (Nc) =	1,825	days	AT (Nc) =	365	days
AT (Car) =	25,550	days	AT (Car) =	25,550	days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.
ND= Compound not detected.

ATTACHMENT B TABLE 6 (Disposal Pit C)
CALCULATION OF INTAKE AND RISK FROM THE INGESTION OF SOIL
REASONABLE MAXIMUM EXPOSURE (RME) - SEAD-12
SEAD-12 Updated Risk Assessment
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CS \times IR \times CF \times FI \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):

CS = Chemical Concentration in Soil, Calculated from Soil EPC Data
IR = Ingestion Rate
CF = Conversion Factor
FI = Fraction Ingested
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose
Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor
Equation for Total Lifetime Cancer Risk = Adult Contribution + Child Contribution

Analyte	Oral RfD	Carc. Slope Oral	EPC Surface Soil	Future Resident (Adult)				Future Resident (Child)				Resident
				Intake (mg/kg-day)		Hazard Quotient	Contribution to Lifetime Cancer Risk	Intake (mg/kg-day)		Hazard Quotient	Contribution to Lifetime Cancer Risk	Total Lifetime Cancer Risk
	(mg/kg-day)	(mg/kg-day)-1	(mg/kg)	(Nc)	(Car)			(Nc)	(Car)			
Semi Volatile Organics												
Benzo(a)anthracene	NA	7.30E-01	1.08E-02		5.07E-09		4E-09		1.18E-08		9E-09	1E-08
Benzo(a)pyrene	NA	7.30E+00	1.20E-02		5.63E-09		4E-08		1.31E-08		1E-07	1E-07
Benzo(b)fluoranthene	NA	7.30E-01	1.24E-02		5.80E-09		4E-09		1.35E-08		1E-08	1E-08
Benzo(ghi)perylene	NA	NA	1.68E-02									
Benzo(k)fluoranthene	NA	7.30E-02	1.23E-02		5.78E-09		4E-10		1.35E-08		1E-09	1E-09
Carbazole	NA	2.00E-02	7.40E-03		3.48E-09		7E-11		8.11E-09		2E-10	2E-10
Chrysene	3.00E-04	7.30E-03	1.22E-02	1.66E-08	5.71E-09	6E-05	4E-11	1.55E-07	1.33E-08	5E-04	1E-10	1E-10
Dibenz(a,h)anthracene	NA	7.30E+00	5.60E-03		2.63E-09		2E-08		6.14E-09		4E-08	6E-08
Dimethylphthalate	NA	NA	5.93E-02									
Indeno(1,2,3-cd)pyrene	NA	7.30E-01	9.85E-03		4.63E-09		3E-09		1.08E-08		8E-09	1E-08
Phenanthrene	NA	NA	1.37E-02									
Pesticide/PCBs												
Alpha-BHC	NA	6.30E+00	1.32E-01		6.19E-08		4E-07		1.45E-07		9E-07	1E-06
Beta-BHC	NA	1.80E+00	6.30E-02		2.96E-08		5E-08		6.90E-08		1E-07	2E-07
Delta-BHC	NA	NA	6.10E-02									
Metals												
Calcium	NA	NA	8.95E+04									
Magnesium	NA	NA	1.99E+04									
Potassium	NA	NA	1.69E+03									
Sodium	NA	NA	1.65E+02									
Thallium	6.00E-04	NA	1.13E+00	1.55E-06		3E-03		1.44E-05		2E-02		
Total Hazard Quotient and Cancer Risk:						**2.6E-03**	**5.2E-07**			**2.5E-02**	**1.2E-06**	**1.7E-06**

Assumptions for Future Resident (Adult)			Assumptions for Future Resident (Child)		
CF =	1E-06	kg/mg	CF =	1E-06	kg/mg
CS =	EPC	Surface Only	CS =	EPC	Surface Only
BW =	70	kg	BW =	15	kg
IR =	100	mg soil/day	IR =	200	mg soil/day
FI =	1	unitless	FI =	1	unitless
EF =	350	days/year	EF =	350	days/year
ED =	24	years	ED =	6	years
AT (Nc) =	8,760	days	AT (Nc) =	2,190	days
AT (Car) =	25,550	days	AT (Car) =	25,550	days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.
ND= Compound not detected.

ATTACHMENT B TABLE 7 (Disposal Pit C)
CALCULATION OF ABSORBED DOSE AND RISK FROM DERMAL CONTACT TO SOIL
REASONABLE MAXIMUM EXPOSURE (RME)
SEAD-12 Updated Risk Assessment
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CS \times CF \times SA \times AF \times ABS \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):

CS = Chemical Concentration in Soil, from Soil EPC Data
CF = Conversion Factor
SA = Surface Area Contact
AF = Adherence Factor
ABS = Absorption Factor
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Dermal RfD	Carc. Slope Dermal	Absorption Factor*	EPC Surface Soil	EPC from Total Soils	Current Site Worker				Future Outdoor Park Worker			
						Absorbed Dose (mg/kg-day)		Hazard Quotient	Cancer Risk	Absorbed Dose (mg/kg-day)		Hazard Quotient	Cancer Risk
	(mg/kg-day)	(mg/kg-day)-1	(unitless)	(mg/kg)	(mg/kg)	(Nc)	(Car)			(Nc)	(Car)		
Semi Volatile Organics													
Benzo(a)anthracene	NA	7.30E-01	0.13	1.08E-02	1.08E-02		2.28E-09		2E-09		1.99E-08		1E-08
Benzo(a)pyrene	NA	7.30E+00	0.13	1.20E-02	1.20E-02		2.53E-09		2E-08		2.21E-08		2E-07
Benzo(b)fluoranthene	NA	7.30E-01	0.13	1.24E-02	1.24E-02		2.60E-09		2E-09		2.28E-08		2E-08
Benzo(ghi)perylene	NA	NA	0.13	1.68E-02	1.68E-02								
Benzo(k)fluoranthene	NA	7.30E-02	0.13	1.23E-02	1.23E-02		2.59E-09		2E-10		2.27E-08		2E-09
Carbazole	NA	2.00E-02	0.13	7.40E-03	7.40E-03		1.56E-09		3E-11		1.36E-08		3E-10
Chrysene	3.00E-04	7.30E-03	0.13	1.22E-02	1.22E-02	7.17E-09	2.56E-09	2E-05	2E-11	6.27E-08	2.24E-08	2E-04	2E-10
Dibenz(a,h)anthracene	NA	7.30E+00	0.13	5.60E-03	5.60E-03		1.18E-09		9E-09		1.03E-08		8E-08
Dimethylphthalate	NA	NA	0.1	5.93E-02	5.93E-02								
Indeno(1,2,3-cd)pyrene	NA	7.30E-01	0.13	9.85E-03	9.85E-03		2.08E-09		2E-09		1.82E-08		1E-08
Phenanthrene	NA	NA	0.13	1.37E-02	1.37E-02								
Pesticide/PCBs													
Alpha-BHC	NA	6.30E+00	0.1	1.32E-01	1.32E-01		2.14E-08		1E-07		1.87E-07		1E-06
Beta-BHC	NA	1.80E+00	0.1	6.30E-02	6.30E-02		1.02E-08		2E-08		8.94E-08		2E-07
Delta-BHC	NA	NA	0.1	6.10E-02	6.10E-02								
Metals													
Calcium	NA	NA	0.01	8.95E+04	8.95E+04								
Magnesium	NA	NA	0.01	1.99E+04	1.99E+04								
Potassium	NA	NA	0.01	1.69E+03	1.69E+03								
Sodium	NA	NA	0.01	1.65E+02	1.65E+02								
Thallium	6.00E-04	NA	0.01	1.13E+00	1.13E+00	5.13E-08		9E-05		4.49E-07		7E-04	
Total Hazard Quotient and Cancer Risk:								**1.1E-04**	**1.9E-07**			**9.6E-04**	**1.6E-06**

Assumptions for Current Site Worker			Assumptions for Future Outdoor Park Worker		
CS =	EPC	Surface On	CS =	EPC	Surface On
CF =	1.0E-06	kg/mg	CF =	1.0E-06	kg/mg
SA =	5,800	cm2	SA =	5,800	cm2
AF =	1	mg/cm2	AF =	1	mg/cm2
EF =	20	days/year	EF =	175	days/year
ED =	25	years	ED =	25	years
BW =	70	kg	BW =	70	kg
AT (Nc) =	9125	days	AT (Nc) =	9125	days
AT (Car) =	25550	days	AT (Car) =	25550	days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.
ND= Compound not detected.
* Absorption factors from Exhibit 3-4 of USEPA (2004) Supplemental Guidance for Dermal Risk Assessment, Part E of Risk Assessment Guidance for Superfund, Human Health Evaluation Manual (Volume I).
Supplemental Guidance to RAGS: Region 4 Bulletins, Human Health Risk Assessment Bulletins (http://www.epa.gov/region4/waste/ots/healtbul.htm).

ATTACHMENT B TABLE 7 (Disposal Pit C)
CALCULATION OF ABSORBED DOSE AND RISK FROM DERMAL CONTACT TO SOIL
REASONABLE MAXIMUM EXPOSURE (RME)
SEAD-12 Updated Risk Assessment
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CS \times CF \times SA \times AF \times ABS \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):

CS = Chemical Concentration in Soil, from Soil EPC Data
CF = Conversion Factor
SA = Surface Area Contact
AF = Adherence Factor
ABS = Absorption Factor
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Dermal RfD (mg/kg-day)	Carc. Slope Dermal (mg/kg-day)-1	Absorption Factor* (unitless)	EPC Surface Soil (mg/kg)	EPC from Total Soils (mg/kg)	Recreational Visitor (Child) Absorbed Dose (mg/kg-day) (Nc)	Absorbed Dose (mg/kg-day) (Car)	Hazard Quotient	Cancer Risk	Future Construction Worker Absorbed Dose (mg/kg-day) (Nc)	Absorbed Dose (mg/kg-day) (Car)	Hazard Quotient	Cancer Risk
Semi Volatile Organics													
Benzo(a)anthracene	NA	7.30E-01	1.30E-01	1.08E-02	1.08E-02		5.90E-10		4E-10		1.14E-09		8E-10
Benzo(a)pyrene	NA	7.30E+00	1.30E-01	1.20E-02	1.20E-02		6.54E-10		5E-09		1.26E-09		9E-09
Benzo(b)fluoranthene	NA	7.30E-01	1.30E-01	1.24E-02	1.24E-02		6.74E-10		5E-10		1.30E-09		1E-09
Benzo(ghi)perylene	NA	NA	1.30E-01	1.68E-02	1.68E-02								
Benzo(k)fluoranthene	NA	7.30E-02	1.30E-01	1.23E-02	1.23E-02		6.72E-10		5E-11		1.30E-09		9E-11
Carbazole	NA	2.00E-02	1.30E-01	7.40E-03	7.40E-03		4.04E-10		8E-12		7.80E-10		2E-11
Chrysene	3.00E-04	7.30E-03	1.30E-01	1.22E-02	1.22E-02	9.29E-09	6.64E-10	3E-05	5E-12	8.96E-08	1.28E-09	3E-04	9E-12
Dibenz(a,h)anthracene	NA	7.30E+00	1.30E-01	5.60E-03	5.60E-03		3.06E-10		2E-09		5.90E-10		4E-09
Dimethylphthalate	NA	NA	1.00E-01	5.93E-02	5.93E-02								
Indeno(1,2,3-cd)pyrene	NA	7.30E-01	1.30E-01	9.85E-03	9.85E-03		5.38E-10		4E-10		1.04E-09		8E-10
Phenanthrene	NA	NA	1.30E-01	1.37E-02	1.37E-02								
Pesticide/PCBs													
Alpha-BHC	NA	6.30E+00	1.00E-01	1.32E-01	1.32E-01		5.54E-09		3E-08		1.07E-08		7E-08
Beta-BHC	NA	1.80E+00	1.00E-01	6.30E-02	6.30E-02		2.65E-09		5E-09		5.11E-09		9E-09
Delta-BHC	NA	NA	1.00E-01	6.10E-02	6.10E-02								
Metals													
Calcium	NA	NA	1.00E-02	8.95E+04	8.95E+04								
Magnesium	NA	NA	1.00E-02	1.99E+04	1.99E+04								
Potassium	NA	NA	1.00E-02	1.69E+03	1.69E+03								
Sodium	NA	NA	1.00E-02	1.65E+02	1.65E+02								
Thallium	6.00E-04	NA	1.00E-02	1.13E+00	1.13E+00	6.65E-08		1E-04		6.41E-07		1E-03	
Total Hazard Quotient and Cancer Risk:								**1.4E-04**	**4.8E-08**			**1.4E-03**	**9.3E-08**

Assumptions for Future Recreational Visitor (Child)			Assumptions for Future Construction Worker		
CS =	EPC	Surface Onl	CS =	EPC	Surface/Subsurface
CF =	1.0E-06	kg/mg	CF =	1.0E-06	kg/mg
SA =	2,300	cm2	SA =	5,800	cm2
AF =	1	mg/cm2	AF =	1	mg/cm2
EF =	14	days/year	EF =	250	days/year
ED =	5	years	ED =	1	years
BW =	15	kg	BW =	70	kg
AT (Nc) =	1825	days	AT (Nc) =	365	days
AT (Car) =	25550	days	AT (Car) =	25550	days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.
ND= Compound not detected.
* Absorption factors from Exhibit 3-4 of USEPA (2004) Supplemental Guidance for Dermal Risk Assessment, Part E of Risk Assessment Guidance for Superfund, Human Health Evaluation Manual (Volume I).
Supplemental Guidance to RAGS: Region 4 Bulletins, Human Health Risk Assessment Bulletins (http://www.epa.gov/region4/waste/ots/healtbul.htm).

ATTACHMENT B TABLE 7 (Disposal Pit C)
CALCULATION OF ABSORBED DOSE AND RISK FROM DERMAL CONTACT TO SOIL
REASONABLE MAXIMUM EXPOSURE (RME)
SEAD-12 Updated Risk Assessment
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CS \times CF \times SA \times AF \times ABS \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):

CS = Chemical Concentration in Soil, from Soil EPC Data
CF = Conversion Factor
SA = Surface Area Contact
AF = Adherence Factor
ABS = Absorption Factor
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Equation for Total Lifetime Cancer Risk = Adult Contribution + Child Contribution

Analyte	Dermal RfD (mg/kg-day)	Carc. Slope Dermal (mg/kg-day)-1	Absorption Factor* (unitless)	EPC Surface Soil (mg/kg)	Future Resident (Adult) Intake (mg/kg-day) (Nc)	Future Resident (Adult) Intake (mg/kg-day) (Car)	Future Resident (Adult) Hazard Quotient	Future Resident (Adult) Cancer Risk	Future Resident (Child) Intake (mg/kg-day) (Nc)	Future Resident (Child) Intake (mg/kg-day) (Car)	Future Resident (Child) Hazard Quotient	Future Resident (Child) Cancer Risk	Resident Total Lifetime Cancer Risk
Semi Volatile Organics													
Benzo(a)anthracer	NA	7.30E-01	1.30E-01	1.08E-02		3.82E-08		3E-08		1.77E-08		1E-08	4E-08
Benzo(a)pyrene	NA	7.30E+00	1.30E-01	1.20E-02		4.24E-08		3E-07		1.96E-08		1E-07	5E-07
Benzo(b)fluoranthe	NA	7.30E-01	1.30E-01	1.24E-02		4.37E-08		3E-08		2.02E-08		1E-08	5E-08
Benzo(ghi)perylen	NA	NA	1.30E-01	1.68E-02									
Benzo(k)fluoranthe	NA	7.30E-02	1.30E-01	1.23E-02		4.36E-08		3E-09		2.02E-08		1E-09	5E-09
Carbazole	NA	2.00E-02	1.30E-01	7.40E-03		2.62E-08		5E-10		1.21E-08		2E-10	8E-10
Chrysene	3.00E-04	7.30E-03	1.30E-01	1.22E-02	1.25E-07	4.30E-08	4E-04	3E-10	2.32E-07	1.99E-08	8E-04	1E-10	5E-10
Dibenz(a,h)anthrac	NA	7.30E+00	1.30E-01	5.60E-03		1.98E-08		1E-07		9.17E-09		7E-08	2E-07
Dimethylphthalate	NA	NA	1.00E-01	5.93E-02									
Indeno(1,2,3-cd)py	NA	7.30E-01	1.30E-01	9.85E-03		3.49E-08		3E-08		1.61E-08		1E-08	4E-08
Phenanthrene	NA	NA	1.30E-01	1.37E-02									
Pesticide/PCBs													
Alpha-BHC	NA	6.30E+00	1.00E-01	1.32E-01		3.59E-07		2E-06		1.66E-07		1E-06	3E-06
Beta-BHC	NA	1.80E+00	1.00E-01	6.30E-02		1.72E-07		3E-07		7.94E-08		1E-07	5E-07
Delta-BHC	NA	NA	1.00E-01	6.10E-02									
Metals													
Calcium	NA	NA	1.00E-02	8.95E+04									
Magnesium	NA	NA	1.00E-02	1.99E+04									
Potassium	NA	NA	1.00E-02	1.69E+03									
Sodium	NA	NA	1.00E-02	1.65E+02									
Thallium	6.00E-04	NA	1.00E-02	1.13E+00	8.98E-07		1E-03		1.66E-06		3E-03		
Total Hazard Quotient and Cancer Risk:							**1.9E-03**	**3.1E-06**			**3.5E-03**	**1.4E-06**	**4.6E-06**

Assumptions for Future Resident (Adult)			Assumptions for Future Resident (Child)		
CS =	EPC	Surface Or	CS =	EPC	Surface Or
CF =	1.0E-06	kg/mg	CF =	1.0E-06	kg/mg
SA =	5,800	cm2	SA =	2,300	cm2
AF =	1	mg/cm2	AF =	1	mg/cm2
EF =	350	days/year	EF =	350	days/year
ED =	24	years	ED =	6	years
BW =	70	kg	BW =	15	kg
AT (Nc) =	8760	days	AT (Nc) =	2190	days
AT (Car) =	25550	days	AT (Car) =	25550	days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.
ND= Compound not detected.
* Absorption factors from Exhibit 3-4 of USEPA (2004) Supplemental Guidance for Dermal Risk Assessment, Part E of Risk Assessment Guidance for Superfund, Human Health Evaluation Manual (Volume I).
Supplemental Guidance to RAGS: Region 4 Bulletins, Human Health Risk Assessment Bulletins (http://www.epa.gov/region4/waste/ots/healtbul.htm).

ATTACHMENT C

EXPOSURE POINT ASSUMPTION

ATTACHMENT D TABLE 1

EXPOSURE FACTOR ASSUMPTIONS
CURRENT SITE WORKER
SEAD-12 Construction Completion Report
Seneca Army Depot Activity

RECEPTOR	EXPOSURE ROUTE	RME/CT	PARAMETER	VALUE	UNITS	BASIS	SOURCE
CURRENT SITE WORKER	**Inhalation of Dust in Ambient Air**		Inhalation Rate	9.6	m3/day	Average inhalation rate for moderate activity is 1.2 m3/hr, 8 hr work day	USEPA, 1997
		RME	Body Weight	70	kg	Standard reference weight for adult males	USEPA, 1991
			Averaging Time - Car	25550	days	70 years, conventional human life span	USEPA, 1989
	(Air EPC Calculated		Exposure Frequency	20	days/yr	Assumed	BPJ
	from Surface Soil Only)	RME	Exposure Duration	25	years	Upper bound time for employment at a job	USEPA, 1991, 1993
			Averaging Time - Nc	9125	days	25 years	USEPA, 1989
	Ingestion of Soil		Body Weight	70	kg	Standard reference weight for adult males	USEPA, 1991
		RME	Fraction Ingested	1	(unitless)	100% ingestion, conservative assumption	BPJ
	(Soil EPC Calculated		Averaging Time - Car	25550	days	70 years, conventional human life span	USEPA, 1989
	from Surface Soil Only)		Ingestion Rate	100	mg soil/day	Upper bound worker exposure to dirt and dust	USEPA, 1993
		RME	Exposure Frequency	20	days/yr	Assumed	BPJ
			Exposure Duration	25	years	Upper bound time for employment at a job	USEPA, 1991, 1993
			Averaging Time - Nc	9125	days	25 years	USEPA, 1989
	Dermal Contact - Soil		Body Weight	70	kg	Standard reference weight for adult males	USEPA, 1991
		RME	Absorption Factor	Compound Specific			USEPA, 1992
	(Soil EPC Calculated		Averaging Time - Car	25550	days	70 years, conventional human life span	USEPA, 1989
	from Surface Soil Only)		Skin Contact Surface Area	5800	cm2	Hands, legs, arms, neck and head exposed, 25% of upper bound body skin area	USEPA, 1992
			Soil to Skin Adherence Facto	1	mg/cm2	Upper bound soil to skin adherence factor	USEPA, 1992
		RME	Exposure Frequency	20	days/yr	Assumed	BPJ
			Exposure Duration	25	years	Upper bound time for employment at a job	USEPA, 1991, 1993
			Averaging Time - Nc	9125	days	25 years	USEPA, 1989

Notes:
RME = Resonable Maximum Exposure

Car = Carcinogenic
Nc = Non-carcinogenic

Source References:
BPJ: Best Professional Judgement.
· USEPA, 1988: Superfund Exposure Assessment Manual
· USEPA, 1989: Risk Assessment Guidance for Superfund, Volume I (RAGS)
· USEPA, 1991: Supplemental Guidance, Standard Default Exposure Factors
· USEPA, 1992: Dermal Exposure Assessment, Principles and Applications
· USEPA, 1993: Superfund's Standard Default Exposure for the Central Tendency and Reasonable Maximum Exposure
· USEPA, 1997: Exposure Factors Handbook, Update to 1990 handbook

ATTACHMENT D TABLE 2

EXPOSURE FACTOR ASSUMPTIONS
FUTURE PARK WORKER
SEAD 12-Remedial Investigation
Seneca Army Depot Activity

RECEPTOR	EXPOSURE ROUTE	RME/CT	PARAMETER	VALUE	UNITS	BASIS	SOURCE
FUTURE PARK WORKER	**Inhalation of Dust in Ambient Air**		Inhalation Rate	8	m3/day	Average inhalation rate for light activity is 1 m3/hr, 8 hr work day	USEPA, 1997
		RME	Body Weight	70	kg	Standard reference weight for adult males	USEPA, 1991
			Averaging Time - Car	25550	days	70 years, conventional human life span	USEPA, 1989
	(Air EPC Calculated		Exposure Frequency	175	days/yr	Works on-site 5 days/wk, 8 months/yr (35 weeks).	BPJ
	from Surface Soil Only)	RME	Exposure Duration	25	years	Upper bound time for employment at a job	USEPA, 1991, 1993
			Averaging Time - Nc	9125	days	25 years	USEPA, 1989
	Ingestion of Soil		Body Weight	70	kg	Standard reference weight for adult males	USEPA, 1991
		RME	Fraction Ingested	1	(unitless)	100% ingestion, conservative assumption	BPJ
	(Soil EPC Calculated		Averaging Time - Car	25550	days	70 years, conventional human life span	USEPA, 1989
	from Surface Soil Only)		Ingestion Rate	100	mg soil/day	Upper bound worker exposure to dirt and dust	USEPA, 1993
		RME	Exposure Frequency	175	days/yr	Works on-site 5 days/wk, 8 months/yr (35 weeks)	BPJ
			Exposure Duration	25	years	Upper bound time for employment at a job	USEPA, 1991, 1993
			Averaging Time - Nc	9125	days	25 years	USEPA, 1989
	Dermal Contact - Soil		Body Weight	70	kg	Standard reference weight for adult males	USEPA, 1991
		RME	Absorption Factor	Compound Specific			USEPA, 1992
	(Soil EPC Calculated		Averaging Time - Car	25550	days	70 years, conventional human life span	USEPA, 1989
	from Surface Soil Only)		Skin Contact Surface Area	5800	cm2	Hands, legs, arms, neck and head exposed, 25% of upper bound body skin area (	USEPA, 1992
			Soil to Skin Adherence Fact	1	mg/cm2	Upper bound soil to skin adherence factor	USEPA, 1992
		RME	Exposure Frequency	175	days/yr	Works on-site 5 days/wk, 8 months/yr (35 weeks)	BPJ
			Exposure Duration	25	years	Upper bound time for employment at a job	USEPA, 1991, 1993
			Averaging Time - Nc	9125	days	25 years	USEPA, 1989
	Ingestion of Groundwater	RME	Body Weight	70	kg	Standard reference weight for adult males	USEPA, 1991
			Ingestion Rate	1	liters/day	Standard occupational ingestion rate.	USEPA, 1991
			Averaging Time - Car	25550	days	70 years, conventional human life span	USEPA, 1989
			Exposure Frequency	175	days/yr	Works on-site 5 days/wk, 8 months/yr (35 weeks)	BPJ
		RME	Exposure Duration	25	years	Upper bound time for employment at a job	USEPA, 1991, 1993
			Averaging Time - Nc	9125	days	25 years	USEPA, 1989
	Dermal Contact - Surface Water	RME	Body Weight	70	kg	Standard reference weight for adult males	USEPA, 1991
			Absorption Factor	Compound Specific			USEPA, 1992
			Averaging Time - Car	25550	days	70 years, conventional human life span	USEPA, 1989
			Skin Contact Surface Area	2490	cm2	Adult male hands and forearms - upper bound.	USEPA, 1992
		RME	Exposure Frequency	18	days/yr	Assumes activity occurs 10% of work days.	BPJ
			Exposure Time	1	hour/day	Contact time during occasional site maintenance work.	BPJ
			Exposure Duration	25	years	Upper bond time for employment at a job.	USEPA, 1991,1993
			Averaging Time - Nc	9125	days	25 years	USEPA, 1989

ATTACHMENT D TABLE 2

EXPOSURE FACTOR ASSUMPTIONS
FUTURE PARK WORKER
SEAD 12-Remedial Investigation
Seneca Army Depot Activity

RECEPTOR	EXPOSURE ROUTE	RME/CT	PARAMETER	VALUE	UNITS	BASIS	SOURCE
	Dermal Contact - Sediment		Body Weight	70	kg	Standard reference weight for adult males	USEPA, 1991
		RME	Absorption Factor	Compound Specific			USEPA, 1992
			Averaging Time - Car	25550	days	70 years, conventional human life span	USEPA, 1989
			Skin Contact Surface Area	2490	cm2	Adult male hands and forearms - upper bound.	USEPA, 1992
			Soil to Skin Adherence Factc	1	mg/cm2	Upper bound soil to skin adherence factor	USEPA, 1992
		RME	Exposure Frequency	18	days/yr	Assumes activity occurs 10% of work days.	BPJ
			Exposure Duration	25	years	Upper bond time for employment at a job.	USEPA, 1991,1993
			Averaging Time - Nc	9125	days	25 years	USEPA, 1989

Notes:
RME = Resonable Maximum Exposure

Car = Carcinogenic
Nc = Non-carcinogenic

Source References:
BPJ: Best Professional Judgement.
· USEPA, 1988: Superfund Exposure Assessment Manual
· USEPA, 1989: Risk Assessment Guidance for Superfund, Volume I (RAGS)
· USEPA, 1991: Supplemental Guidance, Standard Default Exposure Factors
· USEPA, 1992: Dermal Exposure Assessment, Principles and Applications
· USEPA, 1993: Superfund's Standard Default Exposure for the Central Tendency and Reasonable Maximum Exposure
· USEPA, 1997: Exposure Factors Handbook, Update to 1990 handbook

ATTACHMENT D TABLE 3

EXPOSURE FACTOR ASSUMPTIONS
FUTURE CONSTRUCTION WORKER
SEAD 12-Remedial Investigation
Seneca Army Depot Activity

RECEPTOR	EXPOSURE ROUTE	RME/CT	PARAMETER	VALUE	UNITS	BASIS	SOURCE
FUTURE CONSTRUCTION WORKER	**Inhalation of Dust in Ambient Air**		Inhalation Rate	10.4	m3/day	Average inhalation rate for outdoor worker is 1.3 m3/hr, 8 hr work day	USEPA, 1997
			Body Weight	70	kg	Standard reference weight for adult males	USEPA, 1991
		RME	Exposure Duration	1	year	Upper bound time of employment for constr. worker	USEPA, 1991
	(Air EPC Calculated		Averaging Time - Nc	365	days	1 year	USEPA, 1989
	from Surface and		Averaging Time - Car	25550	days	70 years, conventional human life span	USEPA, 1989
	Subsurface Soils)	RME	Exposure Frequency	250	days/yr	Assumes works 5 days/wk and 10 days/yr vacation	USEPA, 1991
	Ingestion of Soil		Body Weight	70	kg	Standard reference weight for adult males	USEPA, 1991
			Fraction Ingested	1	(unitless)	100% ingestion, conservative assumption	BPJ
	(Soil EPC Calculated	RME	Exposure Duration	1	year	Upper bound time of employment for constr. worker	USEPA, 1991
	from Surface and		Averaging Time - Nc	365	days	1 year	USEPA, 1989
	Subsurface Soils)		Averaging Time - Car	25550	days	70 years, conventional human life span	USEPA, 1989
		RME	Ingestion Rate	480	mg soil/day	Assumed IR for intensive construction work	USEPA, 1991, 1993
			Exposure Frequency	250	days/yr	Assumes works 5 days/wk and 10 days/yr vacation	USEPA, 1991
	Dermal Contact - Soil		Body Weight	70	kg	Standard reference weight for adult males	USEPA, 1991
			Absorption Factor	Compound Specific			USEPA, 1992
	(Soil EPC Calculated	RME	Exposure Duration	1	year	Upper bound time of employment for constr. worker	USEPA, 1991
	from Surface and		Averaging Time - Nc	365	days	1 year	USEPA, 1989
	Subsurface Soils)		Averaging Time - Car	25550	days	70 years, conventional human life span	USEPA, 1989
			Skin Contact Surface Area	5800	cm2	Hands, legs, arms, neck and head exposed, 25% of upper bound body skin area	USEPA, 1992
		RME	Soil to Skin Adherence Facto	1	mg/cm2	Upper bound soil to skin adherence factor	USEPA, 1992
			Exposure Frequency	250	days/yr	Assumes works 5 days/wk and 10 days/yr vacation	USEPA, 1991

Notes:
RME = Resonable Maximum Exposure

Car = Carcinogenic
Nc = Non-carcinogenic

Source References:
BPJ: Best Professional Judgement.
· USEPA, 1988: Superfund Exposure Assessment Manual
· USEPA, 1989: Risk Assessment Guidance for Superfund, Volume I (RAGS)
· USEPA, 1991: Supplemental Guidance, Standard Default Exposure Factors
· USEPA, 1992: Dermal Exposure Assessment, Principles and Applications
· USEPA, 1993: Superfund's Standard Default Exposure for the Central Tendency and Reasonable Maximum Exposure
· USEPA, 1997: Exposure Factors Handbook, Update to 1990 handbook

ATTACHMENT D TABLE 4

EXPOSURE FACTOR ASSUMPTIONS
FUTURE RECREATIONAL CHILD
SEAD 12-Remedial Investigation
Seneca Army Depot Activity

RECEPTOR	EXPOSURE ROUTE	RME/CT	PARAMETER	VALUE	UNITS	BASIS	SOURCE
FUTURE RECREATIONAL VISITOR (CHILD)	**Inhalation of Dust in Ambient Air** (Air EPC Calculated from Surface Soil Only)		Inhalation Rate	8.7	m3/day	Average inhalation rate for a child 1-12 years old.	USEPA, 1997
		RME	Body Weight	15	kg	Standard reference weight for children less than 6 years old.	USEPA, 1991,1993
			Averaging Time - Car	25550	days	70 years, conventional human life span	USEPA, 1989
			Exposure Frequency	14	days/yr	Assumes 2 weeks.	BPJ
		RME	Exposure Duration	5	years	Assumed	BPJ
			Averaging Time - Nc	1825	days	5 years	USEPA, 1989
	Ingestion of Soil (Soil EPC Calculated from Surface Soil Only)		Body Weight	15	kg	Standard reference weight for children less than 6 years old.	USEPA, 1991,1993
		RME	Fraction Ingested	1	(unitless)	100% ingestion, conservative assumption	BPJ
			Averaging Time - Car	25550	days	70 years, conventional human life span	USEPA, 1989
			Ingestion Rate	200	mg soil/day	Maximum IR for a child	USEPA, 1993
		RME	Exposure Frequency	14	days/yr	Assumes 2 weeks.	BPJ
			Exposure Duration	5	years	Assumed	BPJ
			Averaging Time - Nc	1825	days	5 years	USEPA, 1989
	Dermal Contact - Soil (Soil EPC Calculated from Surface Soil Only)		Body Weight	15	kg	Standard reference weight for children less than 6 years old.	USEPA, 1991,1993
		RME	Absorption Factor	Compound Specific			USEPA, 1992
			Averaging Time - Car	25550	days	70 years, conventional human life span	USEPA, 1989
			Skin Contact Surface Area	2300	cm2	Upper bound skin surface exposed to soil for child age 5-6.	USEPA, 1992
			Soil to Skin Adherence Fact	1	mg/cm2	Upper bound soil to skin adherence factor	USEPA, 1992
		RME	Exposure Frequency	14	days/yr	Assumes 2 weeks.	BPJ
			Exposure Duration	5	years	Assumed	BPJ
			Averaging Time - Nc	1825	days	5 years	USEPA, 1989
	Inhalation of Groundwater		Inhalation Rate	0.3	m3/hr	Inhalation rate for sedentary children ages 3-10	USEPA, 1997
		RME	Body Weight	15	kg	Standard reference weight for children less than 6 years old.	USEPA, 1991,1993
			Event Frequency	1	shower/day	Typical showering frequency for 90% of American population	USEPA, 1992
			Averaging Time - Car	25550	days	70 years, conventional human life span	USEPA, 1989
			Exposure Frequency	14	days/yr	Assumes 2 weeks.	BPJ
		RME	Event Duration	15	min/day	Upper bound shower duration	USEPA, 1992, 1997
			Exposure Duration	5	years	Assumed	BPJ
			Averaging Time - Nc	1825	days	5 years	USEPA, 1989
	Ingestion of Groundwater	RME	Body Weight	15	kg	Standard reference weight for children less than 6 years old.	USEPA, 1991,1993
			Averaging Time - Car	25550	days	70 years, conventional human life span	USEPA, 1989
			Ingestion Rate	1	liter/day	Approximate 90th percentile value for children 1-11 years old.	USEPA, 1997
		RME	Exposure Frequency	14	days/yr	Assumes 2 weeks.	BPJ
			Exposure Duration	5	years	Assumed	BPJ
			Averaging Time - Nc	1825	days	5 years	USEPA, 1989
	Dermal Contact - Groundwater	RME	Body Weight	15	kg	Standard reference weight for children less than 6 years old.	USEPA, 1991,1993
			Averaging Time - Car	25550	days	70 years, conventional human life span	USEPA, 1989
			Skin Contact Surface Area	9180	cm2	Upper bound skin surface area for children.	USEPA, 1992
		RME	Exposure Frequency	14	days/yr	Assumes 2 weeks.	BPJ
			Exposure Time	0.25	hours/day	Upper bound showering duration. (15 min)	USEPA, 1992
			Exposure Duration	5	years	Assumed	BPJ
			Averaging Time - Nc	1825	days	5 years	USEPA, 1989

ATTACHMENT D TABLE 4

EXPOSURE FACTOR ASSUMPTIONS
FUTURE RECREATIONAL CHILD
SEAD 12-Remedial Investigation
Seneca Army Depot Activity

RECEPTOR	EXPOSURE ROUTE	RME/CT	PARAMETER	VALUE	UNITS	BASIS	SOURCE
FUTURE RECREATIONAL VISITOR (CHILD)	**Dermal Contact - Surface Water**		Body Weight	15	kg	Standard reference weight for children less than 6 years old.	USEPA, 1991,1993
		RME	Exposure Time	1	hour/day	Upper bound water contact period.	USEPA, 1992
			Averaging Time - Car	25550	days	70 years, conventional human life span	USEPA, 1989
			Skin Contact Surface Area	4625	cm2	Feet and legs exposed; 25% of upper bound body skin area of a 12-15 year old	USEPA, 1991
		RME	Exposure Frequency	7	days/yr	Assumes contact occurs every second day.	BPJ
			Exposure Duration	5	years	Assumed	BPJ
			Averaging Time - Nc	1825	days	5 years	USEPA, 1989
	Dermal Contact - Sediment		Body Weight	15	kg	Standard reference weight for children less than 6 years old.	USEPA, 1991,1993
		RME & CT	Absorption Factor	Compound Specific			USEPA, 1992
			Averaging Time - Car	25550	days	70 years, conventional human life span	USEPA, 1989
			Skin Contact Surface Area	4625	cm2	Hands, legs, arms, neck, and head exposed, 25% of upper body.	USEPA, 1992
			Soil to Skin Adherence Fact	1	mg/cm2	Upper bound soil to skin adherence factor	USEPA, 1992
		RME	Exposure Frequency	7	days/yr	Assumes contact occurs every second day.	BPJ
			Exposure Duration	5	years	Assumed	BPJ
			Averaging Time - Nc	1825	days	5 years	USEPA, 1989
	Ingestion - Sediment		Body Weight	15	kg	Standard reference weight for children less than 6 years old.	USEPA, 1991,1993
		RME & CT	Fraction Ingested	1	(unitless)	100% ingestion, conservative assumption	BPJ
			Averaging Time - Car	25550	days	70 years, conventional human life span	USEPA, 1989
			Ingestion Rate	200	mg/day	Maximum IR for a child	USEPA, 1993
		RME	Exposure Frequency	7	days/yr	Assumes contact occurs every second day	BPJ
			Exposure Duration	5	years	Assumed	BPJ
			Averaging Time - Nc	1825	days	5 years	USEPA, 1989

Notes:
RME = Resonable Maximum Exposure

Car = Carcinogenic
Nc = Non-carcinogenic

Source References:
BPJ: Best Professional Judgement.
· USEPA, 1988: Superfund Exposure Assessment Manual
· USEPA, 1989: Risk Assessment Guidance for Superfund, Volume I (RAGS)
· USEPA, 1991: Supplemental Guidance, Standard Default Exposure Factors
· USEPA, 1992: Dermal Exposure Assessment, Principles and Applications
· USEPA, 1993: Superfund's Standard Default Exposure for the Central Tendency and Reasonable Maximum Exposure
· USEPA, 1997: Exposure Factors Handbook, Update to 1990 handbook

ATTACHMENT D TABLE 5

EXPOSURE FACTOR ASSUMPTIONS
ADULT RESIDENT
SEAD 12-Remedial Investigation
Seneca Army Depot Activity

RECEPTOR	EXPOSURE ROUTE	RME/CT	PARAMETER	VALUE	UNITS	BASIS	SOURCE
RESIDENT (ADULT)	**Inhalation of Dust in Ambient Air**		Inhalation Rate	20	m3/day	Assumed inhalation rate for adult receptors.	USEPA, 1991, 1993
	(Air EPC Calculated from Surface Soil Only)	RME	Body Weight	70	kg	Standard reference wieght for adult males.	USEPA, 1991
			Averaging Time - Car	25550	days	70 years, conventional human life span	USEPA, 1989
			Exposure Frequency	350	days/yr	Standard upper bound residential default	USEPA, 1993
		RME	Exposure Duration	24	years	Upper bound time in 1 residence: 6 years as a child, 24 years as an adult.	USEPA, 1991,1993
			Averaging Time - Nc	8760	days	24 years	USEPA, 1989
	Ingestion of Soil		Body Weight	70	kg	Standard reference wieght for adult males.	USEPA, 1991
		RME	Fraction Ingested	1	(unitless)	100% ingestion, conservative assumption	BPJ
	(Soil EPC Calculated from Surface Soil Only)		Averaging Time - Car	25550	days	70 years, conventional human life span	USEPA, 1989
			Ingestion Rate	100	mg soil/day	Upper bound residential adult exposure to indoor and outdoor dirt and dust.	USEPA, 1991
		RME	Exposure Frequency	350	days/yr	Standard upper bound residential default	USEPA, 1993
			Exposure Duration	24	years	Upper bound time in 1 residence: 6 years as a child, 24 years as an adult.	USEPA, 1991,1993
			Averaging Time - Nc	8760	days	24 years	USEPA, 1989
	Dermal Contact - Soil		Body Weight	70	kg	Standard reference wieght for adult males.	USEPA, 1991
		RME	Absorption Factor	Compound Specific			
	(Soil EPC Calculated from Surface Soil Only)		Averaging Time - Car	25550	days	70 years, conventional human life span	USEPA, 1989
			Skin Contact Surface Area	5800	cm2	Upper bound adult skin surface exposed to soils.	USEPA, 1992
			Soil to Skin Adherence Fact	1	mg/cm2	Upper bound soil to skin adherence factor	USEPA, 1992
		RME	Exposure Frequency	350	days/yr	Standard upper bound residential default	USEPA, 1993
			Exposure Duration	24	years	Upper bound time in 1 residence: 6 years as a child, 24 years as an adult.	USEPA, 1991,1993
			Averaging Time - Nc	8760	days	24 years	USEPA, 1989
	Inhalation of Groundwater		Inhalation Rate	0.5	m3/hr	Inhalation rate for sedentary adults	USEPA. 1997.
		RME	Body Weight	70	kg	Standard reference wieght for adult males.	USEPA, 1991
			Event Frequency	1	shower/day	Typical showering frequency for 90% of American population	USEPA, 1992
			Averaging Time - Car	25550	days	70 years, conventional human life span	USEPA, 1989
			Exposure Frequency	350	days/yr	Standard upper bound residential default	USEPA, 1993
		RME	Event Duration	15	min/day	Upper bound shower duration	USEPA, 1992, 1997
			Exposure Duration	24	years	Upper bound time in 1 residence: 6 years as a child, 24 years as an adult.	USEPA, 1991,1993
			Averaging Time - Nc	8760	days	24 years	USEPA, 1989
	Ingestion of Groundwater		Body Weight	70	kg	Standard reference wieght for adult males.	USEPA, 1991
		RME	Averaging Time - Car	25550	days	70 years, conventional human life span	USEPA, 1989
			Ingestion Rate	2	liter/day	90th percentile for adult residents.	USEPA. 1989.
		RME	Exposure Frequency	350	days/yr	Standard upper bound residential default	USEPA, 1993
			Exposure Duration	24	years	Upper bound time in 1 residence: 6 years as a child, 24 years as an adult.	USEPA, 1991,1993
			Averaging Time - Nc	8760	days	24 years	USEPA, 1989
	Dermal Contact - Groundwater		Body Weight	70	kg	Standard reference wieght for adult males.	USEPA, 1991
		RME	Averaging Time - Car	25550	days	70 years, conventional human life span	USEPA, 1989
			Skin Contact Surface Area	23,000	cm2	Upper bound total skin surface area for adults.	USEPA, 1992
		RME	Exposure Frequency	350	days/yr	Standard upper bound residential default	USEPA, 1993
			Exposure Time	0.25	hours/day	Upper bound of time spent in shower (15 minutes).	USEPA, 1992
			Exposure Duration	24	years	Upper bound time in 1 residence: 6 years as a child, 24 years as an adult.	USEPA, 1991,1993
			Averaging Time - Nc	8760	days	24 years	USEPA, 1989
	Dermal Contact - Surface Water		Body Weight	70	kg	Standard reference wieght for adult males.	USEPA, 1991
		RME	Exposure Time	1	hour/day	Upper bound water contact period.	USEPA, 1992
			Averaging Time - Car	25550	days	70 years, conventional human life span	USEPA, 1989
			Skin Contact Surface Area	8680	cm2	Upper bound adult skin surface area of legs, feet, arms and hands	USEPA, 1997
		RME	Exposure Frequency	45	days/yr	Assumes contact occurs every second day during summer months	BPJ
			Exposure Duration	24	years	Upper bound time in 1 residence: 6 years as a child, 24 years as an adult.	USEPA, 1991,1993
			Averaging Time - Nc	8760	days	24 years	USEPA, 1989

ATTACHMENT D TABLE 5

EXPOSURE FACTOR ASSUMPTIONS
ADULT RESIDENT
SEAD 12-Remedial Investigation
Seneca Army Depot Activity

RECEPTOR	EXPOSURE ROUTE	RME/CT	PARAMETER	VALUE	UNITS	BASIS	SOURCE
RESIDENT (ADULT)	**Dermal Contact - Sediment**		Body Weight	70	kg	Standard reference wieght for adult males.	USEPA, 1991
		RME	Absorption Factor	Compound Specific			USEPA, 1992
			Averaging Time - Car	25550	days	70 years, conventional human life span	USEPA, 1989
			Skin Contact Surface Area	8680	cm2	Adult male hands and forearms.	USEPA, 1992
			Soil to Skin Adherence Fact	1	mg/cm2	Upper bound soil to skin adherence factor	USEPA, 1992
		RME	Exposure Frequency	45	days/yr	Assumes contact occurs every second day during summer months	BPJ
			Exposure Duration	24	years	Upper bound time in 1 residence: 6 years as a child, 24 years as an adult.	USEPA, 1991,1993
			Averaging Time - Nc	8760	days	24 years	USEPA, 1989
	Ingestion - Sediment		Body Weight	70	kg	Standard reference wieght for adult males.	USEPA, 1991
		RME	Fraction Ingested	1	(unitless)	100% ingestion, conservative assumption	BPJ
			Averaging Time - Car	25550	days	70 years, conventional human life span	USEPA, 1989
			Ingestion Rate	100	mg/day	Upper bound residential adult exposure to indoor and outdoor dirt and dust.	USEPA, 1991
		RME	Exposure Frequency	45	days/yr	Assumes contact occurs every second day during summer months	BPJ
			Exposure Duration	24	years	Upper bound time in 1 residence: 6 years as a child, 24 years as an adult.	USEPA, 1991,1993
			Averaging Time - Nc	8760	days	24 years	USEPA, 1989

Notes:
RME = Resonable Maximum Exposure
Car = Carcinogenic
Nc = Non-carcinogenic

Source References:
BPJ: Best Professional Judgement.
· USEPA, 1988: Superfund Exposure Assessment Manual
· USEPA, 1989: Risk Assessment Guidance for Superfund, Volume I (RAGS)
· USEPA, 1991: Supplemental Guidance, Standard Default Exposure Factors
· USEPA, 1992: Dermal Exposure Assessment, Principles and Applications
· USEPA, 1993: Superfund's Standard Default Exposure for the Central Tendency and Reasonable Maximum Exposure
· USEPA, 1997: Exposure Factors Handbook, Draft update to 1990 handbook

ATTACHMENT D TABLE 6

EXPOSURE FACTOR ASSUMPTIONS
CHILD RESIDENT
SEAD 12-Remedial Investigation
Seneca Army Depot Activity

RECEPTOR	EXPOSURE ROUTE	RME/CT	PARAMETER	VALUE	UNITS	BASIS	SOURCE
RESIDENT (CHILD)	**Inhalation of Dust in Ambient Air** (Air EPC Calculated from Surface Soil Only)		Inhalation Rate	8.7	m3/day	Average inhalation rate for a child 1-12 years old.	USEPA, 1997
		RME	Body Weight	15	kg	Standard reference weight for children less than 6 years old.	USEPA, 1991,1993
			Averaging Time - Car	25550	days	70 years, conventional human life span	USEPA, 1989
			Exposure Frequency	350	days/yr	Standard upper bound residential default	USEPA, 1993
		RME	Exposure Duration	6	years	Upper bound time in 1 residence: 6 years as a child, 24 years as an adult.	USEPA, 1991,1993
			Averaging Time - Nc	2190	days	6 years.	USEPA, 1989
	Ingestion of Soil (Soil EPC Calculated from Surface Soil Only)		Body Weight	15	kg	Standard reference weight for children less than 6 years old.	USEPA, 1991,1993
		RME	Fraction Ingested	1	(unitless)	100% ingestion, conservative assumption	BPJ
			Averaging Time - Car	25550	days	70 years, conventional human life span	USEPA, 1989
			Ingestion Rate	200	mg soil/day	Maximum IR for a child	USEPA, 1993
		RME	Exposure Frequency	350	days/yr	Standard upper bound residential default	USEPA, 1993
			Exposure Duration	6	years	Upper bound time in 1 residence: 6 years as a child, 24 years as an adult.	USEPA, 1991,1993
			Averaging Time - Nc	2190	days	6 years	USEPA, 1989
	Dermal Contact - Soil (Soil EPC Calculated from Surface Soil Only)		Body Weight	15	kg	Standard reference weight for children less than 6 years old.	USEPA, 1991,1993
		RME	Absorption Factor	Compound Specific			USEPA, 1992
			Averaging Time - Car	25550	days	70 years, conventional human life span	USEPA, 1989
			Skin Contact Surface Area	2300	cm2	Upper bound skin surface exposed to soil for child age 5-6.	USEPA, 1992
			Soil to Skin Adherence Fact	1	mg/cm2	Upper bound soil to skin adherence factor	USEPA, 1992
		RME	Exposure Frequency	350	days/yr	Standard upper bound residential default	USEPA, 1993
			Exposure Duration	6	years	Upper bound time in 1 residence: 6 years as a child, 24 years as an adult.	USEPA, 1991,1993
			Averaging Time - Nc	2190	days	6 years.	USEPA, 1989
	Inhalation of Groundwater		Inhalation Rate	0.3	m3/hr	Inhalation rate for sedentary children ages 3-10	USEPA, 1997
		RME	Body Weight	15	kg	Standard reference weight for children less than 6 years old.	USEPA, 1991,1993
			Event Frequency	1	shower/day	Typical showering frequency for 90% of American population	USEPA, 1992
			Averaging Time - Car	25550	days	70 years, conventional human life span	USEPA, 1989
			Exposure Frequency	350	days/yr	Standard upper bound residential default	USEPA, 1993
		RME	Event Duration	15	min/day	Upper bound shower duration	USEPA, 1992,1997
			Exposure Duration	6	years	Upper bound time in 1 residence: 6 years as a child, 24 years as an adult.	USEPA, 1991,1993
			Averaging Time - Nc	2190	days	6 years	USEPA, 1989
	Ingestion of Groundwater		Body Weight	15	kg	Standard reference weight for children less than 6 years old.	USEPA, 1991,1993
		RME	Averaging Time - Car	25550	days	70 years, conventional human life span	USEPA, 1989
			Ingestion Rate	1	liter/day	Approximate 90th percentile value for children 1-11 years old.	USEPA, 1997
			Exposure Frequency	350	days/yr	Standard upper bound residential default	USEPA, 1993
		RME	Exposure Duration	6	years	Upper bound time in 1 residence: 6 years as a child, 24 years as an adult.	USEPA, 1991,1993
			Averaging Time - Nc	2190	days	6 years.	USEPA, 1989
	Dermal Contact - Groundwater		Body Weight	15	kg	Standard reference weight for children less than 6 years old.	USEPA, 1991,1993
		RME	Averaging Time - Car	25550	days	70 years, conventional human life span	USEPA, 1989
			Skin Contact Surface Area	9180	cm2	Upper bound skin surface area for children.	USEPA, 1992
			Exposure Frequency	350	days/yr	Standard upper bound residential default	USEPA, 1993
		RME	Exposure Time	0.25	hours/day	Upper bound showering duration. (15 min)	USEPA, 1992
			Exposure Duration	6	years	Upper bound time in 1 residence: 6 years as a child, 24 years as an adult.	USEPA, 1991,1993
			Averaging Time - Nc	2190	days	6 years.	USEPA, 1989
	Dermal Contact - Surface Water		Body Weight	15	kg	Standard reference weight for children less than 6 years old.	USEPA, 1991,1993
		RME	Exposure Time	1	hour/day	Upper bound water contact period.	USEPA, 1992
			Averaging Time - Car	25550	days	70 years, conventional human life span	USEPA, 1989
			Skin Contact Surface Area	2170	cm2	Upper bound child skin surface area of legs, feet, arms and hands	USEPA, 1997
		RME	Exposure Frequency	45	days/yr	Assumes contact occurs every second day during summer months	BPJ
			Exposure Duration	6	years	Upper bound time in 1 residence: 6 years as a child, 24 years as an adult.	USEPA, 1991,1993
			Averaging Time - Nc	2190	days	6 years.	USEPA, 1989

ATTACHMENT D TABLE 6

EXPOSURE FACTOR ASSUMPTIONS
CHILD RESIDENT
SEAD 12-Remedial Investigation
Seneca Army Depot Activity

RECEPTOR	EXPOSURE ROUTE	RME/CT	PARAMETER	VALUE	UNITS	BASIS	SOURCE
RESIDENT (CHILD)	**Dermal Contact - Sediment**		Body Weight	15	kg	Standard reference weight for children less than 6 years old.	USEPA, 1991,1993
		RME	Absorption Factor	Compound Specific			USEPA, 1992
			Averaging Time - Car	25550	days	70 years, conventional human life span	USEPA, 1989
			Skin Contact Surface Area	2170	cm2	Upper bound child skin surface area of legs, feet, arms and hands	USEPA, 1997
			Soil to Skin Adherence Fact	1	mg/cm2	Upper bound soil to skin adherence factor	USEPA, 1992
		RME	Exposure Frequency	45	days/yr	Assumes contact occurs every second day during summer months	BPJ
			Exposure Duration	6	years	Upper bound time in 1 residence: 6 years as a child, 24 years as an adult.	USEPA, 1991,1993
			Averaging Time - Nc	2190	days	6 years.	USEPA, 1989
	Ingestion - Sediment		Body Weight	15	kg	Standard reference weight for children less than 6 years old.	USEPA, 1991,1993
		RME	Fraction Ingested	1	(unitless)	100% ingestion, conservative assumption	BPJ
			Averaging Time - Car	25550	days	70 years, conventional human life span	USEPA, 1989
			Ingestion Rate	200	mg/day	Maximum IR for a child	USEPA, 1993
		RME	Exposure Frequency	45	days/yr	Assumes contact occurs every second day during summer months	BPJ
			Exposure Duration	6	years	Upper bound time in 1 residence: 6 years as a child, 24 years as an adult.	USEPA, 1991,1993
			Averaging Time - Nc	2190	days	6 years.	USEPA, 1989
			Ingestion Rate	100	mg/day	Average IR for a child	USEPA, 1993

Notes:
RME = Resonable Maximum Exposure
Car = Carcinogenic
Nc = Non-carcinogenic

Source References:
BPJ: Best Professional Judgement.
· USEPA, 1988: Superfund Exposure Assessment Manual
· USEPA, 1989: Risk Assessment Guidance for Superfund, Volume I (RAGS)
· USEPA, 1991: Supplemental Guidance, Standard Default Exposure Factors
· USEPA, 1992: Dermal Exposure Assessment, Principles and Applications
· USEPA, 1993: Superfund's Standard Default Exposure for the Central Tendency and Reasonable Maximum Exposure
· USEPA, 1997: Exposure Factors Handbook, Update to 1990 handbook

ATTACHMENT D

RISK CHARACTERIZATION, OTHER SITE MEDIA
(Surface Water, Sediment, Groundwater)

Attachment D Table 1
Groundwater Exposure Point Concentrations Summary
for Chemicals of Potential Concern

SEAD-12 - Remedial Investigation
Seneca Army Depot Activity

ANALYTE	No. of Valid Analyses	No. of Rejects	No. of Hits	Frequency (%)	Mean (mg/L)	Standard Deviation (mg/L)	Max Hit (mg/L)	Normal?	95% UCL of Mean (mg/L)	Exposure Point Concentration (EPC) (mg/L)
Volatile Organics										
1,1,1-Trichloroethane	84	0	1	0.01	1.92E-03	7.90E-03	1.70E-03	FALSE	1.13E-03	1.13E-03
1,2-Dichloroethene (total)	7	0	1	0.14	8.57E-03	9.45E-03	3.00E-02	FALSE	1.79E-02	1.79E-02
Acetone	84	0	6	0.07	5.87E-03	2.34E-02	9.00E-03	FALSE	3.99E-03	3.99E-03
Toluene	84	0	5	0.06	1.94E-03	7.90E-03	3.10E-03	FALSE	1.16E-03	1.16E-03
Trichloroethene	84	0	3	0.04	3.88E-02	2.45E-01	1.60E+00	FALSE	2.41E-03	2.41E-03
Semi Volatile Organics										
1,4-Dichlorobenzene	78	6	8	0.1	4.94E-04	1.63E-04	9.30E-05	FALSE	6.20E-04	9.30E-05
Benzo(a)pyrene	78	6	2	0.03	5.29E-04	1.05E-04	9.70E-05	FALSE	5.78E-04	9.70E-05
Benzo(b)fluoranthene	78	6	1	0.01	5.35E-04	9.11E-05	7.60E-05	FALSE	5.67E-04	7.60E-05
Benzo(ghi)perylene	78	6	4	0.05	5.19E-04	1.24E-04	1.80E-04	FALSE	5.90E-04	1.80E-04
Benzo(k)fluoranthene	78	6	1	0.01	5.35E-04	9.02E-05	9.10E-05	FALSE	5.64E-04	9.10E-05
Bis(2-Ethylhexyl)phthalate	83	0	3	0.04	6.33E-03	3.38E-02	2.30E-01	FALSE	2.06E-03	2.06E-03
Butylbenzylphthalate	78	6	1	0.01	5.36E-04	9.19E-05	6.40E-05	FALSE	5.71E-04	6.40E-05
Di-n-butylphthalate	78	6	8	0.1	4.91E-04	1.55E-04	2.10E-04	FALSE	5.83E-04	2.10E-04
Di-n-octylphthalate	78	6	6	0.08	5.13E-04	1.33E-04	4.10E-04	FALSE	6.28E-04	4.10E-04
Diethyl phthalate	84	0	11	0.13	8.74E-04	1.30E-03	4.30E-03	FALSE	1.03E-03	1.03E-03
Indeno(1,2,3-cd)pyrene	78	6	1	0.01	5.36E-04	8.96E-05	1.00E-04	FALSE	5.62E-04	1.00E-04
Phenol	78	6	5	0.06	5.17E-04	1.17E-04	4.30E-04	FALSE	5.61E-04	4.30E-04
Pyrene	78	6	2	0.03	5.28E-04	1.05E-04	8.00E-05	FALSE	5.80E-04	8.00E-05
Pesticides/PCBS										
Beta-BHC	80	4	1	0.01	3.31E-06	3.75E-06	3.40E-06	FALSE	3.30E-06	3.30E-06
Gamma-Chlordane	84	0	1	0.01	4.53E-06	6.48E-06	5.60E-06	FALSE	4.41E-06	4.41E-06
Heptachlor	78	6	1	0.01	2.71E-06	3.05E-07	2.70E-06	FALSE	2.76E-06	2.70E-06
Metals										
Barium	85	0	85	1	8.74E-02	3.74E-02	1.89E-01	TRUE	9.42E-02	9.42E-02
Cobalt	85	0	18	0.21	1.54E-03	2.18E-03	1.52E-02	FALSE	1.57E-03	1.57E-03

Attachment D Table 2
Site Surface Water Exposure Point Concentration Summary
for Chemicals of Potential Concern

SEAD-12 Remedial Investigation
Seneca Army Depot Activity

ANALYTE	No. of Valid Analyses	No. of Rejects	No. of Hits	Frequency (%)	Mean (mg/L)	Standard Deviation (mg/L)	Max Hit (mg/L)	Normal?	95% UCL of Mean (mg/L)	Exposure Point Concentration (EPC) (mg/L)
Volatile Organics										
Acetone	49	0	3	0.06	2.93E-03	1.33E-03	1.00E-02	FALSE	3.11E-03	3.11E-03
Toluene	46	3	1	0.02	4.98E-04	1.47E-05	4.00E-04	FALSE	5.13E-04	4.00E-04
Trichloroethene	49	0	1	0.02	7.86E-04	1.09E-03	1.00E-03	FALSE	8.00E-04	8.00E-04
Semi Volatile Organics										
Benzo(a)anthracene	49	0	1	0.02	7.49E-04	9.45E-04	2.75E-03	FALSE	7.73E-04	7.73E-04
Benzo(a)pyrene	49	0	1	0.02	7.50E-04	9.47E-04	2.80E-03	FALSE	7.74E-04	7.74E-04
Benzo(k)fluoranthene	49	0	1	0.02	7.54E-04	9.56E-04	3.00E-03	FALSE	7.78E-04	7.78E-04
Bis(2-Ethylhexyl)phthalate	49	0	4	0.08	1.02E-03	1.94E-03	1.20E-02	FALSE	1.00E-03	1.00E-03
Butylbenzylphthalate	46	3	9	0.2	4.46E-04	1.76E-04	2.00E-04	FALSE	5.51E-04	2.00E-04
Chrysene	49	0	1	0.02	7.49E-04	9.45E-04	2.75E-03	FALSE	7.73E-04	7.73E-04
Di-n-butylphthalate	49	0	5	0.1	7.25E-04	9.80E-04	2.00E-03	FALSE	8.39E-04	8.39E-04
Diethyl phthalate	46	3	11	0.24	4.28E-04	1.93E-04	4.60E-04	FALSE	5.89E-04	4.60E-04
Pentachlorophenol	49	0	1	0.02	1.90E-03	2.42E-03	7.25E-03	FALSE	1.96E-03	1.96E-03
Pyrene	49	0	1	0.02	7.54E-04	9.56E-04	3.00E-03	FALSE	7.78E-04	7.78E-04
Pesticides/PCBS										
4,4'-DDE	46	3	1	0.02	5.26E-06	7.66E-07	5.60E-06	FALSE	5.41E-06	5.41E-06
4,4'-DDT	49	0	1	0.02	9.26E-06	1.36E-05	6.20E-05	FALSE	9.46E-06	9.46E-06
Aldrin	48	1	1	0.02	3.64E-06	4.70E-06	4.10E-06	FALSE	3.72E-06	3.72E-06
Alpha-BHC	49	0	10	0.2	7.34E-06	1.39E-05	9.00E-05	FALSE	7.76E-06	7.76E-06
Alpha-Chlordane	46	3	1	0.02	3.16E-06	3.43E-06	3.60E-06	FALSE	3.25E-06	3.25E-06
Aroclor-1242	49	0	2	0.04	9.45E-05	1.28E-04	4.40E-04	FALSE	9.94E-05	9.94E-05
Beta-BHC	49	0	5	0.1	4.58E-06	6.06E-06	1.70E-05	FALSE	4.83E-06	4.83E-06
Delta-BHC	49	0	3	0.06	4.08E-06	5.73E-06	4.60E-06	FALSE	4.14E-06	4.14E-06
Endrin aldehyde	49	0	2	0.04	8.28E-06	1.13E-05	1.20E-05	FALSE	8.51E-06	8.51E-06
Endrin ketone	49	0	1	0.02	8.30E-06	1.13E-05	1.50E-05	FALSE	8.54E-06	8.54E-06
Gamma-BHC/Lindane	49	0	5	0.1	6.10E-06	1.38E-05	9.20E-05	FALSE	5.70E-06	5.70E-06
Heptachlor	49	0	3	0.06	4.22E-06	5.73E-06	6.30E-06	FALSE	4.35E-06	4.35E-06
Heptachlor epoxide	47	2	2	0.04	3.15E-06	3.39E-06	3.30E-06	FALSE	3.23E-06	3.23E-06
Hexachlorobenzene	46	0	3	0.07	5.68E-06	2.48E-06	2.00E-05	FALSE	5.98E-06	5.98E-06
Metals										
Cadmium	49	0	7	0.14	2.73E-04	3.08E-04	2.10E-03	FALSE	2.92E-04	2.92E-04
Mercury	49	0	4	0.08	2.27E-04	2.20E-04	1.10E-04	FALSE	3.60E-04	1.10E-04
Zinc	49	0	49	1	2.19E-02	2.17E-02	1.05E-01	FALSE	2.81E-02	2.81E-02

Attachment D Table 3
Site Sediment Exposure Point Concentrations Summary
for Chemicals of Potential Concern

SEAD-12 - Remedial Investigation
Seneca Army Depot Activity

ANALYTE	No. of Valid Analyses	No. of Rejects	No. of Hits	Frequency (%)	Mean (mg/kg)	Standard Deviation (mg/kg)	Max Hit (mg/kg)	Normal?	95% UCL of Mean (mg/kg)	Exposure Point Concentration (EPC) (mg/kg)
Volatile Organics										
1,1,1-Trichloroethane	50	0	1	0.02	9.24E-03	3.59E-03	3.00E-03	FALSE	1.00E-02	3.00E-03
Acetone	50	0	20	0.4	1.95E-02	1.97E-02	9.50E-02	FALSE	2.32E-02	2.32E-02
Methyl chloride	50	0	2	0.04	9.24E-03	2.97E-03	1.70E-02	FALSE	9.84E-03	9.84E-03
Methyl ethyl ketone	50	0	1	0.02	9.45E-03	3.49E-03	1.10E-02	FALSE	1.01E-02	1.01E-02
Tetrachloroethene	50	0	2	0.04	9.12E-03	3.70E-03	4.00E-03	FALSE	1.01E-02	4.00E-03
Toluene	50	0	5	0.1	9.52E-03	3.92E-03	2.00E-02	FALSE	1.04E-02	1.04E-02
Trichloroethene	50	0	4	0.08	9.33E-03	3.96E-03	1.80E-02	FALSE	1.05E-02	1.05E-02
Semi Volatile Organics										
2-Methylnaphthalene	50	0	11	0.22	7.24E-02	7.90E-02	3.60E-02	FALSE	1.04E-01	3.60E-02
4-Chlorophenyl phenyl ether	50	0	1	0.02	8.33E-02	7.43E-02	6.00E-03	FALSE	9.78E-02	6.00E-03
4-Methylphenol	50	0	5	0.1	8.35E-02	7.57E-02	1.50E-01	FALSE	9.85E-02	9.85E-02
Acenaphthene	50	0	21	0.42	7.49E-02	8.51E-02	5.00E-01	FALSE	1.01E-01	1.01E-01
Acenaphthylene	50	0	3	0.06	8.12E-02	7.56E-02	1.50E-02	FALSE	9.97E-02	1.50E-02
Anthracene	50	0	25	0.5	8.31E-02	1.24E-01	8.30E-01	FALSE	1.14E-01	1.14E-01
Benzo(a)anthracene	50	0	37	0.74	1.97E-01	4.47E-01	3.10E+00	FALSE	2.86E-01	2.86E-01
Benzo(a)pyrene	50	0	39	0.78	2.09E-01	4.77E-01	3.30E+00	FALSE	2.99E-01	2.99E-01
Benzo(b)fluoranthene	50	0	41	0.82	2.36E-01	4.69E-01	3.20E+00	FALSE	3.89E-01	3.89E-01
Benzo(ghi)perylene	50	0	36	0.72	1.60E-01	3.08E-01	2.10E+00	FALSE	2.13E-01	2.13E-01
Benzo(k)fluoranthene	50	0	28	0.56	1.76E-01	3.97E-01	2.70E+00	FALSE	2.12E-01	2.12E-01
Bis(2-Ethylhexyl)phthalate	50	0	7	0.14	1.88E-01	7.00E-01	5.00E+00	FALSE	1.42E-01	1.42E-01
Butylbenzylphthalate	50	0	9	0.18	7.74E-02	7.66E-02	4.20E-02	FALSE	9.32E-02	4.20E-02
Carbazole	50	0	26	0.52	9.86E-02	1.39E-01	9.10E-01	FALSE	1.29E-01	1.29E-01
Chrysene	50	0	41	0.82	2.26E-01	4.71E-01	3.20E+00	FALSE	3.45E-01	3.45E-01
Di-n-butylphthalate	50	0	15	0.3	6.97E-02	7.77E-02	1.34E-01	FALSE	9.93E-02	9.93E-02
Di-n-octylphthalate	50	0	10	0.2	7.04E-02	5.96E-02	1.40E-01	FALSE	9.82E-02	9.82E-02
Dibenz(a,h)anthracene	50	0	28	0.56	8.85E-02	1.29E-01	8.60E-01	FALSE	1.13E-01	1.13E-01
Dibenzofuran	50	0	15	0.3	6.98E-02	7.85E-02	6.40E-02	FALSE	9.12E-02	6.40E-02
Diethyl phthalate	50	0	7	0.14	7.75E-02	7.71E-02	4.00E-02	FALSE	1.02E-01	4.00E-02
Fluoranthene	50	0	44	0.88	3.88E-01	9.20E-01	6.20E+00	FALSE	8.07E-01	8.07E-01
Fluorene	50	0	19	0.38	7.06E-02	6.98E-02	3.40E-01	FALSE	9.30E-02	9.30E-02
Hexachlorobenzene	50	0	1	0.02	8.33E-02	7.43E-02	6.20E-03	FALSE	9.76E-02	6.20E-03
Indeno(1,2,3-cd)pyrene	50	0	36	0.72	1.47E-01	2.93E-01	2.00E+00	FALSE	1.94E-01	1.94E-01
Naphthalene	50	0	6	0.12	7.79E-02	7.59E-02	4.90E-02	FALSE	9.52E-02	4.90E-02
Phenanthrene	50	0	42	0.84	2.29E-01	4.77E-01	3.10E+00	FALSE	4.36E-01	4.36E-01
Pyrene	50	0	43	0.86	3.33E-01	7.90E-01	5.40E+00	FALSE	6.64E-01	6.64E-01
Pesticides/PCBS										
4,4'-DDD	50	0	6	0.12	7.04E-03	1.80E-02	1.10E-01	FALSE	6.14E-03	6.14E-03
4,4'-DDE	50	0	10	0.2	7.10E-03	1.42E-02	7.60E-02	FALSE	6.86E-03	6.86E-03
4,4'-DDT	50	0	7	0.14	7.73E-03	2.79E-02	2.00E-01	FALSE	5.89E-03	5.89E-03
Alpha-Chlordane	50	0	2	0.04	1.61E-03	6.47E-04	3.20E-03	FALSE	1.73E-03	1.73E-03
Aroclor-1254	50	0	4	0.08	5.62E-02	1.66E-01	*1.20E+00*	FALSE	4.75E-02	4.75E-02
Aroclor-1260	50	0	2	0.04	3.06E-02	1.13E-02	3.70E-02	FALSE	3.26E-02	3.26E-02
Endosulfan I	50	0	2	0.04	1.59E-03	6.56E-04	3.60E-03	FALSE	1.71E-03	1.71E-03
Endrin	50	0	2	0.04	3.15E-03	1.30E-03	6.70E-03	FALSE	3.40E-03	3.40E-03
Endrin aldehyde	50	0	2	0.04	3.21E-03	1.45E-03	7.60E-03	FALSE	3.47E-03	3.47E-03
Endrin ketone	50	0	2	0.04	3.48E-03	2.94E-03	2.20E-02	FALSE	3.73E-03	3.73E-03
Heptachlor epoxide	50	0	3	0.06	1.89E-03	1.62E-03	1.10E-02	FALSE	2.04E-03	2.04E-03
Metals										
Arsenic	50	0	48	0.96	5.35E+00	3.44E+00	1.91E+01	FALSE	6.64E+00	6.64E+00
Copper	50	0	50	1	5.14E+01	1.62E+02	1.16E+03	FALSE	4.58E+01	4.58E+01
Lead	50	0	42	0.84	2.45E+01	2.95E+01	2.15E+02	FALSE	2.85E+01	2.85E+01
Magnesium	50	0	50	1	1.06E+04	8.22E+03	4.81E+04	FALSE	1.27E+04	1.27E+04
Vanadium	50	0	50	1	2.38E+01	1.02E+01	7.03E+01	FALSE	2.77E+01	2.77E+01
Zinc	50	0	45	0.9	2.30E+02	3.75E+02	2.65E+03	FALSE	2.77E+02	2.77E+02

ATTACHMENT D TABLE 4 (Groundwater)
CALCULATION OF INTAKE AND RISK FROM INHALATION OF GROUNDWATER (WHILE SHOWERING)
REASONABLE MAXIMUM EXPOSURE (RME) - SEAD-12
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CA \times IR \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):
CA = Chemical Concentration in Air
IR = Inhalation Rate
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Inhalation RfD	Carc. Slope Inhalation	EPC* Air	Current Site Worker				Future Outdoor Park Worker				Future Recreational Visitor (Child)				Future Construction Worker			
				Intake (mg/kg-day)		Hazard Quotient	Cancer Risk	Intake (mg/kg-day)		Hazard Quotient	Cancer Risk	Intake (mg/kg-day)		Hazard Quotient	Cancer Risk	Intake (mg/kg-day)		Hazard Quotient	Cancer Risk
	(mg/kg-day)	(mg/kg-day)-1	(mg/m³)	(Nc)	(Car)			(Nc)	(Car)			(Nc)	(Car)			(Nc)	(Car)		
Volatile Organics																			
1,1,1-Trichloroethane	6.28E-01	NA	1.04E-05	Inhalation of Groundwater Not Applicable for Current Site Worker				Inhalation of Groundwater Not Applicable for Future Outdoor Park Worker				1.33E-09		2E-09		Inhalation of Groundwater Not Applicable for Future Construction Worker			
1,2-Dichloroethene (total)	NA	NA	4.48E-02																
Acetone	NA	NA	1.15E-02																
Toluene	1.14E-01	NA	3.31E-03									4.23E-07		4E-06					
Trichloroethene	NA	6.00E-03	7.59E-03										6.93E-08		4E-10				
Semivolatile Organics																			
1,4-Dichlorobenzene	2.28E-01	NA	1.84E-08									2.36E-12		1E-11					
Benzo(a)pyrene	NA	3.85E+00	1.57E-08										1.43E-13		6E-13				
Benzo(b)fluoranthene	NA	3.85E-01	9.59E-09										8.76E-14		3E-14				
Benzo(ghi)perylene	NA	NA	9.18E-08																
Benzo(k)fluoranthene	NA	3.85E-01	4.68E-05										4.28E-10		2E-10				
Bis(2-Ethylhexyl)phthalate	NA	NA	4.18E-08																
Butylbenzylphthalate	NA	NA	1.30E-08																
Di-n-butylphthalate	NA	NA	4.27E-08																
Di-n-octylphthalate	NA	NA	8.33E-08																
Diethyl phthalate	NA	NA	2.09E-07																
Indeno(1,2,3-cd)pyrene	NA	3.85E-01	2.03E-08										1.86E-13		7E-14				
Phenol	NA	NA	8.74E-08																
Pyrene	NA	NA	1.63E-08																
Pesticides/PCBs																			
Beta-BHC	NA	1.86E+00	2.36E-08										2.16E-13		4E-13				
Gamma-Chlordane	2.00E-04	3.50E-01	1.16E-08									1.48E-12	1.06E-13	7E-09	4E-14				
Heptachlor	NA	4.55E+00	8.77E-06										8.01E-11		4E-10				
Metals																			
Barium	1.43E-04	NA	NA																
Cobalt	1.71E-06	3.15E+01	NA																
Total Hazard Quotient and Cancer Risk:														**3.7E-06**	**9.5E-10**				

Assumptions for Future Recreational Visitor (Child)

BW =	15	kg
IR =	0.05	m3/day
EF =	14	days/year
ED =	5	years
AT (Nc) =	1,825	days
AT (Car) =	25,550	days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.
* EPC air is the concentration of chemical available for inhalation after accounting for partitioning between the air and water in the shower. The calculation of the EPC air is shown in Table L-10.

ATTACHMENT D TABLE 4 (Groundwater)
CALCULATION OF INTAKE AND RISK FROM INHALATION OF GROUNDWATER (WHILE SHOWERING)
REASONABLE MAXIMUM EXPOSURE (RME) - SEAD-12
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CA \times IR \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):

CA = Chemical Concentration in Air
IR = Inhalation Rate
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Inhalation RfD	Carc. Slope Inhalation	EPC* Air	Future Resident (Adult)				Future Resident (Child)				Resident
				Intake (mg/kg-day)		Hazard Quotient	Contribution to Lifetime	Intake (mg/kg-day)		Hazard Quotient	Contribution to Lifetime	Total Lifetime
	(mg/kg-day)	(mg/kg-day)-1	(mg/m³)	(Nc)	(Car)		Cancer Risk	(Nc)	(Car)		Cancer Risk	Cancer Risk
Volatile Organics												
1,1,1-Trichloroethane	6.28E-01	NA	1.04E-05	1.78E-08		3E-08		5.34E-08		9E-08		
1,2-Dichloroethene (total)	NA	NA	4.48E-02									
Acetone	NA	NA	1.15E-02									
Toluene	1.14E-01	NA	3.31E-03	5.66E-06		5E-05		1.70E-05		1E-04		
Trichloroethene	NA	6.00E-03	7.59E-03		4.46E-06		3E-08		3.12E-06		2E-08	5E-08
								0.00E+00				
Semivolatile Organics								0.00E+00				
1,4-Dichlorobenzene	2.28E-01	NA	1.84E-08	3.16E-11		1E-10		9.45E-11		4E-10		
Benzo(a)pyrene	NA	3.85E+00	1.57E-08		9.20E-12		4E-11		6.44E-12		2E-11	6E-11
Benzo(b)fluoranthene	NA	3.85E-01	9.59E-09		5.63E-12		2E-12		3.94E-12		2E-12	4E-12
Benzo(ghi)perylene	NA	NA	9.18E-08									
Benzo(k)fluoranthene	NA	3.85E-01	4.68E-05		2.75E-08		1E-08		1.92E-08		7E-09	2E-08
Bis(2-Ethylhexyl)phthalate	NA	NA	4.18E-08									
Butylbenzylphthalate	NA	NA	1.30E-08									
Di-n-butylphthalate	NA	NA	4.27E-08									
Di-n-octylphthalate	NA	NA	8.33E-08									
Diethyl phthalate	NA	NA	2.09E-07									
Indeno(1,2,3-cd)pyrene	NA	3.85E-01	2.03E-08		1.19E-11		5E-12		8.35E-12		3E-12	8E-12
Phenol	NA	NA	8.74E-08									
Pyrene	NA	NA	1.63E-08									
								0.00E+00				
Pesticides/PCBs								0.00E+00				
Beta-BHC	NA	1.86E+00	2.36E-08		1.39E-11		3E-11		9.71E-12		2E-11	4E-11
Gamma-Chlordane	2.00E-04	3.50E-01	1.16E-08	1.98E-11	6.80E-12	1E-07	2E-12	5.94E-11	4.76E-12	3E-07	2E-12	4E-12
Heptachlor	NA	4.55E+00	8.77E-06		5.15E-09		2E-08		3.60E-09		2E-08	4E-08
Metals												
Barium	1.43E-04	NA	NA									
Cobalt	1.71E-06	3.15E+01	NA									
Total Hazard Quotient and Cancer Risk:						**5.0E-05**	**6.1E-08**			**1.5E-04**	**4.3E-08**	**1.0E-07**

Assumptions for Future Resident (Adult)			Assumptions for Future Resident (Child)		
BW =	70	kg	BW =	15	kg
IR =	0.13	m3/day	IR =	0.08	m3/day
EF =	350	days/year	EF =	350	days/year
ED =	24	years	ED =	6	years
AT (Nc) =	8,760	days	AT (Nc) =	2,190	days
AT (Car) =	25,550	days	AT (Car) =	25,550	days

6.1E-08 4.3E-08 1.0E-07

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.
* EPC air is the concentration of chemical available for inhalation after accounting for partitioning between the air and water in the shower. The calculation of the EPC air is shown in Table L-10.

ATTACHMENT D TABLE 5 (Groundwater)
CALCULATION OF INTAKE AND RISK FROM THE INGESTION OF GROUNDWATER
REASONABLE MAXIMUM EXPOSURE (RME) - SEAD-12
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CW \times IR \times EF \times ED}{BW \times AT}$

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Variables (Assumptions for Each Receptor are Listed at the Bottom):

CW = Chemical Concentration in Groundwater, from Groundwater EPC Data

Equation for Contribution to Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

IR = Ingestion Rate ED=Exposure Duration

Equation for Total Lifetime Cancer Risk = Adult Contribution + Child Contribution

EF = Exposure Frequency BW=Bodyweight AT=Averaging Time

Analyte	Oral RfD (mg/kg-day)	Carc. Slope Oral (mg/kg-day)-1	EPC Groundwater (mg/liter)	Future Outdoor Park Worker Intake (mg/kg-day) (Nc)	Future Outdoor Park Worker Intake (mg/kg-day) (Car)	Future Outdoor Park Worker Hazard Quotient	Future Outdoor Park Worker Cancer Risk	Future Recreational Visitor (Child) Intake (mg/kg-day) (Nc)	Future Recreational Visitor (Child) Intake (mg/kg-day) (Car)	Future Recreational Visitor (Child) Hazard Quotient	Future Recreational Visitor (Child) Cancer Risk
Volatile Organics											
1,1,1-Trichloroethane	2.80E-01	NA	1.13E-03	7.74E-06		3E-05		2.89E-06		1E-05	
1,2-Dichloroethene (total)	9.00E-03	NA	1.79E-02	1.23E-04		1E-02		4.58E-05		5E-03	
Acetone	1.00E-01	NA	3.99E-03	2.73E-05		3E-04		1.02E-05		1E-04	
Toluene	2.00E-01	NA	1.16E-03	7.95E-06		4E-05		2.97E-06		1E-05	
Trichloroethene	NA	1.10E-02	2.41E-03		5.90E-06		6E-08		4.40E-07		5E-09
Semivolatile Organics											
1,4-Dichlorobenzene	NA	2.40E-02	9.30E-05		2.27E-07		5E-09		1.70E-08		4E-10
Benzo(a)pyrene	NA	7.30E+00	9.70E-05		2.37E-07		2E-06		1.77E-08		1E-07
Benzo(b)fluoranthene	NA	7.30E-01	7.60E-05		1.86E-07		1E-07		1.39E-08		1E-08
Benzo(ghi)perylene	NA	NA	1.80E-04								
Benzo(k)fluoranthene	NA	7.30E-02	9.10E-05		2.23E-07		2E-08		1.66E-08		1E-09
Bis(2-Ethylhexyl)phthalate	2.00E-02	1.40E-02	2.06E-04	1.41E-06	5.04E-07	7E-05	7E-09	5.27E-07	3.76E-08	3E-05	5E-10
Butylbenzylphthalate	2.00E-01	NA	6.40E-05	4.38E-07		2E-06		1.64E-07		8E-07	
Di-n-butylphthalate	1.00E-01	NA	2.10E-04	1.44E-06		1E-05		5.37E-07		5E-06	
Di-n-octylphthalate	2.00E-02	NA	4.10E-04	2.81E-06		1E-04		1.05E-06		5E-05	
Diethyl phthalate	8.00E-01	NA	1.03E-03	7.05E-06		9E-06		2.63E-06		3E-06	
Indeno(1,2,3-cd)pyrene	NA	7.30E-01	1.00E-04		2.45E-07		2E-07		1.83E-08		1E-08
Phenol	6.00E-01	NA	4.30E-04	2.95E-06		5E-06		1.10E-06		2E-06	
Pyrene	3.00E-02	NA	8.00E-05	5.48E-07		2E-05		2.05E-07		7E-06	
Pesticides/PCBs											
Beta-BHC	NA	1.80E+00	3.30E-06		8.07E-09		1E-08		6.03E-10		1E-09
Gamma-Chlordane	5.00E-04	3.50E-01	4.41E-06	3.02E-08	1.08E-08	6E-05	4E-09	1.13E-08	8.05E-10	2E-05	3E-10
Heptachlor	5.00E-04	4.50E+00	2.70E-06	1.85E-08	6.60E-09	4E-05	3E-08	6.90E-09	4.93E-10	1E-05	2E-09
Metals											
Barium	7.00E-02	NA	9.42E-02	6.45E-04		9E-03		2.41E-04		3E-03	
Cobalt	3.00E-04	NA	1.57E-03	1.08E-05		4E-02		4.01E-06		1E-02	
Total Hazard Quotient and Cancer Risk:						**5.9E-02**	**2.2E-06**			**2.2E-02**	**1.6E-07**

Assumptions for Future Outdoor Park Worker			Assumptions for Future Recreational Visitor (Child)		
BW =	70	kg	BW =	15	kg
IR =	1	liter/day	IR =	1	liter/day
EF =	175	days/year	EF =	14	days/year
ED =	25	years	ED =	5	years
AT (Nc) =	9,125	days	AT (Nc) =	1,825	days
AT (Car) =	25,550	days	AT (Car) =	25,550	days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.

ATTACHMENT D TABLE 5 (Groundwater)
CALCULATION OF INTAKE AND RISK FROM THE INGESTION OF GROUNDWATER
REASONABLE MAXIMUM EXPOSURE (RME) - SEAD-12
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CW \times IR \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):

CW = Chemical Concentration in Groundwater, from Groundwater EPC Data
IR = Ingestion Rate
EF = Exposure Frequency
ED=Exposure Duration
BW=Bodyweight
AT=Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Contribution to Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Equation for Total Lifetime Cancer Risk = Adult Contribution + Child Contribution

Analyte	Oral RfD (mg/kg-day)	Carc. Slope Oral (mg/kg-day)-1	EPC Groundwater (mg/liter)	Future Resident (Adult) Intake (mg/kg-day) (Nc)	Future Resident (Adult) Intake (mg/kg-day) (Car)	Future Resident (Adult) Hazard Quotient	Future Resident (Adult) Cancer Risk	Future Resident (Child) Intake (mg/kg-day) (Nc)	Future Resident (Child) Intake (mg/kg-day) (Car)	Future Resident (Child) Hazard Quotient	Future Resident (Child) Cancer Risk	Resident Total Lifetime Cancer Risk
Volatile Organics												
1,1,1-Trichloroethane	2.80E-01	NA	1.13E-03	3.10E-05		1E-04		7.22E-05		3E-04		
1,2-Dichloroethene (total)	9.00E-03	NA	1.79E-02	4.90E-04		5E-02		1.14E-03		1.27E-01		
Acetone	1.00E-01	NA	3.99E-03	1.09E-04		1E-03		2.55E-04		3E-03		
Toluene	2.00E-01	NA	1.16E-03	3.18E-05		2E-04		7.42E-05		4E-04		
Trichloroethene	NA	1.10E-02	2.41E-03		2.26E-05		2E-07		1.32E-05		1E-07	4E-07
Semivolatile Organics												
1,4-Dichlorobenzene	NA	2.40E-02	9.30E-05		8.74E-07		2E-08		5.10E-07		1E-08	3E-08
Benzo(a)pyrene	NA	7.30E+00	9.70E-05		9.11E-07		7E-06		5.32E-07		4E-06	1.05E-05
Benzo(b)fluoranthene	NA	7.30E-01	7.60E-05		7.14E-07		5E-07		4.16E-07		3E-07	8E-07
Benzo(ghi)perylene	NA	NA	1.80E-04									
Benzo(k)fluoranthene	NA	7.30E-02	9.10E-05		8.55E-07		6E-08		4.99E-07		4E-08	1E-07
Bis(2-Ethylhexyl)phthalate	2.00E-02	1.40E-02	2.06E-04	5.64E-06	1.94E-06	3E-04	3E-08	1.32E-05	1.13E-06	7E-04	2E-08	4E-08
Butylbenzylphthalate	2.00E-01	NA	6.40E-05	1.75E-06		9E-06		4.09E-06		2E-05		
Di-n-butylphthalate	1.00E-01	NA	2.10E-04	5.75E-06		6E-05		1.34E-05		1E-04		
Di-n-octylphthalate	2.00E-02	NA	4.10E-04	1.12E-05		6E-04		2.62E-05		1E-03		
Diethyl phthalate	8.00E-01	NA	1.03E-03	2.82E-05		4E-05		6.58E-05		8E-05		
Indeno(1,2,3-cd)pyrene	NA	7.30E-01	1.00E-04		9.39E-07		7E-07		5.48E-07		4E-07	1E-06
Phenol	6.00E-01	NA	4.30E-04	1.18E-05		2E-05		2.75E-05		5E-05		
Pyrene	3.00E-02	NA	8.00E-05	2.19E-06		7E-05		5.11E-06		2E-04		
Pesticides/PCBs												
Beta-BHC	NA	1.80E+00	4.41E-06		3.10E-08		6E-08		1.81E-08		3E-08	9E-08
Gamma-Chlordane	5.00E-04	3.50E-01	2.70E-06	1.21E-07	4.14E-08	2E-04	1E-08	2.82E-07	2.42E-08	6E-04	8E-09	2E-08
Heptachlor	5.00E-04	4.50E+00	0.00E+00	7.40E-08	2.54E-08	1E-04	1E-07	1.73E-07	1.48E-08	3E-04	7E-08	2E-07
Metals												
Barium	7.00E-02	NA	1.57E-03	2.58E-03		4E-02		6.02E-03		9E-02		
Cobalt	3.00E-04	NA	0.00E+00	4.30E-05		1E-01		1.00E-04		3.35E-01		
Total Hazard Quotient and Cancer Risk:						**2.4E-01**	**8.4E-06**			**5.5E-01**	**4.9E-06**	**1.3E-05**

7.62E-07 2.77E-06

Assumptions for Future Resident (Adult)

BW =	70	kg
IR =	2	liters/day
EF =	350	days/year
ED =	24	years
AT (Nc) =	8,760	days
AT (Car) =	25,550	days

Assumptions for Future Resident (Child)

BW =	15	kg
IR =	1	liters/day
EF =	350	days/year
ED =	6	years
AT (Nc) =	2,190	days
AT (Car) =	25,550	days

2E-01 8E-06 6E-01 5E-06 1E-05

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.

ATTACHMENT D TABLE 6 (Groundwater)
CALCULATION OF INTAKE AND RISK FROM DERMAL CONTACT TO GROUNDWATER (WHILE SHOWERING)
REASONABLE MAXIMUM EXPOSURE (RME)
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{DA \times SA \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):
DA = Absorbed Dose per Event
SA = Surface Area Contact
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Absorbed Dose per Event (DA):

For organics:

For inorganics: DA = Kp x CW x ET x CF

Kp = Permeability Coefficier
CW = EPC Cderm
ET = Exposure Time
CF = Conversion Factor

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Dermal RfD	Carc. Slope Dermal	Permeability Coefficient Kp	Tau	EPC Groundwater	Absorbed Dose/Event	Current Site Worker				Future Outdoor Park Worker				Future Recreational Visitor (Child)				Future Construction Worker			
							Intake (mg/kg-day)		Hazard Quotient	Cancer Risk	Intake (mg/kg-day)		Hazard Quotient	Cancer Risk	Intake (mg/kg-day)		Hazard Quotient	Cancer Risk	Intake (mg/kg-day)		Hazard Quotient	Cancer Risk
	(mg/kg-day)	(mg/kg-day)-1	(cm/hr)	(hours)	(mg/liter)	(mg-cm²/event)	(Nc)	(Car)			(Nc)	(Car)			(Nc)	(Car)			(Nc)	(Car)		
Volatile Organics																						
1,1,1-Trichloroethane	2.80E-01	NA	1.30E-02	6.30E-01	1.13E-03	3.22E-08									5.44E-07		2E-06					
1,2-Dichloroethene (total)	9.00E-03	NA	8.00E-03	5.58E-01	1.79E-02	2.96E-07									4.99E-06		6E-04					
Acetone	1.00E-01	NA	8.00E-03	5.58E-01	3.99E-03	6.59E-08									1.11E-06		1E-05					
Toluene	2.00E-01	NA	3.20E-02	3.70E-01	1.16E-03	6.24E-08									1.05E-06		5E-06					
Trichloroethene	NA	1.10E-02	1.22E-02	8.71E-01	2.41E-03	7.58E-08										9.14E-08		1E-09				
Semivolatile Organics																						
1,4-Dichlorobenzene	NA	2.40E-02	4.5E-02	7.5E-01	9.30E-05	1.00E-08										1.21E-08		3E-10				
Benzo(a)pyrene	NA	7.30E+00	8.3E-01	2.8E+00	9.70E-05	3.72E-07										4.49E-07		3E-06				
Benzo(b)fluoranthene	NA	7.30E-01	8.30E-01	2.92E+00	7.60E-05	2.98E-07										3.59E-07		3E-07				
Benzo(ghi)perylene	NA	NA	1.24E+00	5.64E+00	1.80E-04	1.47E-06																
Benzo(k)fluoranthene	NA	7.30E-02	7.60E-01	4.14E+00	9.10E-05	3.89E-07										4.69E-07		3E-08				
Bis(2-Ethylhexyl)phthalate	2.00E-02	1.40E-02	1.27E+00	2.46E+01	2.06E-04	3.59E-06									6.05E-05	4.32E-06	3E-03	6E-08				
Butylbenzylphthalate	2.00E-01	NA	4.17E-02	8.98E+00	6.40E-05	2.21E-08									3.73E-07		2E-06					
Di-n-butylphthalate	1.00E-01	NA	2.60E-02	4.06E+00	2.10E-04	3.04E-08									5.13E-07		5E-06					
Di-n-octylphthalate	2.00E-02	NA	2.75E+00	2.46E+01	4.10E-04	1.55E-05									2.61E-04		1E-02					
Diethyl phthalate	8.00E-01	NA	4.00E-03	1.97E+00	1.03E-03	1.60E-08									2.70E-07		3E-07					
Indeno(1,2,3-cd)pyrene	NA	7.30E-01	1.30E+00	3.97E+00	1.00E-04	7.16E-07										8.63E-07		6E-07				
Phenol	6.00E-01	NA	4.30E-03	3.80E-01	4.30E-04	3.15E-09									5.32E-08		9E-08					
Pyrene	3.00E-02	NA	2.17E-01	2.17E+00	8.00E-05	7.07E-08									1.19E-06		4E-05					
			1.27E-02																			
Pesticides/PCBs			4.40E-02																			
Beta-BHC	NA	1.80E+00	1.27E-02	6.80E+00	3.30E-06	3.02E-10										3.64E-10		7E-10				
Gamma-Chlordane	5.00E-04	3.50E-01	4.40E-02	2.22E+01	4.41E-06	2.53E-09									4.26E-08	3.05E-09	9E-05	1E-09				
Heptachlor	5.00E-04	4.50E+00	9.60E-03	1.39E+01	2.76E-06	2.73E-10									4.61E-09	3.29E-10	9E-06	1E-09				
Metals																						
Barium	4.90E-03	NA	1.00E-04	NA	9.42E-02	9.42E-09									1.59E-07		3E-05					
Cobalt	3.00E-04	NA	4.00E-04	NA	1.57E-03	6.28E-10									1.06E-08		4E-05					
Total Hazard Quotient and Cancer Risk:																	**1.7E-02**	**4.3E-06**				

Dermal Contact to Groundwater Not Applicable for Current Site Worker

Dermal Contact to Groundwater Not Applicable for Future Outdoor Park Worker

Dermal Contact to Groundwater Not Applicable for Future Construction Worker

Assumptions for Future Recreational Visitor (Child)

CF =	0.001	l/cm3
BW =	15	kg
SA =	6,600	cm2
ET =	1.00	hours/day
EF =	14	days/year
ED =	5	years
AT (Nc) =	1,825	days
AT (Car) =	25,550	days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.

ATTACHMENT D TABLE 6 (Groundwater)
CALCULATION OF INTAKE AND RISK FROM DERMAL CONTACT TO GROUNDWATER (WHILE SHOWERING)
REASONABLE MAXIMUM EXPOSURE (RME)
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{DA \times SA \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):
DA = Absorbed Dose per Event
SA = Surface Area Contact
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Absorbed Dose per Event (DA):

For organics:

For inorganics: DA = Kp x CW x ET x CF

Kp = Permeability Coefficient
CW = EPC Cderm
ET = Exposure Time
CF = Conversion Factor

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Contribution to Cancer Risk = Chronic Daily Intake (Car) x Slope Factor
Equation for Total Lifetime Cancer Risk = Adult Contribution + Child Contribution

Analyte	Dermal RfD (mg/kg-day)	Carc. Slope Dermal (mg/kg-day)-1	Permeability Coefficient Kp (cm/hr)	Tau (hours)	EPC Groundwater (mg/liter)	Absorbed Dose/Event (mg-cm²/event)	Future Resident (Adult) Intake (mg/kg-day) (Nc)	(Car)	Hazard Quotient	Contribution to Lifetime Cancer Risk	Future Resident (Child) Intake (mg/kg-day) (Nc)	(Car)	Hazard Quotient	Contribution to Lifetime Cancer Risk	Resident Total Lifetime Cancer Risk
Volatile Organics															
1,1,1-Trichloroethane	2.80E-01	NA	1.30E-02	6.30E-01	1.13E-03	3.22E-08	7.95E-06		3E-05		1.36E-05		5E-05		
1,2-Dichloroethene (total)	9.00E-03	NA	8.00E-03	5.58E-01	1.79E-02	2.96E-07	7.29E-05		8E-03		1.25E-04		1E-02		
Acetone	1.00E-01	NA	8.00E-03	5.58E-01	3.99E-03	6.59E-08	1.63E-05		2E-04		2.78E-05		3E-04		
Toluene	2.00E-01	NA	3.20E-02	3.70E-01	1.16E-03	6.24E-08	1.54E-05		8E-05		2.63E-05		1E-04		
Trichloroethene	NA	1.10E-02	1.22E-02	8.71E-01	2.41E-03	7.58E-08		6.41E-06		7E-08		2.74E-06		3E-08	1E-07
Semivolatile Organics															
1,4-Dichlorobenzene	NA	2.40E-02	4.5E-02	7.5E-01	9.30E-05	1.00E-08		8.47E-07		2E-08		3.62E-07		9E-09	3E-08
Benzo(a)pyrene	NA	7.30E+00	8.3E-01	2.8E+00	9.70E-05	3.72E-07		3.15E-05		2E-04		1.35E-05		1E-04	3.28E-04
Benzo(b)fluoranthene	NA	7.30E-01	8.30E-01	2.92E+00	7.60E-05	2.98E-07		2.52E-05		2E-05		1.08E-05		8E-06	3E-05
Benzo(ghi)perylene	NA	NA	1.24E+00	5.64E+00	1.80E-04	1.47E-06									
Benzo(k)fluoranthene	NA	7.30E-02	7.60E-01	4.14E+00	9.10E-05	3.89E-07		3.29E-05		2E-06		1.41E-05		1E-06	3E-06
Bis(2-Ethylhexyl)phthalate	2.00E-02	1.40E-02	1.27E+00	2.46E+01	2.06E-04	3.59E-06	8.84E-04	3.03E-04	4E-02	4E-06	1.51E-03	1.30E-04	8E-02	2E-06	6E-06
Butylbenzylphthalate	2.00E-01	NA	4.17E-02	8.98E+00	6.40E-05	2.21E-08	5.45E-06		3E-05		9.33E-06		5E-05		
Di-n-butylphthalate	1.00E-01	NA	2.60E-02	4.06E+00	2.10E-04	3.04E-08	7.50E-06		7E-05		1.28E-05		1E-04		
Di-n-octylphthalate	2.00E-02	NA	2.75E+00	2.46E+01	4.10E-04	1.55E-05	3.81E-03		2E-01		6.52E-03		3E-01		
Diethyl phthalate	8.00E-01	NA	4.00E-03	1.97E+00	1.03E-03	1.60E-08	3.94E-06		5E-06		6.74E-06		8E-06		
Indeno(1,2,3-cd)pyrene	NA	7.30E-01	1.30E+00	3.97E+00	1.00E-04	7.16E-07		6.05E-05		4E-05		2.59E-05		2E-05	6E-05
Phenol	6.00E-01	NA	4.30E-03	3.80E-01	4.30E-04	3.15E-09	7.77E-07		1E-06		1.33E-06		2E-06		
Pyrene	3.00E-02	NA	2.17E-01	2.17E+00	8.00E-05	7.07E-08	1.74E-05		6E-04		2.98E-05		1E-03		
			1.27E-02												
Pesticides/PCBs			4.40E-02												
Beta-BHC	NA	1.80E+00	1.27E-02	6.80E+00	3.30E-06	3.02E-10		2.55E-08		5E-08		1.09E-08		2E-08	7E-08
Gamma-Chlordane	5.00E-04	3.50E-01	4.40E-02	2.22E+01	4.41E-06	2.53E-09	6.23E-07	2.14E-07	1E-03	7E-08	1.07E-06	9.14E-08	2E-03	3E-08	1E-07
Heptachlor	5.00E-04	4.50E+00	9.60E-03	1.39E+01	2.76E-06	2.73E-10	6.73E-08	2.31E-08	1E-04	1E-07	1.15E-07	9.87E-09	2E-04	4E-08	1E-07
Metals															
Barium	4.90E-03	NA	1.00E-04	NA	9.42E-02	9.42E-09	2.32E-06		5E-04		3.97E-06		8E-04		
Cobalt	3.00E-04	NA	4.00E-04	NA	1.57E-03	6.28E-10	1.55E-07		5E-04		2.65E-07		9E-04		
Total Hazard Quotient and Cancer Risk:									**2.5E-01**	**3.0E-04**			**4.2E-01**	**1.3E-04**	**4.3E-04**

Assumptions for Future Resident (Adult)			Assumptions for Future Resident (Child)		
CF =	0.001	l/cm3	CF =	0.001	l/cm3
BW =	70	kg	BW =	15	kg
SA =	18,000	cm2	SA =	6,600	cm2
ET =	0.58	hours/day	ET =	1.00	hours/day
EF =	350	days/year	EF =	350	days/year
ED =	24	years	ED =	6	years
AT (Nc) =	8,760	days	AT (Nc) =	2,190	days
AT (Car) =	25,550	days	AT (Car) =	25,550	days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.

ATTACHMENT D TABLE 7 (Surface Water)
CALCULATION OF ABSORBED DOSE AND RISK FROM DERMAL CONTACT TO SURFACE WATER
REASONABLE MAXIMUM EXPOSURE (RME)
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{DA \times SA \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):

DA = Absorbed Dose per Event
SA = Surface Area Contact
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Absorbed Dose per Event (DA):

For organics with ET < t*:

For organics with ET > t* DA = Kp x CW x [ET/(1+B) + 2Tau(1+3B)/(1+B)] x CF

For inorganics: DA = Kp x CW x ET x CF

Kp = Permeability Coefficient
CW = EPC Surface Water
ET = Exposure Time
Tau = Lag Time
CF = Conversion Factor
B = Bunge Model Value

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Dermal RfD	Carc. Slope Dermal	Permeability Coefficient Kp	Tau	B	EPC Surface Water	Absorbed Dose/Event	Current Site Worker				Future Outdoor Park Worker				Future Recreational Visitor (Child)				Future Construction Worker			
								Intake (mg/kg-day)		Hazard Quotient	Cancer Risk	Intake (mg/kg-day)		Hazard Quotient	Cancer Risk	Intake (mg/kg-day)		Hazard Quotient	Cancer Risk	Intake (mg/kg-day)		Hazard Quotient	Cancer Risk
	(mg/kg-day)	(mg/kg-day)-1	(cm/hr)	(hours)	(unitless)	(mg/L)	(mg-cm²/event)	(Nc)	(Car)			(Nc)	(Car)			(Nc)	(Car)			(Nc)	(Car)		
Volatile Organics																							
Acetone	1.00E-01	NA	5.18E-04	3.38E-01	1.52E-03	3.11E-03	2.70E-09					5.38E-09		5E-08		2.28E-08		2E-07					
Toluene	2.00E-01	NA	3.20E-02	3.70E-01	1.00E-01	4.00E-04	2.28E-08					4.55E-08		2E-07		1.93E-07		1E-06					
Trichloroethene	NA	1.10E-02	1.22E-02	8.71E-01	5.37E-02	8.00E-04	2.52E-08						1.79E-08		2E-10		1.52E-08		2E-10				
Semivolatile Organics								**Dermal Contact to Surface Water for Current Worker**												**Dermal Contact to Surface Water for Construction Worker**			
Benzo(a)anthracene	NA	7.30E-01	5.50E-01	2.14E+00	3.20E+00	7.30E-04	1.62E-06						1.16E-06		8E-07		9.78E-07		7E-07				
Benzo(a)pyrene	NA	7.30E+00	8.30E-01	2.83E+00	5.00E+00	7.74E-04	2.99E-06						2.13E-06		2E-05		1.80E-06		1E-05				
Benzo(k)fluoranthene	NA	7.30E-02	8.30E-01	2.92E+00	5.10E+00	7.78E-04	3.05E-06						2.17E-06		2E-07		1.84E-06		1E-07				
Bis(2-Ethylhexyl)phthalate	2.00E-02	1.40E-02	1.24E+00	5.64E+00	7.95E+00	1.00E-03	8.14E-06					1.62E-05	5.80E-06	8E-04	8E-08	6.87E-05	4.91E-06	3E-03	7E-08				
Butylbenzylphthalate	2.00E-01	NA	4.17E-02	8.98E+00	2.83E-01	2.00E-04	6.91E-08					1.38E-07		7E-07		5.83E-07		3E-06					
Chrysene	3.00E-04	7.30E-03	5.50E-01	2.14E+00	3.20E+00	7.73E-04	1.72E-06					3.43E-06	1.22E-06	1E-02	9E-09	1.45E-05	1.04E-06	5E-02	8E-09				
Di-n-butylphthalate	1.00E-01	NA	2.60E-02	4.06E+00	2.00E-01	8.39E-04	1.21E-07					2.42E-07		2E-06		1.03E-06		1E-05					
Diethyl phthalate	8.00E-01	NA	4.00E-03	1.97E+00		4.60E-04	7.14E-09					1.42E-08		2E-08		6.02E-08		8E-08					
Pentachlorophenol	3.00E-02	1.20E-01	4.60E-01	3.50E+00	2.90E+00	1.96E-03	4.66E-06					9.29E-06	3.32E-06	3E-04	4E-07	3.93E-05	2.81E-06	1E-03	3E-07				
Pyrene	3.00E-02	NA	2.17E-01	2.17E+00	1.19E+00	7.78E-04	6.87E-07					1.37E-06		5E-05		5.80E-06		2E-04					
Pesticides/PCBs																							
4,4'-DDD	NA	2.40E-01	2.10E-01	6.98E+00	1.40E+00	5.41E-06	8.30E-09						5.91E-09		1E-09		5.00E-09		1E-09				
4,4'-DDT	5.00E-04	3.40E-01	3.20E-01	1.10E+01	2.30E+00	9.46E-06	2.78E-08					5.53E-08	1.98E-08	1E-04	7E-09	2.34E-07	1.67E-08	5E-04	6E-09				
Aldrin	3.00E-05	1.70E+01	1.50E-03	1.25E+01		3.72E-06	5.45E-11					1.09E-10	3.88E-11	4E-06	7E-10	4.60E-10	3.29E-11	2E-05	6E-10				
Alpha-BHC	NA	6.30E+00	1.31E-02	6.80E+00	8.59E-02	7.76E-06	7.33E-10						5.22E-10		3E-09		4.42E-10		3E-09				
Alpha-Chlordane	5.00E-04	3.50E-01	3.90E-02	2.23E+01	3.00E-01	3.25E-06	1.65E-09					3.30E-09	1.18E-09	7E-06	4E-10	1.40E-08	9.97E-10	3E-05	3E-10				
Aroclor-1242	2.00E-05	2.00E+00	6.50E-01	6.91E+00	4.27E+00	9.94E-05	4.69E-07					9.36E-07	3.34E-07	5E-02	7E-07	3.96E-06	2.83E-07	2E-01	6E-07				
Beta-BHC	NA	1.80E+00	1.27E-02	6.80E+00	8.33E-02	4.38E-06	4.01E-10						2.85E-10		5E-10		2.42E-10		4E-10				
Delta-BHC	NA	NA	2.21E-02	6.80E+00	1.45E-01	4.14E-06	6.59E-10																
Endrin aldehyde	NA	NA	1.92E-02	2.17E+01	1.44E-01	8.51E-06	2.10E-09																
Endrin ketone	NA	NA				8.54E-06	0.00E+00																
gamma-BHC (Lindane)	3.00E-04	1.30E+00	1.20E-02	4.80E+00	1.00E-01	5.70E-06	4.14E-10					8.26E-10	2.95E-10	3E-06	4E-10	3.50E-09	2.50E-10	1E-05	3E-10				
Heptachlor	5.00E-04	4.50E+00	9.60E-03	1.39E+01	1.00E-01	4.35E-06	4.30E-10					8.58E-10	3.06E-10	2E-06	1E-09	3.63E-09	2.59E-10	7E-06	1E-09				
Heptachlor epoxide	1.30E-05	9.10E+00	2.27E-02	2.42E+01	1.72E-01	3.23E-06	9.97E-10					1.99E-09	7.10E-10	2E-04	6E-09	8.41E-09	6.01E-10	6E-04	5E-09				
Hexachlorobenzene	8.00E-04	1.60E+00	1.50E-01	4.43E+00	1.00E+00	5.98E-06	5.22E-09					1.04E-08	3.72E-09	1E-05	6E-09	4.40E-08	3.15E-09	6E-05	5E-09				
Metals																							
Cadmium	1.25E-05	NA	1.00E-03	6.82E-01	4.08E-03	2.92E-04	2.92E-10					5.82E-10		5E-05		2.46E-09		2E-04					
Mercury	2.10E-05	NA	1.00E-03	2.13E+00	5.45E-03	1.10E-04	1.10E-10					2.19E-10		1E-05		9.28E-10		4E-05					
Zinc	3.00E-01	NA	6.00E-04	3.72E-01	1.87E-02	2.81E-02	1.69E-08					3.36E-08		1E-07		1.42E-07		5E-07					
Total Hazard Quotient and Cancer Risk:														**6.0E-02**	**1.8E-05**			**2.5E-01**	**1.5E-05**				

Assumptions for Future Outdoor Park Worker			Assumptions for Future Recreational Visitor (Child)		
CF =	1E-03	liter/cm3	CF =	1E-03	liter/cm3
BW =	70	kg	BW =	15	kg
SA =	2,830	cm2	SA =	6,600	cm2
ET =	1	hour/day	ET =	1	hour/day
EF =	18	days/year	EF =	7	days/year
ED =	25	years	ED =	5	years
AT (Nc) =	9,125	days	AT (Nc) =	1,825	days
AT (Car) =	25,550	days	AT (Car) =	25,550	days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.

ATTACHMENT D TABLE 7 (Surface Water)
CALCULATION OF ABSORBED DOSE AND RISK FROM DERMAL CONTACT TO SURFACE WATER
REASONABLE MAXIMUM EXPOSURE (RME)
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{DA \times SA \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):

DA = Absorbed Dose per Event
SA = Surface Area Contact
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Absorbed Dose per Event (DA):

For organics with ET < t*:

For organics with ET > t DA = Kp x CW x [ET/(1+B) + 2Tau(1+3B)/(1+B)]

For inorganics: DA = Kp x CW x ET x CF

Kp = Permeability Coefficient
CW = EPC Surface Water
ET = Exposure Time
Tau = Lag Time
CF = Conversion Factor
B = Bunge Model Value

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor
Equation for Total Lifetime Cancer Risk = Adult Contribution + Child Contribution

Analyte	Dermal RfD	Carc. Slope Dermal	Permeability Coefficient Kp	Tau	B	EPC Surface Water	Absorbed Dose/Event	Future Resident (Adult) Intake (mg/kg-day) (Nc)	Future Resident (Adult) Intake (mg/kg-day) (Car)	Future Resident (Adult) Hazard Quotient	Future Resident (Adult) Contribution to Lifetime Cancer Risk	Future Resident (Child) Intake (mg/kg-day) (Nc)	Future Resident (Child) Intake (mg/kg-day) (Car)	Future Resident (Child) Hazard Quotient	Future Resident (Child) Contribution to Lifetime Cancer Risk	Resident Total Lifetime Cancer Risk
	(mg/kg-day	mg/kg-day)-	(cm/hr)	(hours)	(unitless)	(mg/L)	(mg-cm²/event)									
Volatile Organics																
Acetone	1.00E-01	NA	5.18E-04	3.38E-01	1.52E-03	3.11E-03	2.70E-09	4.13E-08		4E-07		1.47E-07		1E-06		
Toluene	2.00E-01	NA	3.20E-02	3.70E-01	1.00E-01	4.00E-04	2.28E-08	3.49E-07		2E-06		1.24E-06		6E-06		
Trichloroethene	NA	1.10E-02	1.22E-02	8.71E-01	5.37E-02	8.00E-04	2.52E-08		1.32E-07		1E-09		1.17E-07		1E-09	3E-09
Semivolatile Organics																
Benzo(a)anthracene	NA	7.30E-01	5.50E-01	2.14E+00	3.20E+00	7.30E-04	1.62E-06		8.51E-06		6E-06		7.55E-06		6E-06	1E-05
Benzo(a)pyrene	NA	7.30E+00	8.30E-01	2.83E+00	5.00E+00	7.74E-04	2.99E-06		1.57E-05		1E-04		1.39E-05		1E-04	2E-04
Benzo(k)fluoranthene	NA	7.30E-02	8.30E-01	2.92E+00	5.10E+00	7.78E-04	3.05E-06		1.60E-05		1E-06		1.42E-05		1E-06	2E-06
Bis(2-Ethylhexyl)phthalate	2.00E-02	1.40E-02	1.24E+00	5.64E+00	7.95E+00	1.00E-03	8.14E-06	1.24E-04	4.27E-05	6E-03	6E-07	4.42E-04	3.78E-05	2E-02	5E-07	1E-06
Butylbenzylphthalate	2.00E-01	NA	4.17E-02	8.98E+00	2.83E-01	2.00E-04	6.91E-08	1.06E-06		5E-06		3.75E-06		2E-05		
Chrysene	3.00E-04	7.30E-03	5.50E-01	2.14E+00	3.20E+00	7.73E-04	1.72E-06	2.63E-05	9.01E-06	9E-02	7E-08	9.33E-05	7.99E-06	3.11E-01	6E-08	1E-07
Di-n-butylphthalate	1.00E-01	NA	2.60E-02	4.06E+00	2.00E-01	8.39E-04	1.21E-07	1.86E-06		2E-05		6.59E-06		7E-05		
Diethyl phthalate	8.00E-01	NA	4.00E-03	1.97E+00	0.00E+00	4.60E-04	7.14E-09	1.09E-07		1E-07		3.87E-07		5E-07		
Pentachlorophenol	3.00E-02	1.20E-01	4.60E-01	3.50E+00	2.90E+00	1.96E-03	4.66E-06	7.13E-05	2.44E-05	2E-03	3E-06	2.53E-04	2.17E-05	8E-03	3E-06	6E-06
Pyrene	3.00E-02	NA	2.17E-01	2.17E+00	1.19E+00	7.78E-04	6.87E-07	1.05E-05		4E-04		3.73E-05		1E-03		
Pesticides/PCBs																
4,4'-DDD	NA	2.40E-01	2.10E-01	6.98E+00	1.40E+00	5.41E-06	8.30E-09		4.35E-08		1E-08		3.86E-08		9E-09	2E-08
4,4'-DDT	5.00E-04	3.40E-01	3.20E-01	1.10E+01	2.30E+00	9.46E-06	2.78E-08	4.24E-07	1.45E-07	8E-04	5E-08	1.51E-06	1.29E-07	3E-03	4E-08	9E-08
Aldrin	3.00E-05	1.70E+01	1.50E-03	1.25E+01	0.00E+00	3.72E-06	5.45E-11	8.34E-10	2.86E-10	3E-05	5E-09	2.96E-09	2.54E-10	1E-04	4E-09	9E-09
Alpha-BHC	NA	6.30E+00	1.31E-02	6.80E+00	8.59E-02	7.76E-06	7.33E-10		3.84E-09		2E-08		3.41E-09		2E-08	5E-08
Alpha-Chlordane	5.00E-04	3.50E-01	3.90E-02	2.23E+01	3.00E-01	3.25E-06	1.65E-09	2.53E-08	8.67E-09	5E-05	3E-09	8.97E-08	7.69E-09	2E-04	3E-09	6E-09
Aroclor-1242	2.00E-05	2.00E+00	6.50E-01	6.91E+00	4.27E+00	9.94E-05	4.69E-07	7.18E-06	2.46E-06	4E-01	5E-06	2.55E-05	2.18E-06	1.27E+00	4E-06	9E-06
Beta-BHC	NA	1.80E+00	1.27E-02	6.80E+00	8.33E-02	4.38E-06	4.01E-10		2.10E-09		4E-09		1.86E-09		3E-09	7E-09
Delta-BHC	NA	NA	2.21E-02	6.80E+00	1.45E-01	4.14E-06	6.59E-10									
Endrin aldehyde	NA	NA	1.92E-02	2.17E+01	1.44E-01	8.51E-06	2.10E-09									
Endrin ketone	NA	NA	0.00E+00	0.00E+00	0.00E+00	8.54E-06	0.00E+00									
gamma-BHC (Lindane)	3.00E-04	1.30E+00	1.20E-02	4.80E+00	1.00E-01	5.70E-06	4.14E-10	6.33E-09	2.17E-09	2E-05	3E-09	2.25E-08	1.93E-09	7E-05	3E-09	5E-09
Heptachlor	5.00E-04	4.50E+00	9.60E-03	1.39E+01	1.00E-01	4.35E-06	4.30E-10	6.58E-09	2.26E-09	1E-05	1E-08	2.33E-08	2.00E-09	5E-05	9E-09	2E-08
Heptachlor epoxide	1.30E-05	9.10E+00	2.27E-02	2.42E+01	1.72E-01	3.23E-06	9.97E-10	1.52E-08	5.23E-09	1E-03	5E-08	5.41E-08	4.64E-09	4E-03	4E-08	9E-08
Hexachlorobenzene	8.00E-04	1.60E+00	1.50E-01	4.43E+00	1.00E+00	5.98E-06	5.22E-09	7.98E-08	2.74E-08	1E-04	4E-08	2.83E-07	2.43E-08	4E-04	4E-08	8E-08
Metals																
Cadmium	1.25E-05	NA	1.00E-03	6.82E-01	4.08E-03	2.92E-04	2.92E-10	4.46E-09		4E-04		1.58E-08		1E-03		
Mercury	2.10E-05	NA	1.00E-03	2.13E+00	5.45E-03	1.10E-04	1.10E-10	1.68E-09		8E-05		5.97E-09		3E-04		
Zinc	3.00E-01	NA	6.00E-04	3.72E-01	1.87E-02	2.81E-02	1.69E-08	2.58E-07		9E-07		9.15E-07		3E-06		
Total Hazard Quotient and Cancer Risk:										**4.6E-01**	**1.3E-04**			**1.6E+00**	**1.2E-04**	**2.5E-04**

Assumptions for Future Resident (Adult)			Assumptions for Future Resident (Child)		
CF =	1E-03	liter/cm3	CF =	1E-03	liter/cm3
BW =	70	kg	BW =	15	kg
SA =	8,680	cm2	SA =	6,600	cm2
ET =	1	hour/day	ET =	1	hour/day
EF =	45	days/year	EF =	45	days/year
ED =	24	years	ED =	6	years
AT (Nc) =	8,760	days	AT (Nc) =	2,190	days
AT (Car) =	25,550	days	AT (Car) =	25,550	days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.

ATTACHMENT D TABLE 8 (Sediment)
CALCULATION OF INTAKE AND RISK FROM THE INGESTION OF SEDIMENT
REASONABLE MAXIMUM EXPOSURE (RME)
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) =	$\frac{CS \times IR \times CF \times FI \times EF \times ED}{BW \times AT}$	Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose
Variables (Assumptions for Each Receptor are Listed at the Bottom):		
CS = Chemical Concentration in Sediment, from Sediment EPC Data	EF = Exposure Frequency	Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor
IR = Ingestion Rate	ED = Exposure Duration	
CF = Conversion Factor	BW = Bodyweight	
FI = Fraction Ingested	AT = Averaging Time	

Analyte	Oral RfD (mg/kg-day)	Carc. Slope Oral (mg/kg-day)-1	EPC Sediment (mg/kg)	Current Site Worker Intake (mg/kg-day) (Nc)	Current Site Worker Intake (mg/kg-day) (Car)	Current Site Worker Hazard Quotient	Current Site Worker Cancer Risk	Future Outdoor Park Worker Intake (mg/kg-day) (Nc)	Future Outdoor Park Worker Intake (mg/kg-day) (Car)	Future Outdoor Park Worker Hazard Quotient	Future Outdoor Park Worker Cancer Risk
Volatile Organics											
1,1,1-Trichloroethane	2.80E-01	NA	3.00E-03								
Acetone	1.00E-01	NA	2.32E-02								
Methyl chloride	NA	1.30E-02	9.84E-03								
Methyl ethyl ketone	6.00E-01	NA	1.01E-02								
Tetrachloroethene	1.00E-02	5.20E-02	4.00E-03								
Toluene	2.00E-01	NA	1.04E-02								
Trichloroethene	NA	1.10E-02	1.05E-02								
Semivolatile Organics											
2-Methylnaphthalene	4.00E-02	NA	3.60E-02								
4-Methylphenol	5.00E-03	NA	9.85E-02								
Acenaphthene	6.00E-02	NA	1.01E-01								
Acenaphthylene	NA	NA	1.50E-02								
Anthracene	3.00E-01	NA	1.14E-01								
Benzo(a)anthracene	NA	7.30E-01	2.86E-01								
Benzo(a)pyrene	NA	7.30E+00	2.99E-01								
Benzo(b)fluoranthene	NA	7.30E-01	3.89E-01								
Benzo(ghi)perylene	NA	NA	2.13E-01								
Benzo(k)fluoranthene	NA	7.30E-02	2.12E-01								
Bis(2-Ethylhexyl)phthalate	2.00E-02	1.40E-02	1.42E-01								
Butylbenzylphthalate	2.00E-01	NA	4.20E-02								
Carbazole	NA	2.00E-02	1.29E-01								
Chrysene	3.00E-04	7.30E-03	3.45E-01								
Di-n-butylphthalate	1.00E-01	NA	9.93E-02								
Di-n-octylphthalate	2.00E-02	NA	9.82E-02								
Dibenz(a,h)anthracene	NA	7.30E+00	1.13E-01								
Dibenzofuran	NA	NA	6.40E-02								
Diethyl phthalate	8.00E-01	NA	4.00E-02								
Fluoranthene	4.00E-02	NA	8.07E-01								
Fluorene	4.00E-02	NA	9.30E-02								
Hexachlorobenzene	8.00E-04	1.60E+00	6.20E-03								
Indeno(1,2,3-cd)pyrene	NA	7.30E-01	1.94E-01								
Naphthalene	2.00E-02	NA	4.90E-02								
Phenanthrene	NA	NA	4.36E-01								
Pyrene	3.00E-02	NA	6.64E-01								
Pesticides/PCBs											
4,4'-DDD	NA	2.40E-01	6.14E-03								
4,4'-DDE	NA	3.40E-01	6.86E-03								
4,4'-DDT	5.00E-04	3.40E-01	5.89E-03								
Alpha-Chlordane	5.00E-04	3.50E-01	1.73E-03								
Aroclor-1254	2.00E-05	2.00E+00	4.75E-02								
Aroclor-1260	2.00E-05	2.00E+00	3.26E-02								
Endosulfan I	6.00E-03	NA	1.71E-03								
Endrin	3.00E-04	NA	3.40E-03								
Endrin aldehyde	NA	NA	3.47E-03								
Endrin ketone	NA	NA	3.73E-03								
Heptachlor epoxide	1.30E-05	9.10E+00	2.04E-03								
Metals											
Arsenic	3.00E-04	1.50E+00	6.64E+00								
Copper	4.00E-02	NA	4.58E+01								
Lead	NA	NA	2.85E+01								
Magnesium	NA	NA	1.27E+04								
Vanadium	1.00E-03	NA	2.77E+01								
Zinc	3.00E-01	NA	2.77E+02								
Total Hazard Quotient and Cancer Risk:											

Ingestion of Onsite Sediment Not Applicable for Current Site Worker

Ingestion of Onsite Sediment Not Applicable for Future Outdoor Park Worker

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.

ATTACHMENT D TABLE 8 (Sediment)
CALCULATION OF INTAKE AND RISK FROM THE INGESTION OF SEDIMENT
REASONABLE MAXIMUM EXPOSURE (RME)
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) =	$\frac{CS \times IR \times CF \times FI \times EF \times ED}{BW \times AT}$	Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose
Variables (Assumptions for Each Receptor are Listed at the Bottom):		
CS = Chemical Concentration in Sediment, from Sediment EPC Data	EF = Exposure Frequency	Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor
IR = Ingestion Rate	ED = Exposure Duration	
CF = Conversion Factor	BW = Bodyweight	
FI = Fraction Ingested	AT = Averaging Time	

Make NA for SEAD-12 RI

Analyte	Oral RfD	Carc. Slope Oral	EPC Sediment	Future Recreational Visitor (Child)				Future Construction Worker			
				Intake (mg/kg-day)		Hazard Quotient	Cancer Risk	Intake (mg/kg-day)		Hazard Quotient	Cancer Risk
	(mg/kg-day)	(mg/kg-day)-1	(mg/kg)	(Nc)	(Car)			(Nc)	(Car)		
Volatile Organics											
1,1,1-Trichloroethane	2.80E-01	NA	3.00E-03								
Acetone	1.00E-01	NA	2.32E-02								
Methyl chloride	NA	1.30E-02	9.84E-03	**Ingestion of Onsite Sediment Not Applicable for Future Recreational Visitor Child**				**Ingestion of Onsite Sediment Not Applicable for Future Construction Worker**			
Methyl ethyl ketone	6.00E-01	NA	1.01E-02								
Tetrachloroethene	1.00E-02	5.20E-02	4.00E-03								
Toluene	2.00E-01	NA	1.04E-02								
Trichloroethene	NA	1.10E-02	1.05E-02								
Semivolatile Organics											
2-Methylnaphthalene	4.00E-02	NA	3.60E-02								
4-Methylphenol	5.00E-03	NA	9.85E-02								
Acenaphthene	6.00E-02	NA	1.01E-01								
Acenaphthylene	NA	NA	1.50E-02								
Anthracene	3.00E-01	NA	1.14E-01								
Benzo(a)anthracene	NA	7.30E-01	2.86E-01								
Benzo(a)pyrene	NA	7.30E+00	2.99E-01								
Benzo(b)fluoranthene	NA	7.30E-01	3.89E-01								
Benzo(ghi)perylene	NA	NA	2.13E-01								
Benzo(k)fluoranthene	NA	7.30E-02	2.12E-01								
Bis(2-Ethylhexyl)phthalate	2.00E-02	1.40E-02	1.42E-01								
Butylbenzylphthalate	2.00E-01	NA	4.20E-02								
Carbazole	NA	2.00E-02	1.29E-01								
Chrysene	3.00E-04	7.30E-03	3.45E-01								
Di-n-butylphthalate	1.00E-01	NA	9.93E-02								
Di-n-octylphthalate	2.00E-02	NA	9.82E-02								
Dibenz(a,h)anthracene	NA	7.30E+00	1.13E-01								
Dibenzofuran	NA	NA	6.40E-02								
Diethyl phthalate	8.00E-01	NA	4.00E-02								
Fluoranthene	4.00E-02	NA	8.07E-01								
Fluorene	4.00E-02	NA	9.30E-02								
Hexachlorobenzene	8.00E-04	1.60E+00	6.20E-03								
Indeno(1,2,3-cd)pyrene	NA	7.30E-01	1.94E-01								
Naphthalene	2.00E-02	NA	4.90E-02								
Phenanthrene	NA	NA	4.36E-01								
Pyrene	3.00E-02	NA	6.64E-01								
Pesticides/PCBs											
4,4'-DDD	NA	2.40E-01	6.14E-03								
4,4'-DDE	NA	3.40E-01	6.86E-03								
4,4'-DDT	5.00E-04	3.40E-01	5.89E-03								
Alpha-Chlordane	5.00E-04	3.50E-01	1.73E-03								
Aroclor-1254	2.00E-05	2.00E+00	4.75E-02								
Aroclor-1260	2.00E-05	2.00E+00	3.26E-02								
Endosulfan I	6.00E-03	NA	1.71E-03								
Endrin	3.00E-04	NA	3.40E-03								
Endrin aldehyde	NA	NA	3.47E-03								
Endrin ketone	NA	NA	3.73E-03								
Heptachlor epoxide	1.30E-05	9.10E+00	2.04E-03								
Metals											
Arsenic	3.00E-04	1.50E+00	6.64E+00								
Copper	4.00E-02	NA	4.58E+01								
Lead	NA	NA	2.85E+01								
Magnesium	NA	NA	1.27E+04								
Vanadium	1.00E-03	NA	2.77E+01								
Zinc	3.00E-01	NA	2.77E+02								
Total Hazard Quotient and Cancer Risk:											

Assumptions for Future Recreational Visitor (Child)

IR =	200	mg sed/day
CF =	1E-06	kg/mg
FI =	1	unitless
EF =	7	days/year
ED =	5	years
BW =	15	kg
AT (Nc) =	1825	days
AT (Car) =	25550	days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.

ATTACHMENT D TABLE 8 (Sediment)
CALCULATION OF INTAKE AND RISK FROM THE INGESTION OF SEDIMENT
REASONABLE MAXIMUM EXPOSURE (RME)
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) =	$\frac{CS \times IR \times CF \times FI \times EF \times ED}{BW \times AT}$	Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose
Variables (Assumptions for Each Receptor are Listed at the Bottom):		
CS = Chemical Concentration in Sediment, from Sediment EPC Data	EF = Exposure Frequency	Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor
IR = Ingestion Rate	ED = Exposure Duration	Equation for Total Lifetime Cancer Risk = Adult Contribution + Child Contribution
CF = Conversion Factor	BW = Bodyweight	
FI = Fraction Ingested	AT = Averaging Time	

Analyte	Oral RfD	Carc. Slope Oral	EPC Sediment	Future Resident (Adult)				Future Resident (Child)				Resident
				Intake (mg/kg-day)		Hazard Quotient	Cancer Risk	Intake (mg/kg-day)		Hazard Quotient	Cancer Risk	Total Lifetime
	(mg/kg-day)	(mg/kg-day)-1	(mg/kg)	(Nc)	(Car)			(Nc)	(Car)			Cancer Risk
Volatile Organics												
1,1,1-Trichloroethane	2.80E-01	NA	3.00E-03	5.28E-10		2E-09		4.93E-09		2E-08		
Acetone	1.00E-01	NA	2.32E-02	4.09E-09		4E-08		3.81E-08		4E-07		
Methyl chloride	NA	1.30E-02	9.84E-03		5.94E-10		8E-12		1.39E-09		2E-11	3E-11
Methyl ethyl ketone	6.00E-01	NA	1.01E-02	1.78E-09		3E-09		1.66E-08		3E-08		
Tetrachloroethene	1.00E-02	5.20E-02	4.00E-03	7.05E-10	2.42E-10	7E-08	1E-11	6.58E-09	5.64E-10	7E-07	3E-11	4E-11
Toluene	2.00E-01	NA	1.04E-02	1.83E-09		9E-09		1.71E-08		9E-08		
Trichloroethene	NA	1.10E-02	1.05E-02		6.34E-10		7E-12		1.48E-09		2E-11	2E-11
Semivolatile Organics												
2-Methylnaphthalene	4.00E-02	NA	3.60E-02	6.34E-09		2E-07		5.92E-08		1E-06		
4-Methylphenol	5.00E-03	NA	9.85E-02	1.73E-08		3E-06		1.62E-07		3E-05		
Acenaphthene	6.00E-02	NA	1.01E-01	1.78E-08		3E-07		1.66E-07		3E-06		
Acenaphthylene	NA	NA	1.50E-02									
Anthracene	3.00E-01	NA	1.14E-01	2.01E-08		7E-08		1.87E-07		6E-07		
Benzo(a)anthracene	NA	7.30E-01	2.86E-01		1.73E-08		1E-08		4.03E-08		3E-08	4E-08
Benzo(a)pyrene	NA	7.30E+00	2.99E-01		1.81E-08		1E-07		4.21E-08		3E-07	4E-07
Benzo(b)fluoranthene	NA	7.30E-01	3.89E-01		2.35E-08		2E-08		5.48E-08		4E-08	6E-08
Benzo(ghi)perylene	NA	NA	2.13E-01									
Benzo(k)fluoranthene	NA	7.30E-02	2.12E-01		1.28E-08		9E-10		2.99E-08		2E-09	3E-09
Bis(2-Ethylhexyl)phthalate	2.00E-02	1.40E-02	1.42E-01	2.50E-08	8.57E-09	1E-06	1E-10	2.33E-07	2.00E-08	1E-05	3E-10	4E-10
Butylbenzylphthalate	2.00E-01	NA	4.20E-02	7.40E-09		4E-08		6.90E-08		3E-07		
Carbazole	NA	2.00E-02	1.29E-01		7.79E-09		2E-10		1.82E-08		4E-10	5E-10
Chrysene	3.00E-04	7.30E-03	3.45E-01	6.08E-08	2.08E-08	2E-04	2E-10	5.67E-07	4.86E-08	2E-03	4E-10	5E-10
Di-n-butylphthalate	1.00E-01	NA	9.93E-02	1.75E-08		2E-07		1.63E-07		2E-06		
Di-n-octylphthalate	2.00E-02	NA	9.82E-02	1.73E-08		9E-07		1.61E-07		8E-06		
Dibenz(a,h)anthracene	NA	7.30E+00	1.13E-01		6.82E-09		5E-08		1.59E-08		1E-07	2E-07
Dibenzofuran	NA	NA	6.40E-02									
Diethyl phthalate	8.00E-01	NA	4.00E-02	7.05E-09		9E-09		6.58E-08		8E-08		
Fluoranthene	4.00E-02	NA	8.07E-01	1.42E-07		4E-06		1.33E-06		3E-05		
Fluorene	4.00E-02	NA	9.30E-02	1.64E-08		4E-07		1.53E-07		4E-06		
Hexachlorobenzene	8.00E-04	1.60E+00	6.20E-03	1.09E-09	3.74E-10	1E-06	6E-10	1.02E-08	8.74E-10	1E-05	1E-09	2E-09
Indeno(1,2,3-cd)pyrene	NA	7.30E-01	1.94E-01		1.17E-08		9E-09		2.73E-08		2E-08	3E-08
Naphthalene	2.00E-02	NA	4.90E-02	8.63E-09		4E-07		8.05E-08		4E-06		
Phenanthrene	NA	NA	4.36E-01									
Pyrene	3.00E-02	NA	6.64E-01	1.17E-07		4E-06		1.09E-06		4E-05		
Pesticides/PCBs												
4,4'-DDD	NA	2.40E-01	6.14E-03		3.71E-10		9E-11		8.65E-10		2E-10	3E-10
4,4'-DDE	NA	3.40E-01	6.86E-03		4.14E-10		1E-10		9.67E-10		3E-10	5E-10
4,4'-DDT	5.00E-04	3.40E-01	5.89E-03	1.04E-09	3.56E-10	2E-06	1E-10	9.68E-09	8.30E-10	2E-05	3E-10	4E-10
Alpha-Chlordane	5.00E-04	3.50E-01	1.73E-03	3.05E-10	1.04E-10	6E-07	4E-11	2.84E-09	2.44E-10	6E-06	9E-11	1E-10
Aroclor-1254	2.00E-05	2.00E+00	4.75E-02	8.37E-09	2.87E-09	4E-04	6E-09	7.81E-08	6.69E-09	4E-03	1E-08	2E-08
Aroclor-1260	2.00E-05	2.00E+00	3.26E-02	5.74E-09	1.97E-09	3E-04	4E-09	5.36E-08	4.59E-09	3E-03	9E-09	1E-08
Endosulfan I	6.00E-03	NA	1.71E-03	3.01E-10		5E-08		2.81E-09		5E-07		
Endrin	3.00E-04	NA	3.40E-03	5.99E-10		2E-06		5.59E-09		2E-05		
Endrin aldehyde	NA	NA	3.47E-03									
Endrin ketone	NA	NA	3.73E-03									
Heptachlor epoxide	1.30E-05	9.10E+00	2.04E-03	3.59E-10	1.23E-10	3E-05	1E-09	3.35E-09	2.87E-10	3E-04	3E-09	4E-09
Metals												
Arsenic	3.00E-04	1.50E+00	6.64E+00	1.17E-06	4.01E-07	4E-03	6E-07	1.09E-05	9.36E-07	4E-02	1E-06	2E-06
Copper	4.00E-02	NA	4.58E+01	8.07E-06		2E-04		7.53E-05		2E-03		
Lead	NA	NA	2.85E+01									
Magnesium	NA	NA	1.27E+04									
Vanadium	1.00E-03	NA	2.77E+01	4.88E-06		5E-03		4.55E-05		5E-02		
Zinc	3.00E-01	NA	2.77E+02	4.88E-05		2E-04		4.55E-04		2E-03		
Total Hazard Quotient and Cancer Risk:						**1.0E-02**	**8.3E-07**			**9.4E-02**	**1.9E-06**	**2.8E-06**

Assumptions for Future Resident (Adult)			Assumptions for Future Resident (Child)		
IR =	100	mg sed/day	IR =	200	mg sed/day
CF =	1E-06	kg/mg	CF =	1E-06	kg/mg
FI =	1	unitless	FI =	1	unitless
EF =	45	days/year	EF =	45	days/year
ED =	24	years	ED =	6	years
BW =	70	kg	BW =	15	kg
AT (Nc) =	8,760	days	AT (Nc) =	2,190	days
AT (Car) =	25,550	days	AT (Car) =	25,550	days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.

ATTACHMENT D TABLE 9 (Sediment)
CALCULATION OF ABSORBED DOSE AND RISK FROM DERMAL CONTACT TO SEDIMENT
REASONABLE MAXIMUM EXPOSURE (RME)
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CS \times CF \times SA \times AF \times ABS \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):
CS = Chemical Concentration in Sediment, from Sediment EPC Data
CF = Conversion Factor
SA = Surface Area Contact
AF = Adherence Factor
ABS = Absorption Factor
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Dermal RfD (mg/kg-day)	Carc. Slope Dermal (mg/kg-day)-1	Absorption Factor* (unitless)	EPC Sediment (mg/kg)	Current Site Worker Absorbed Dose (mg/kg-day) (Nc)	Current Site Worker Absorbed Dose (mg/kg-day) (Car)	Current Site Worker Hazard Quotient	Current Site Worker Cancer Risk	Future Outdoor Park Worker Absorbed Dose (mg/kg-day) (Nc)	Future Outdoor Park Worker Absorbed Dose (mg/kg-day) (Car)	Future Outdoor Park Worker Hazard Quotient	Future Outdoor Park Worker Cancer Risk
Volatile Organics												
1,1,1-Trichloroethane	2.80E-01	NA	NA	3.00E-03								
Acetone	1.00E-01	NA	NA	2.32E-02								
Methyl chloride	NA	1.30E-02	NA	9.84E-03								
Methyl ethyl ketone	6.00E-01	NA	NA	1.01E-02								
Tetrachloroethene	1.00E-02	5.20E-02	NA	4.00E-03								
Toluene	2.00E-01	NA	NA	1.04E-02								
Trichloroethene	NA	1.10E-02	NA	1.05E-02								
Semivolatile Organics												
2-Methylnaphthalene	4.00E-02	NA	0.1	3.60E-02					1.67E-09		4E-08	
4-Methylphenol	5.00E-03	NA	0.1	9.85E-02					4.58E-09		9E-07	
Acenaphthene	6.00E-02	NA	0.1	1.01E-01					4.70E-09		8E-08	
Acenaphthylene	NA	NA	0.1	1.50E-02								
Anthracene	3.00E-01	NA	0.13	1.14E-01					6.89E-09		2E-08	
Benzo(a)anthracene	NA	7.30E-01	0.13	2.86E-01						6.17E-09		5E-09
Benzo(a)pyrene	NA	7.30E+00	0.13	2.99E-01						6.45E-09		5E-08
Benzo(b)fluoranthene	NA	7.30E-01	0.13	3.89E-01						8.40E-09		6E-09
Benzo(ghi)perylene	NA	NA	0.13	2.13E-01								
Benzo(k)fluoranthene	NA	7.30E-02	0.13	2.12E-01						4.58E-09		3E-10
Bis(2-Ethylhexyl)phthalate	2.00E-02	1.40E-02	0.1	1.42E-01					6.60E-09	2.36E-09	3E-07	3E-11
Butylbenzylphthalate	2.00E-01	NA	0.1	4.20E-02					1.95E-09		1E-08	
Carbazole	NA	2.00E-02	0.1	1.29E-01						2.14E-09		4E-11
Chrysene	3.00E-04	7.30E-03	0.13	3.45E-01					2.09E-08	7.45E-09	7E-05	5E-11
Di-n-butylphthalate	1.00E-01	NA	0.1	9.93E-02					4.62E-09		5E-08	
Di-n-octylphthalate	2.00E-02	NA	0.1	9.82E-02					4.57E-09		2E-07	
Dibenz(a,h)anthracene	NA	7.30E+00	0.13	1.13E-01						2.44E-09		2E-08
Dibenzofuran	NA	NA	0.1	6.40E-02								
Diethyl phthalate	8.00E-01	NA	0.1	4.00E-02					1.86E-09		2E-09	
Fluoranthene	4.00E-02	NA	0.13	8.07E-01					4.88E-08		1E-06	
Fluorene	4.00E-02	NA	0.13	9.30E-02					5.62E-09		1E-07	
Hexachlorobenzene	8.00E-04	1.60E+00	0.1	6.20E-03					2.88E-10	1.03E-10	4E-07	2E-10
Indeno(1,2,3-cd)pyrene	NA	7.30E-01	0.13	1.94E-01						4.19E-09		3E-09
Naphthalene	2.00E-02	NA	0.13	4.90E-02					2.96E-09		1E-07	
Phenanthrene	NA	NA	0.13	4.36E-01								
Pyrene	3.00E-02	NA	0.1	6.64E-01					3.09E-08		1E-06	
Pesticides/PCBs												
4,4'-DDD	NA	2.40E-01	0.03	6.14E-03						3.06E-11		7E-12
4,4'-DDE	NA	3.40E-01	0.03	6.86E-03						3.42E-11		1E-11
4,4'-DDT	5.00E-04	3.40E-01	0.03	5.89E-03					8.22E-11	2.93E-11	2E-07	1E-11
Alpha-Chlordane	5.00E-04	3.50E-01	0.04	1.73E-03					3.22E-11	1.15E-11	6E-08	4E-12
Aroclor-1254	2.00E-05	2.00E+00	0.14	4.75E-02					3.09E-09	1.10E-09	2E-04	2E-09
Aroclor-1260	2.00E-05	2.00E+00	0.14	3.26E-02					2.12E-09	7.58E-10	1E-04	2E-09
Endosulfan I	6.00E-03	NA	NA	1.71E-03								
Endrin	3.00E-04	NA	NA	3.40E-03								
Endrin aldehyde	NA	NA	NA	3.47E-03								
Endrin ketone	NA	NA	NA	3.73E-03								
Heptachlor epoxide	1.30E-05	9.10E+00	NA	2.04E-03								
Metals												
Arsenic	3.00E-04	1.50E+00	0.03	6.64E+00					9.26E-08	3.31E-08	3E-04	5E-08
Copper	4.00E-02	NA	NA	4.58E+01								
Lead	NA	NA	NA	2.85E+01								
Magnesium	NA	NA	NA	1.27E+04								
Vanadium	3.00E-05	NA	NA	2.77E+01								
Zinc	3.00E-01	NA	NA	2.77E+02								
Total Hazard Quotient and Cancer Risk:											**6.4E-04**	**1.3E-07**

Onsite Sediment Not Applicable

Assumptions for Future Outdoor Park Worker

CF =	1E-06	kg/mg
SA =	3300	cm2
AF =	0.2	mg/cm2
EF =	18	days/year
ED =	25	years
BW =	70	kg
AT (Nc) =	9125	days
AT (Car) =	25550	days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.
* USEPA Region 2 recommends quantifying dermal exposure only for cadmium, arsenic, PCBs, dioxins/furans and pentachlorophenol, since absorption factors are not available for other chemicals of concern.

ATTACHMENT D TABLE 9 (Sediment)
CALCULATION OF ABSORBED DOSE AND RISK FROM DERMAL CONTACT TO SEDIMENT
REASONABLE MAXIMUM EXPOSURE (RME)
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CS \times CF \times SA \times AF \times ABS \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):
CS = Chemical Concentration in Sediment, from Sediment EPC Data
CF = Conversion Factor
SA = Surface Area Contact
AF = Adherence Factor
ABS = Absorption Factor
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Dermal RfD (mg/kg-day)	Carc. Slope Dermal (mg/kg-day)-1	Absorption Factor* (unitless)	EPC Sediment (mg/kg)	Future Recreational Visitor (Child) Absorbed Dose (mg/kg-day) (Nc)	Absorbed Dose (mg/kg-day) (Car)	Hazard Quotient	Cancer Risk	Future Construction Worker Absorbed Dose (mg/kg-day) (Nc)	Absorbed Dose (mg/kg-day) (Car)	Hazard Quotient	Cancer Risk
Volatile Organics												
1,1,1-Trichloroethane	2.80E-01	NA	NA	3.00E-03								
Acetone	1.00E-01	NA	NA	2.32E-02								
Methyl chloride	NA	1.30E-02	NA	9.84E-03								
Methyl ethyl ketone	6.00E-01	NA	NA	1.01E-02								
Tetrachloroethene	1.00E-02	5.20E-02	NA	4.00E-03								
Toluene	2.00E-01	NA	NA	1.04E-02								
Trichloroethene	NA	1.10E-02	NA	1.05E-02								
Semivolatile Organics												
2-Methylnaphthalene	4.00E-02	NA	0.1	3.60E-02	3.48E-08		9E-07					
4-Methylphenol	5.00E-03	NA	0.1	9.85E-02	9.52E-08		2E-05					
Acenaphthene	6.00E-02	NA	0.1	1.01E-01	9.76E-08		2E-06					
Acenaphthylene	NA	NA	0.1	1.50E-02								
Anthracene	3.00E-01	NA	0.13	1.14E-01	1.43E-07		5E-07					
Benzo(a)anthracene	NA	7.30E-01	0.13	2.86E-01		2.57E-08		2E-08				
Benzo(a)pyrene	NA	7.30E+00	0.13	2.99E-01		2.68E-08		2E-07				
Benzo(b)fluoranthene	NA	7.30E-01	0.13	3.89E-01		3.49E-08		3E-08				
Benzo(ghi)perylene	NA	NA	0.13	2.13E-01								
Benzo(k)fluoranthene	NA	7.30E-02	0.13	2.12E-01		1.90E-08		1E-09				
Bis(2-Ethylhexyl)phthalate	2.00E-02	1.40E-02	0.1	1.42E-01	1.37E-07	9.80E-09	7E-06	1E-10				
Butylbenzylphthalate	2.00E-01	NA	0.1	4.20E-02	4.06E-08		2E-07					
Carbazole	NA	2.00E-02	0.1	1.29E-01		8.91E-09		2E-10				
Chrysene	3.00E-04	7.30E-03	0.13	3.45E-01	4.34E-07	3.10E-08	1E-03	2E-10				
Di-n-butylphthalate	1.00E-01	NA	0.1	9.93E-02	9.60E-08		1E-06					
Di-n-octylphthalate	2.00E-02	NA	0.1	9.82E-02	9.49E-08		5E-06					
Dibenz(a,h)anthracene	NA	7.30E+00	0.13	1.13E-01		1.01E-08		7E-08				
Dibenzofuran	NA	NA	0.1	6.40E-02								
Diethyl phthalate	8.00E-01	NA	0.1	4.00E-02	3.87E-08		5E-08					
Fluoranthene	4.00E-02	NA	0.13	8.07E-01	1.01E-06		3E-05					
Fluorene	4.00E-02	NA	0.13	9.30E-02	1.17E-07		3E-06					
Hexachlorobenzene	8.00E-04	1.60E+00	0.1	6.20E-03	5.99E-09	4.28E-10	7E-06	7E-10				
Indeno(1,2,3-cd)pyrene	NA	7.30E-01	0.13	1.94E-01		1.74E-08		1E-08				
Naphthalene	2.00E-02	NA	0.13	4.90E-02	6.16E-08		3E-06					
Phenanthrene	NA	NA	0.13	4.36E-01								
Pyrene	3.00E-02	NA	0.1	6.64E-01	6.42E-07		2E-05					
Pesticides/PCBs												
4,4'-DDD	NA	2.40E-01	0.03	6.14E-03		1.27E-10		3E-11				
4,4'-DDE	NA	3.40E-01	0.03	6.86E-03		1.42E-10		5E-11				
4,4'-DDT	5.00E-04	3.40E-01	0.03	5.89E-03	1.71E-09	1.22E-10	3E-06	4E-11				
Alpha-Chlordane	5.00E-04	3.50E-01	0.04	1.73E-03	6.69E-10	4.78E-11	1E-06	2E-11				
Aroclor-1254	2.00E-05	2.00E+00	0.14	4.75E-02	6.43E-08	4.59E-09	3E-03	9E-09				
Aroclor-1260	2.00E-05	2.00E+00	0.14	3.26E-02	4.41E-08	3.15E-09	2E-03	6E-09				
Endosulfan I	6.00E-03	NA	NA	1.71E-03								
Endrin	3.00E-04	NA	NA	3.40E-03								
Endrin aldehyde	NA	NA	NA	3.47E-03								
Endrin ketone	NA	NA	NA	3.73E-03								
Heptachlor epoxide	1.30E-05	9.10E+00	NA	2.04E-03								
Metals												
Arsenic	3.00E-04	1.50E+00	0.03	6.64E+00	1.93E-06	1.38E-07	6E-03	2E-07				
Copper	4.00E-02	NA	NA	4.58E+01								
Lead	NA	NA	NA	2.85E+01								
Magnesium	NA	NA	NA	1.27E+04								
Vanadium	3.00E-05	NA	NA	2.77E+01								
Zinc	3.00E-01	NA	NA	2.77E+02								
Total Hazard Quotient and Cancer Risk:							**1.3E-02**	**5.5E-07**				

Onsite Sediment Not Applicable

Assumptions for Future Recreational Visitor (Child)

CF =	1E-06	kg/mg
SA =	2800	cm2
AF =	2.7	mg/cm2
EF =	7	days/year
ED =	5	years
BW =	15	kg
AT (Nc) =	1825	days
AT (Car) =	25550	days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.
* USEPA Region 2 recommends quantifying dermal exposure only for cadmium, arsenic, PCBs, dioxins/furans and pentachlorophenol, since absorption factors are not available for other chemicals of concern.

ATTACHMENT D TABLE 9 (Sediment)
CALCULATION OF ABSORBED DOSE AND RISK FROM DERMAL CONTACT TO SEDIMENT
REASONABLE MAXIMUM EXPOSURE (RME)
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CS \times CF \times SA \times AF \times ABS \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):
CS = Chemical Concentration in Sediment, from Sediment EPC Data
CF = Conversion Factor
SA = Surface Area Contact
AF = Adherence Factor
ABS = Absorption Factor
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor
Equation for Total Lifetime Cancer Risk = Adult Contribution + Child Contribution

Analyte	Dermal RfD (mg/kg-day)	Carc. Slope Dermal (mg/kg-day)-1	Absorption Factor* (unitless)	EPC Sediment (mg/kg)	Future Resident (Adult) Absorbed Dose (mg/kg-day) (Nc)	Future Resident (Adult) Absorbed Dose (mg/kg-day) (Car)	Future Resident (Adult) Hazard Quotient	Future Resident (Adult) Cancer Risk	Future Resident (Child) Absorbed Dose (mg/kg-day) (Nc)	Future Resident (Child) Absorbed Dose (mg/kg-day) (Car)	Future Resident (Child) Hazard Quotient	Future Resident (Child) Cancer Risk Cancer Risk	Resident Total Lifetime Cancer Risk
Volatile Organics													
1,1,1-Trichloroethane	2.80E-01	NA	NA	3.00E-03									
Acetone	1.00E-01	NA	NA	2.32E-02									
Methyl chloride	NA	1.30E-02	NA	9.84E-03									
Methyl ethyl ketone	6.00E-01	NA	NA	1.01E-02									
Tetrachloroethene	1.00E-02	5.20E-02	NA	4.00E-03									
Toluene	2.00E-01	NA	NA	1.04E-02									
Trichloroethene	NA	1.10E-02	NA	1.05E-02									
Semivolatile Organics													
2-Methylnaphthalene	4.00E-02	NA	0.1	3.60E-02	2.53E-09		6E-08		2.24E-07		6E-06		
4-Methylphenol	5.00E-03	NA	0.1	9.85E-02	6.92E-09		1E-06		6.12E-07		1E-04		
Acenaphthene	6.00E-02	NA	0.1	1.01E-01	7.10E-09		1E-07		6.28E-07		1E-05		
Acenaphthylene	NA	NA	0.1	1.50E-02									
Anthracene	3.00E-01	NA	0.13	1.14E-01	1.04E-08		3E-08		9.21E-07		3E-06		
Benzo(a)anthracene	NA	7.30E-01	0.13	2.86E-01		8.96E-09		7E-09		1.98E-07		1E-07	2E-07
Benzo(a)pyrene	NA	7.30E+00	0.13	2.99E-01		9.37E-09		7E-08		2.07E-07		2E-06	2E-06
Benzo(b)fluoranthene	NA	7.30E-01	0.13	3.89E-01		1.22E-08		9E-09		2.69E-07		2E-07	2E-07
Benzo(ghi)perylene	NA	NA	0.13	2.13E-01									
Benzo(k)fluoranthene	NA	7.30E-02	0.13	2.12E-01		6.64E-09		5E-10		1.47E-07		1E-08	1E-08
Bis(2-Ethylhexyl)phthalate	2.00E-02	1.40E-02	0.1	1.42E-01	9.98E-09	3.42E-09	5E-07	5E-11	8.82E-07	7.56E-08	4E-05	1E-09	1E-09
Butylbenzylphthalate	2.00E-01	NA	0.1	4.20E-02	2.95E-09		1E-08		2.61E-07		1E-06		
Carbazole	NA	2.00E-02	0.1	1.29E-01		3.11E-09		6E-11		6.87E-08		1E-09	1E-09
Chrysene	3.00E-04	7.30E-03	0.13	3.45E-01	3.15E-08	1.08E-08	1E-04	8E-11	2.79E-06	2.39E-07	9E-03	2E-09	2E-09
Di-n-butylphthalate	1.00E-01	NA	0.1	9.93E-02	6.98E-09		7E-08		6.17E-07		6E-06		
Di-n-octylphthalate	2.00E-02	NA	0.1	9.82E-02	6.90E-09		3E-07		6.10E-07		3E-05		
Dibenz(a,h)anthracene	NA	7.30E+00	0.13	1.13E-01		3.54E-09		3E-08		7.82E-08		6E-07	6E-07
Dibenzofuran	NA	NA	0.1	6.40E-02									
Diethyl phthalate	8.00E-01	NA	0.1	4.00E-02	2.81E-09		4E-09		2.49E-07		3E-07		
Fluoranthene	4.00E-02	NA	0.13	8.07E-01	7.37E-08		2E-06		6.52E-06		2E-04		
Fluorene	4.00E-02	NA	0.13	9.30E-02	8.50E-09		2E-07		7.51E-07		2E-05		
Hexachlorobenzene	8.00E-04	1.60E+00	0.1	6.20E-03	4.36E-10	1.49E-10	5E-07	2E-10	3.85E-08	3.30E-09	5E-05	5E-09	6E-09
Indeno(1,2,3-cd)pyrene	NA	7.30E-01	0.13	1.94E-01		6.08E-09		4E-09		1.34E-07		1E-07	1E-07
Naphthalene	2.00E-02	NA	0.13	4.90E-02	4.48E-09		2E-07		3.96E-07		2E-05		
Phenanthrene	NA	NA	0.13	4.36E-01									
Pyrene	3.00E-02	NA	0.1	6.64E-01	4.67E-08		2E-06		4.13E-06		1E-04		
Pesticides/PCBs													
4,4'-DDD	NA	2.40E-01	0.03	6.14E-03		4.44E-11		1E-11		9.81E-10		2E-10	2E-10
4,4'-DDE	NA	3.40E-01	0.03	6.86E-03		4.96E-11		2E-11		1.10E-09		4E-10	4E-10
4,4'-DDT	5.00E-04	3.40E-01	0.03	5.89E-03	1.24E-10	4.26E-11	2E-07	1E-11	1.10E-08	9.41E-10	2E-05	3E-10	3E-10
Alpha-Chlordane	5.00E-04	3.50E-01	0.04	1.73E-03	4.86E-11	1.67E-11	1E-07	6E-12	4.30E-09	3.69E-10	9E-06	1E-10	1E-10
Aroclor-1254	2.00E-05	2.00E+00	0.14	4.75E-02	4.67E-09	1.60E-09	2E-04	3E-09	4.13E-07	3.54E-08	2E-02	7E-08	7E-08
Aroclor-1260	2.00E-05	2.00E+00	0.14	3.26E-02	3.21E-09	1.10E-09	2E-04	2E-09	2.84E-07	2.43E-08	1E-02	5E-08	5E-08
Endosulfan I	6.00E-03	NA	NA	1.71E-03									
Endrin	3.00E-04	NA	NA	3.40E-03									
Endrin aldehyde	NA	NA	NA	3.47E-03									
Endrin ketone	NA	NA	NA	3.73E-03									
Heptachlor epoxide	1.30E-05	9.10E+00	NA	2.04E-03									
Metals													
Arsenic	3.00E-04	1.50E+00	0.03	6.64E+00	1.40E-07	4.80E-08	5E-04	7E-08	1.24E-05	1.06E-06	4E-02	2E-06	2E-06
Copper	4.00E-02	NA	NA	4.58E+01									
Lead	NA	NA	NA	2.85E+01									
Magnesium	NA	NA	NA	1.27E+04									
Vanadium	3.00E-05	NA	NA	2.77E+01									
Zinc	3.00E-01	NA	NA	2.77E+02									
Total Hazard Quotient and Cancer Risk:							**9.7E-04**	**1.9E-07**			**8.6E-02**	**4.3E-06**	**4.4E-06**

Assumptions for Future Resident (Adult)

CF =	1E-06	kg/mg
SA =	5,700	cm2
AF =	0.07	mg/cm2
EF =	45	days/year
ED =	24	years
BW =	70	kg
AT (Nc) =	8,760	days
AT (Car) =	25,550	days

Assumptions for Future Resident (Child)

CF =	1E-06	kg/mg
SA =	2,800	cm2
AF =	2.7	mg/cm2
EF =	45	days/year
ED =	6	years
BW =	15	kg
AT (Nc) =	2,190	days
AT (Car) =	25,550	days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.
* USEPA Region 2 recommends quantifying dermal exposure only for cadmium, arsenic, PCBs, dioxins/furans and pentachlorophenol, since absorption factors are not available for other chemicals of concern.

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APPENDIX I

FIELD AMBIENT AIR DUST MONITORING RESULTS

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Appendix I
Ambient Air Dust Monitoring Results - SEAD-12 Removal Action

Seneca Army Depot Activity
Romulus, NY

DataRam 4 Dust Monitor, Serial Number D454

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
1	214.6	26.6	52	0.7241	9:55:33	15-Jul-09	
2	509.6	26.6	52	1.1433	9:56:33	15-Jul-09	
3	56.1	26.7	52	1.0706	9:57:33	15-Jul-09	
4	440	26.7	52	0.5185	9:58:33	15-Jul-09	
5	144.4	26.8	52	1.1184	9:59:33	15-Jul-09	
6	22.9	26.9	52	0.7627	10:00:33	15-Jul-09	
7	40.4	26.9	52	0.5577	10:01:33	15-Jul-09	
8	19.9	27	52	0.6245	10:02:33	15-Jul-09	
9	12.8	27	52	0.3786	10:03:33	15-Jul-09	
10	9.7	27.1	52	0.4641	10:04:33	15-Jul-09	
11	248	27.1	53	0.7422	10:05:33	15-Jul-09	
12	22.7	27.1	52	0.6108	10:06:33	15-Jul-09	
13	7.6	27.2	52	0.3237	10:07:33	15-Jul-09	
14	249.2	27.2	52	0.4775	10:08:33	15-Jul-09	
15	87	27.2	52	0.8426	10:09:33	15-Jul-09	
16	20.1	27.3	52	0.5586	10:10:33	15-Jul-09	131.6
17	351.4	27.3	52	0.5912	10:11:33	15-Jul-09	140.1
18	133.9	27.4	52	1.1535	10:12:33	15-Jul-09	116.6
19	17	27.4	52	0.6824	10:13:33	15-Jul-09	114.2
20	7.5	27.4	52	0.3119	10:14:33	15-Jul-09	87.2
21	6.4	27.5	52	0.2799	10:15:33	15-Jul-09	78.5
22	46.7	27.5	52	0.433	10:16:33	15-Jul-09	80.0
23	14.1	27.5	52	0.4755	10:17:33	15-Jul-09	78.4
24	9	27.5	52	0.3726	10:18:33	15-Jul-09	77.7
25	8.8	27.6	52	0.4161	10:19:33	15-Jul-09	77.4
26	39.4	27.6	53	1.0803	10:20:33	15-Jul-09	79.3
27	24.2	27.6	53	0.8772	10:21:33	15-Jul-09	65.3
28	7.4	27.6	53	0.4018	10:22:33	15-Jul-09	64.4
29	11.3	27.6	53	0.3446	10:23:33	15-Jul-09	64.6
30	54.8	27.6	53	0.5563	10:24:33	15-Jul-09	52.4
31	13.6	27.6	52	0.3675	10:25:33	15-Jul-09	47.9
32	420.8	27.7	52	0.7264	10:26:33	15-Jul-09	72.9
33	179.9	27.7	52	0.7729	10:27:33	15-Jul-09	62.2
34	25.7	27.7	52	0.6677	10:28:33	15-Jul-09	55.4
35	499.2	27.7	52	0.9044	10:29:33	15-Jul-09	85.6
36	10.9	27.7	52	0.5793	10:30:33	15-Jul-09	85.8
37	6.6	27.7	51	0.3524	10:31:33	15-Jul-09	85.8
38	5.8	27.7	51	0.2824	10:32:33	15-Jul-09	83.2
39	279.5	27.7	51	0.4084	10:33:33	15-Jul-09	99.8
40	61.1	27.7	51	0.4916	10:34:33	15-Jul-09	103.1
41	72.4	27.7	51	0.6196	10:35:33	15-Jul-09	107.0
42	14.9	27.7	50	0.6248	10:36:33	15-Jul-09	105.5
43	12	27.7	50	0.4492	10:37:33	15-Jul-09	104.7
44	11.4	27.7	50	0.4136	10:38:33	15-Jul-09	105.0
45	9.1	27.7	50	0.6258	10:39:33	15-Jul-09	104.9
46	7	27.7	50	0.3829	10:40:33	15-Jul-09	101.9
47	6.9	27.7	51	0.3524	10:41:33	15-Jul-09	101.5
48	6.3	27.7	51	0.3064	10:42:33	15-Jul-09	75.5
49	5.8	27.7	50	0.3433	10:43:33	15-Jul-09	64.7
50	6.2	27.7	50	0.3401	10:44:33	15-Jul-09	63.4
51	6.7	27.7	50	0.3647	10:45:33	15-Jul-09	32.7
52	12	27.7	50	0.389	10:46:33	15-Jul-09	32.7
53	14.5	27.7	50	0.4226	10:47:33	15-Jul-09	33.2
54	13.5	27.7	51	0.3349	10:48:33	15-Jul-09	33.7
55	19.8	27.7	51	0.4338	10:49:33	15-Jul-09	17.5
56	5.6	27.7	51	0.28	10:50:33	15-Jul-09	14.0
57	5.2	27.7	50	0.3034	10:51:33	15-Jul-09	9.8
58	5.7	27.7	50	0.329	10:52:33	15-Jul-09	9.2
59	5.8	27.7	50	0.3273	10:53:33	15-Jul-09	8.8
60	5.1	27.7	50	0.2789	10:54:33	15-Jul-09	8.5
61	49.5	27.7	50	0.4791	10:55:33	15-Jul-09	11.0
62	32	27.7	50	0.8058	10:56:33	15-Jul-09	12.5
63	5.8	27.7	51	0.3305	10:57:33	15-Jul-09	12.5
64	247.6	27.7	51	0.377	10:58:33	15-Jul-09	27.6
65	48	27.7	51	0.6608	10:59:33	15-Jul-09	30.2
66	56	27.7	50	0.6938	11:00:33	15-Jul-09	33.3
67	12	27.7	50	0.5016	11:01:33	15-Jul-09	33.6
68	8	27.7	50	0.3698	11:02:33	15-Jul-09	33.4
69	7.6	27.7	50	0.2823	11:03:33	15-Jul-09	33.0
70	5.2	27.7	50	0.3002	11:04:33	15-Jul-09	32.4
71	5.5	27.7	50	0.3309	11:05:33	15-Jul-09	31.5
72	5.5	27.7	49	0.3066	11:06:33	15-Jul-09	31.5
73	5.7	27.7	49	0.3004	11:07:33	15-Jul-09	31.6
74	6.7	27.7	49	0.3256	11:08:33	15-Jul-09	31.6
75	45.8	27.7	49	0.4013	11:09:33	15-Jul-09	34.1
76	59	27.7	49	0.7368	11:10:33	15-Jul-09	37.5
77	22.3	27.7	49	0.6558	11:11:33	15-Jul-09	35.8
78	31.6	27.7	49	0.6719	11:12:33	15-Jul-09	35.8
79	7.8	27.7	49	0.4094	11:13:33	15-Jul-09	35.9
80	64.7	27.7	49	0.4822	11:14:33	15-Jul-09	24.5
81	273.1	27.7	49	0.8026	11:15:33	15-Jul-09	38.5
82	127.6	27.7	49	0.6844	11:16:33	15-Jul-09	43.0
83	43.8	27.7	49	0.5033	11:17:33	15-Jul-09	45.0
84	30.1	27.7	49	0.4388	11:18:33	15-Jul-09	46.4
85	18.5	27.7	48	0.4285	11:19:33	15-Jul-09	47.1
86	12.1	27.7	48	0.5899	11:20:33	15-Jul-09	47.5
87	9.8	27.7	48	0.3566	11:21:33	15-Jul-09	47.8
88	10.7	27.7	48	0.2778	11:22:33	15-Jul-09	48.1
89	8.9	27.7	48	0.3185	11:23:33	15-Jul-09	48.3
90	11.7	27.7	48	0.3478	11:24:33	15-Jul-09	48.6
91	6.8	27.7	48	0.3415	11:25:33	15-Jul-09	46.2
92	5.3	27.7	48	0.3292	11:26:33	15-Jul-09	42.8
93	92.5	27.7	48	0.561	11:27:33	15-Jul-09	47.2
94	37.2	27.7	48	0.705	11:28:33	15-Jul-09	47.5

DataRam 4 Dust Monitor, Serial Number D464

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
1	29.2	24.9	52	0.6261	9:49:20	15-Jul-09	
2	3	24.9	52	0.4624	9:50:20	15-Jul-09	
3	18.8	25	52	1.9998	9:51:20	15-Jul-09	
4	4.1	25.1	52	0.8818	9:52:20	15-Jul-09	
5	6.7	25.2	52	0.5189	9:53:20	15-Jul-09	
6	32.9	25.3	52	2.7789	9:54:20	15-Jul-09	
7	20.4	25.4	52	2.6773	9:55:20	15-Jul-09	
8	27.3	25.5	52	2.0541	9:56:20	15-Jul-09	
9	8.6	25.5	51	2.0787	9:57:20	15-Jul-09	
10	37.7	25.6	52	1.0098	9:58:20	15-Jul-09	
11	67.5	25.7	51	3.0151	9:59:20	15-Jul-09	
12	3	25.8	51	0.4072	10:00:20	15-Jul-09	
13	4.6	25.9	51	0.4861	10:01:20	15-Jul-09	
14	3.1	26	51	0.4844	10:02:20	15-Jul-09	
15	10.3	26.1	51	1.2374	10:03:20	15-Jul-09	
16	8.8	26.2	50	0.8831	10:04:20	15-Jul-09	17.9
17	2	26.2	50	0.4292	10:05:20	15-Jul-09	16.2
18	2.9	26.4	50	0.4747	10:06:20	15-Jul-09	16.2
19	1.9	26.4	50	0.3892	10:07:20	15-Jul-09	15.1
20	2.2	26.5	50	0.3927	10:08:20	15-Jul-09	15.0
21	1.2	26.6	49	0.368	10:09:20	15-Jul-09	14.7
22	2.6	26.7	49	0.4411	10:10:20	15-Jul-09	12.8
23	2.4	26.7	49	0.4275	10:11:20	15-Jul-09	11.6
24	3.6	26.9	49	0.6265	10:12:20	15-Jul-09	10.2
25	1.6	26.9	49	0.5032	10:13:20	15-Jul-09	9.7
26	1.8	27	49	0.4931	10:14:20	15-Jul-09	7.5
27	2.3	27.1	49	0.5139	10:15:20	15-Jul-09	3.4
28	1.6	27.2	49	0.4145	10:16:20	15-Jul-09	3.3
29	2.6	27.3	49	0.5021	10:17:20	15-Jul-09	3.2
30	2	27.4	48	0.4205	10:18:20	15-Jul-09	3.1
31	2.5	27.5	48	0.4317	10:19:20	15-Jul-09	2.6
32	12.5	27.6	48	0.7862	10:20:20	15-Jul-09	2.9
33	8.2	27.7	48	0.73	10:21:20	15-Jul-09	3.2
34	3.3	27.7	48	0.4387	10:22:20	15-Jul-09	3.3
35	2	27.9	48	0.3943	10:23:20	15-Jul-09	3.3
36	3.9	27.9	47	0.4593	10:24:20	15-Jul-09	3.4
37	8.3	28	47	0.8645	10:25:20	15-Jul-09	3.8
38	2.9	28.1	47	0.4967	10:26:20	15-Jul-09	3.8
39	2.2	28.2	47	0.4335	10:27:20	15-Jul-09	3.8
40	3.1	28.2	46	0.5005	10:28:20	15-Jul-09	3.8
41	61.8	28.3	46	1.0168	10:29:20	15-Jul-09	7.6
42	144.6	28.4	46	3.7848	10:30:20	15-Jul-09	16.5
43	31.4	28.5	46	3.2576	10:31:20	15-Jul-09	18.3
44	2.1	28.5	46	0.3879	10:32:20	15-Jul-09	18.3
45	2.4	28.6	46	0.3785	10:33:20	15-Jul-09	18.3
46	3.4	28.7	45	0.42	10:34:20	15-Jul-09	18.4
47	3.2	28.7	45	0.4385	10:35:20	15-Jul-09	18.5
48	2.8	28.8	45	0.3804	10:36:20	15-Jul-09	17.9
49	55.8	28.9	45	2.6743	10:37:20	15-Jul-09	20.8
50	30.6	29	45	4.0972	10:38:20	15-Jul-09	22.5
51	70.5	29.1	45	4.1107	10:39:20	15-Jul-09	26.8
52	25.1	29.1	44	2.7709	10:40:20	15-Jul-09	28.1
53	3.5	29.2	44	0.4603	10:41:20	15-Jul-09	27.8
54	0.7	29.3	44	0.3585	10:42:20	15-Jul-09	27.7
55	0.9	29.4	44	0.3663	10:43:20	15-Jul-09	27.6
56	50.1	29.5	44	1.8064	10:44:20	15-Jul-09	30.6
57	64.3	29.6	43	4.127	10:45:20	15-Jul-09	30.7
58	13.3	29.7	43	2.5671	10:46:20	15-Jul-09	22.5
59	3.5	29.8	43	0.4773	10:47:20	15-Jul-09	20.8
60	12.3	29.9	43	2.1517	10:48:20	15-Jul-09	21.4
61	4.1	30	43	0.5802	10:49:20	15-Jul-09	21.5
62	0.7	30.1	42	0.3683	10:50:20	15-Jul-09	21.3
63	0.7	30.1	42	0.3693	10:51:20	15-Jul-09	21.2
64	0.4	30.2	41	0.3523	10:52:20	15-Jul-09	21.0
65	0.7	30.3	41	0.3622	10:53:20	15-Jul-09	17.6
66	0.2	30.4	41	0.3418	10:54:20	15-Jul-09	15.7
67	4.2	30.5	41	0.5455	10:55:20	15-Jul-09	11.5
68	2	30.5	40	0.4802	10:56:20	15-Jul-09	10.1
69	4.4	30.6	40	1.1381	10:57:20	15-Jul-09	10.2
70	0.4	30.6	40	0.3722	10:58:20	15-Jul-09	10.1
71	179	30.7	40	2.7741	10:59:20	15-Jul-09	21.3
72	2.5	30.8	40	0.4087	11:00:20	15-Jul-09	18.3
73	5.2	30.9	40	0.4807	11:01:20	15-Jul-09	14.6
74	1.2	31	39	0.3425	11:02:20	15-Jul-09	13.8
75	3.3	31	39	0.5393	11:03:20	15-Jul-09	13.8
76	1.4	31.1	39	0.4395	11:04:20	15-Jul-09	13.2
77	10.3	31.2	39	1.1491	11:05:20	15-Jul-09	13.5
78	86.1	31.2	39	3.3683	11:06:20	15-Jul-09	18.9
79	16.3	31.2	38	3.0642	11:07:20	15-Jul-09	19.9
80	7.4	31.3	38	1.0985	11:08:20	15-Jul-09	20.3
81	1.5	31.4	38	0.4512	11:09:20	15-Jul-09	20.3
82	0.8	31.5	38	0.3922	11:10:20	15-Jul-09	20.4
83	5.2	31.5	38	0.7793	11:11:20	15-Jul-09	20.4
84	4	31.5	38	0.506	11:12:20	15-Jul-09	20.6
85	7.8	31.6	38	0.9728	11:13:20	15-Jul-09	20.8
86	9	31.6	38	1.6949	11:14:20	15-Jul-09	21.3
87	0.3	31.7	37	0.3556	11:15:20	15-Jul-09	10.1
88	0.9	31.7	37	0.3546	11:16:20	15-Jul-09	10.0
89	3	31.8	37	0.3848	11:17:20	15-Jul-09	9.9
90	1.4	31.8	37	0.3785	11:18:20	15-Jul-09	9.9
91	0.7	31.9	36	0.3634	11:19:20	15-Jul-09	9.8
92	0.5	31.9	36	0.356	11:20:20	15-Jul-09	9.7
93	0.4	32	36	0.353	11:21:20	15-Jul-09	9.1
94	0.6	32	36	0.3544	11:22:20	15-Jul-09	3.7
95	1	32	36	0.3503	11:23:20	15-Jul-09	2.8
96	0.1	32	36	0.3383	11:24:20	15-Jul-09	2.3
97	0.2	32.1	35	0.3397	11:25:20	15-Jul-09	2.2
98	0.9	32.1	35	0.3487	11:26:20	15-Jul-09	2.3
99	4.1	32.1	35	0.418	11:27:20	15-Jul-09	2.2
100	5.1	32.2	35	0.5328	11:28:20	15-Jul-09	2.3

Appendix I
Ambient Air Dust Monitoring Results - SEAD-12 Removal Action

Seneca Army Depot Activity
Romulus, NY

DataRam 4 Dust Monitor, Serial Number D454

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
95	9.4	27.7	48	0.4656	11:29:33	15-Jul-09	47.6
96	4.8	27.7	48	0.3193	11:30:33	15-Jul-09	43.9
97	7	27.7	48	0.2976	11:31:33	15-Jul-09	27.3
98	11.3	27.7	47	0.3804	11:32:33	15-Jul-09	20.0
99	142.6	27.7	47	0.7951	11:33:33	15-Jul-09	26.2
100	39.6	27.7	47	0.9635	11:34:33	15-Jul-09	26.8
101	29.1	27.7	47	0.4896	11:35:33	15-Jul-09	27.4
102	47.2	27.7	47	0.6496	11:36:33	15-Jul-09	29.6
103	55.4	27.7	46	0.6492	11:37:33	15-Jul-09	32.5
104	28.8	27.7	47	0.9363	11:38:33	15-Jul-09	33.6
105	44.2	27.7	47	0.8794	11:39:33	15-Jul-09	35.8
106	6.9	27.8	46	0.456	11:40:33	15-Jul-09	35.5
107	9.7	27.7	46	0.4	11:41:33	15-Jul-09	35.7
108	34.5	27.7	46	0.5443	11:42:33	15-Jul-09	37.5
109	69	27.7	46	0.6831	11:43:33	15-Jul-09	36.0
110	18	27.7	46	0.3893	11:44:33	15-Jul-09	34.8
111	18.9	27.7	46	0.4248	11:45:33	15-Jul-09	35.4
112	50.4	27.7	46	0.6115	11:46:33	15-Jul-09	38.3
113	18.7	27.7	45	0.8349	11:47:33	15-Jul-09	39.0
114	16.9	27.7	46	0.794	11:48:33	15-Jul-09	39.4
115	20.8	27.7	46	0.6876	11:49:33	15-Jul-09	31.8
116	18.9	27.6	46	0.3678	11:50:33	15-Jul-09	30.5
117	11.7	27.6	46	0.4337	11:51:33	15-Jul-09	29.4
118	8.4	27.6	46	0.4199	11:52:33	15-Jul-09	27.0
119	44.6	27.6	46	0.4765	11:53:33	15-Jul-09	26.3
120	67.6	27.6	46	1.3139	11:54:33	15-Jul-09	28.7
121	112.7	27.6	46	0.7608	11:55:33	15-Jul-09	33.0
122	67.6	27.6	46	0.9865	11:56:33	15-Jul-09	36.8
123	53	27.6	46	0.6421	11:57:33	15-Jul-09	39.5
124	30.5	27.6	46	0.5077	11:58:33	15-Jul-09	39.2
125	7.5	27.6	46	0.3419	11:59:33	15-Jul-09	35.4
126	11.2	27.5	47	0.4145	12:00:33	15-Jul-09	35.0
127	10.4	27.6	47	0.3453	12:01:33	15-Jul-09	34.4
128	9.1	27.6	47	0.4631	12:02:33	15-Jul-09	31.9
129	4.5	27.6	48	0.3566	12:03:33	15-Jul-09	31.0
130	5.2	27.6	47	0.4252	12:04:33	15-Jul-09	30.2
131	5.1	27.6	47	0.368	12:05:33	15-Jul-09	29.3
132	4.9	27.6	48	0.3256	12:06:33	15-Jul-09	28.4
133	4.6	27.6	48	0.3548	12:07:33	15-Jul-09	27.9
134	5.4	27.6	48	0.3481	12:08:33	15-Jul-09	27.7
135	29.8	27.6	48	0.5078	12:09:33	15-Jul-09	26.8
136	20.1	27.6	48	0.5778	12:10:33	15-Jul-09	23.9
137	28.6	27.6	48	0.984	12:11:33	15-Jul-09	18.6
138	230.3	27.6	48	0.6115	12:12:33	15-Jul-09	28.8
139	61.4	27.6	47	0.661	12:13:33	15-Jul-09	29.3
140	24.4	27.6	47	0.3999	12:14:33	15-Jul-09	28.9
141	49.5	27.6	47	0.4071	12:15:33	15-Jul-09	31.5
142	180.3	27.6	47	0.7654	12:16:33	15-Jul-09	42.1
143	66	27.6	47	0.761	12:17:33	15-Jul-09	45.6
144	58.2	27.6	47	0.4586	12:18:33	15-Jul-09	48.6
145	53.6	27.6	47	0.3786	12:19:33	15-Jul-09	51.7
146	158.3	27.6	47	0.7298	12:20:33	15-Jul-09	61.3
147	56.6	27.6	46	0.7797	12:21:33	15-Jul-09	64.5
148	21.1	27.6	46	0.5498	12:22:33	15-Jul-09	65.5
149	14.3	27.6	46	0.448	12:23:33	15-Jul-09	66.1
150	17.2	27.6	47	0.3839	12:24:33	15-Jul-09	66.9
151	16.1	27.6	47	0.4478	12:25:33	15-Jul-09	66.0
152	11.4	27.6	47	0.4955	12:26:33	15-Jul-09	65.5
153	29.3	27.6	47	0.4457	12:27:33	15-Jul-09	65.5
154	43.4	27.6	47	0.7117	12:28:33	15-Jul-09	53.8
155	6.1	27.6	47	0.4056	12:29:33	15-Jul-09	50.4
156	5.6	27.7	46	0.3141	12:30:33	15-Jul-09	49.2
157	6.7	27.6	46	0.2708	12:31:33	15-Jul-09	46.5
158	7.2	27.7	46	0.2802	12:32:33	15-Jul-09	35.7
159	4.7	27.7	47	0.3914	12:33:33	15-Jul-09	31.9
160	5.1	27.7	47	0.3646	12:34:33	15-Jul-09	28.5
161	4.9	27.7	47	0.3088	12:35:33	15-Jul-09	25.5
162	6.2	27.7	47	0.3289	12:36:33	15-Jul-09	16.0
163	4.8	27.7	47	0.3609	12:37:33	15-Jul-09	12.8
164	5.1	27.7	47	0.4299	12:38:33	15-Jul-09	11.8
165	4.9	27.7	47	0.345	12:39:33	15-Jul-09	11.2
166	4.7	27.7	47	0.3235	12:40:33	15-Jul-09	10.4
167	3.8	27.7	47	0.3035	12:41:33	15-Jul-09	9.6
168	5.4	27.7	47	0.3235	12:42:33	15-Jul-09	9.2
169	5.4	27.7	47	0.3399	12:43:33	15-Jul-09	7.8
170	4.5	27.7	47	0.3393	12:44:33	15-Jul-09	5.3
171	4.3	27.8	46	0.3767	12:45:33	15-Jul-09	5.2
172	4.8	27.7	47	0.3591	12:46:33	15-Jul-09	5.2
173	4.6	27.7	47	0.3574	12:47:33	15-Jul-09	5.0
174	4.9	27.8	47	0.3258	12:48:33	15-Jul-09	4.9
175	4.5	27.8	46	0.4037	12:49:33	15-Jul-09	4.9
176	5.3	27.8	46	0.3922	12:50:33	15-Jul-09	4.9
177	4.7	27.8	46	0.3374	12:51:33	15-Jul-09	4.9
178	5.1	27.9	46	0.3435	12:52:33	15-Jul-09	4.8
179	5	27.9	46	0.3666	12:53:33	15-Jul-09	4.8
180	5.1	27.9	46	0.328	12:54:33	15-Jul-09	4.8
181	4.9	27.9	45	0.4052	12:55:33	15-Jul-09	4.8
182	5	27.9	45	0.333	12:56:33	15-Jul-09	4.8
183	4.2	27.9	45	0.2933	12:57:33	15-Jul-09	4.9
184	5.1	28	45	0.3274	12:58:33	15-Jul-09	4.8
185	4.5	28	45	0.3165	12:59:33	15-Jul-09	4.8
186	4.3	28	45	0.3141	13:00:33	15-Jul-09	4.8
187	5.1	28	45	0.2946	13:01:33	15-Jul-09	4.8
188	5.3	28	45	0.3221	13:02:33	15-Jul-09	4.9
189	4.2	28	45	0.3161	13:03:33	15-Jul-09	4.8
190	5	28	45	0.3358	13:04:33	15-Jul-09	4.8
191	5.4	28.1	45	0.3984	13:05:33	15-Jul-09	4.9
192	4.6	28.1	45	0.3111	13:06:33	15-Jul-09	4.8
193	4.9	28.1	45	0.349	13:07:33	15-Jul-09	4.9
194	5	28.1	46	0.3425	13:08:33	15-Jul-09	4.9

DataRam 4 Dust Monitor, Serial Number D464

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
101	10.7	32.2	35	1.8647	11:29:20	15-Jul-09	2.4
102	1.8	32.2	35	0.623	11:30:20	15-Jul-09	2.0
103	10.1	32.2	35	3.123	11:31:20	15-Jul-09	2.6
104	5.9	32.3	35	1.2825	11:32:20	15-Jul-09	2.9
105	0.4	32.3	34	0.3622	11:33:20	15-Jul-09	2.7
106	2.9	32.3	34	0.5228	11:34:20	15-Jul-09	2.8
107	1.7	32.4	34	0.3966	11:35:20	15-Jul-09	2.9
108	0.2	32.4	34	0.3473	11:36:20	15-Jul-09	2.9
109	4.8	32.5	34	0.4422	11:37:20	15-Jul-09	3.2
110	8.5	32.5	34	1.6056	11:38:20	15-Jul-09	3.7
111	3.7	32.5	34	1.1029	11:39:20	15-Jul-09	3.8
112	0.9	32.5	33	0.6156	11:40:20	15-Jul-09	3.9
113	0.6	32.6	33	0.3988	11:41:20	15-Jul-09	3.9
114	3.2	32.6	33	0.9103	11:42:20	15-Jul-09	4.0
115	0.1	32.7	33	0.3452	11:43:20	15-Jul-09	3.8
116	0.4	32.7	32	0.3585	11:44:20	15-Jul-09	3.5
117	0.2	32.7	33	0.3488	11:45:20	15-Jul-09	2.8
118	5.4	32.7	33	1.5958	11:46:20	15-Jul-09	3.1
119	0.7	32.8	32	0.3748	11:47:20	15-Jul-09	2.5
120	3.3	32.8	32	0.4031	11:48:20	15-Jul-09	2.3
121	3.1	32.8	32	0.4742	11:49:20	15-Jul-09	2.5
122	1.5	32.9	32	0.4339	11:50:20	15-Jul-09	2.4
123	1.4	32.9	32	0.3978	11:51:20	15-Jul-09	2.4
124	0	32.9	32	0.3389	11:52:20	15-Jul-09	2.4
125	1.8	33	32	0.469	11:53:20	15-Jul-09	2.2
126	0.4	33	32	0.3523	11:54:20	15-Jul-09	1.7
127	2.8	33	31	0.3164	11:55:20	15-Jul-09	1.6
128	1.6	33	31	0.3249	11:56:20	15-Jul-09	1.7
129	0.2	33	31	0.3349	11:57:20	15-Jul-09	1.6
130	0.1	33	31	0.3364	11:58:20	15-Jul-09	1.4
131	3.1	33	31	0.3512	11:59:20	15-Jul-09	1.6
132	0.6	33	32	0.3483	12:00:20	15-Jul-09	1.6
133	3.4	33.1	31	0.4082	12:01:20	15-Jul-09	1.8
134	6.1	33.1	32	0.5844	12:02:20	15-Jul-09	1.9
135	3.9	33.1	32	0.5191	12:03:20	15-Jul-09	2.1
136	1.5	33.1	31	0.4099	12:04:20	15-Jul-09	2.0
137	0.7	33.1	31	0.353	12:05:20	15-Jul-09	1.8
138	3.9	33.1	31	0.5071	12:06:20	15-Jul-09	2.0
139	4.6	33.2	31	1.0354	12:07:20	15-Jul-09	2.2
140	7.6	33.2	31	2.6198	12:08:20	15-Jul-09	2.6
141	21.1	33.2	31	2.6628	12:09:20	15-Jul-09	3.9
142	1.4	33.2	32	0.4178	12:10:20	15-Jul-09	3.9
143	0.2	33.2	31	0.3437	12:11:20	15-Jul-09	3.8
144	0.6	33.2	31	0.3564	12:12:20	15-Jul-09	3.7
145	6.1	33.3	31	0.4608	12:13:20	15-Jul-09	4.1
146	0.3	33.3	31	0.3392	12:14:20	15-Jul-09	4.1
147	0.8	33.3	31	0.35	12:15:20	15-Jul-09	3.9
148	1.2	33.3	31	0.3483	12:16:20	15-Jul-09	4.0
149	0.2	33.3	31	0.3381	12:17:20	15-Jul-09	3.8
150	0.8	33.3	31	0.3429	12:18:20	15-Jul-09	3.4
151	0.2	33.4	31	0.3395	12:19:20	15-Jul-09	3.2
152	0.4	33.4	31	0.3411	12:20:20	15-Jul-09	3.1
153	0.1	33.4	30	0.3382	12:21:20	15-Jul-09	3.1
154	0.2	33.4	30	0.3394	12:22:20	15-Jul-09	2.9
155	4	33.4	30	0.8639	12:23:20	15-Jul-09	2.8
156	7.1	33.4	30	1.6433	12:24:20	15-Jul-09	2.8
157	7.7	33.4	31	1.692	12:25:20	15-Jul-09	2.0
158	0.1	33.4	31	0.3438	12:26:20	15-Jul-09	1.9
159	0	33.4	31	0.3391	12:27:20	15-Jul-09	1.9
160	0.2	33.5	31	0.345	12:28:20	15-Jul-09	1.8
161	0.6	33.5	30	0.3635	12:29:20	15-Jul-09	1.5
162	2.9	33.5	30	0.5055	12:30:20	15-Jul-09	1.7
163	1.2	33.5	30	0.3689	12:31:20	15-Jul-09	1.7
164	0.7	33.5	30	0.3634	12:32:20	15-Jul-09	1.7
165	0.4	33.5	30	0.3438	12:33:20	15-Jul-09	1.7
166	1.4	33.5	30	0.3489	12:34:20	15-Jul-09	1.7
167	0.5	33.6	30	0.3407	12:35:20	15-Jul-09	1.7
168	0.2	33.6	30	0.3388	12:36:20	15-Jul-09	1.7
169	0.1	33.6	30	0.3384	12:37:20	15-Jul-09	1.7
170	0	33.6	30	0.3377	12:38:20	15-Jul-09	1.7
171	0.1	33.6	30	0.3381	12:39:20	15-Jul-09	1.5
172	0	33.7	30	0.3376	12:40:20	15-Jul-09	1.0
173	0	33.7	30	0.3378	12:41:20	15-Jul-09	0.5
174	0.1	33.7	30	0.3382	12:42:20	15-Jul-09	0.5
175	0.4	33.7	30	0.3406	12:43:20	15-Jul-09	0.6
176	0.1	33.8	30	0.3377	12:44:20	15-Jul-09	0.5
177	0.1	33.8	30	0.3381	12:45:20	15-Jul-09	0.5
178	0.3	33.8	30	0.3394	12:46:20	15-Jul-09	0.4
179	0.1	33.8	30	0.3383	12:47:20	15-Jul-09	0.3
180	0.3	33.9	29	0.3364	12:48:20	15-Jul-09	0.3
181	0.4	33.9	29	0.333	12:49:20	15-Jul-09	0.3
182	0.3	33.9	29	0.3337	12:50:20	15-Jul-09	0.2
183	0.1	34	29	0.3365	12:51:20	15-Jul-09	0.2
184	0.1	34	29	0.3359	12:52:20	15-Jul-09	0.2
185	0.2	34	29	0.3356	12:53:20	15-Jul-09	0.2
186	0	34	29	0.3373	12:54:20	15-Jul-09	0.2
187	0.2	34	29	0.335	12:55:20	15-Jul-09	0.2
188	0.1	34	29	0.3369	12:56:20	15-Jul-09	0.2
189	0.2	34	29	0.3352	12:57:20	15-Jul-09	0.2
190	0.2	34	29	0.3356	12:58:20	15-Jul-09	0.2
191	0.1	34	29	0.3369	12:59:20	15-Jul-09	0.2
192	0.2	34	29	0.3353	13:00:20	15-Jul-09	0.2
193	0.1	34	29	0.3366	13:01:20	15-Jul-09	0.2
194	0.4	34	29	0.3262	13:02:20	15-Jul-09	0.2
195	0.1	34	29	0.3321	13:03:20	15-Jul-09	0.2
196	0.1	34	29	0.3338	13:04:20	15-Jul-09	0.2
197	0.4	34	29	0.3233	13:05:20	15-Jul-09	0.2
198	0	34	29	0.3364	13:06:20	15-Jul-09	0.2
199	0	34.1	29	0.3359	13:07:20	15-Jul-09	0.2
200	0.2	34.1	29	0.3295	13:08:20	15-Jul-09	0.2

Appendix I
Ambient Air Dust Monitoring Results - SEAD-12 Removal Action

Seneca Army Depot Activity
Romulus, NY

DataRam 4 Dust Monitor, Serial Number D454

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
195	5.2	28.1	46	0.3186	13:09:33	15-Jul-09	4.9
196	5.5	28.1	47	0.3481	13:10:33	15-Jul-09	4.9
197	5.2	28.2	47	0.3488	13:11:33	15-Jul-09	4.9
198	5.6	28.2	48	0.3288	13:12:33	15-Jul-09	4.9
199	4.8	28.2	48	0.2717	13:13:33	15-Jul-09	5.0
200	5.4	28.2	48	0.3505	13:14:33	15-Jul-09	5.0
201	5.1	28.3	48	0.378	13:15:33	15-Jul-09	5.0
202	4.3	28.3	48	0.3286	13:16:33	15-Jul-09	5.0
203	5.1	28.3	47	0.3156	13:17:33	15-Jul-09	5.0
204	5.2	28.3	47	0.333	13:18:33	15-Jul-09	5.0
205	4.7	28.4	46	0.3344	13:19:33	15-Jul-09	5.1
206	4.9	28.4	46	0.3174	13:20:33	15-Jul-09	5.1
207	4.9	28.4	46	0.3019	13:21:33	15-Jul-09	5.0
208	5.5	28.4	47	0.3011	13:22:33	15-Jul-09	5.1
209	4.6	28.4	46	0.285	13:23:33	15-Jul-09	5.1
210	5.1	28.5	46	0.3313	13:24:33	15-Jul-09	5.1
211	4.3	28.5	46	0.3004	13:25:33	15-Jul-09	5.0
212	4.9	28.5	46	0.3327	13:26:33	15-Jul-09	5.0
213	5.2	28.5	45	0.3736	13:27:33	15-Jul-09	5.0
214	5	28.6	46	0.3363	13:28:33	15-Jul-09	4.9
215	5	28.6	46	0.3506	13:29:33	15-Jul-09	5.0
216	4.7	28.6	46	0.3515	13:30:33	15-Jul-09	4.9
217	5.1	28.6	46	0.3158	13:31:33	15-Jul-09	4.9
218	4.6	28.6	46	0.3154	13:32:33	15-Jul-09	4.9
219	5.1	28.7	46	0.3639	13:33:33	15-Jul-09	4.9
220	5	28.7	46	0.3414	13:34:33	15-Jul-09	4.9
221	5.3	28.7	46	0.3471	13:35:33	15-Jul-09	5.0
222	4.7	28.7	46	0.3204	13:36:33	15-Jul-09	4.9
223	5.4	28.7	47	0.3646	13:37:33	15-Jul-09	5.0
224	4.2	28.8	47	0.3382	13:38:33	15-Jul-09	4.9
225	5.9	28.8	47	0.3625	13:39:33	15-Jul-09	5.0
226	4.6	28.8	47	0.3482	13:40:33	15-Jul-09	4.9
227	5	28.9	47	0.3167	13:41:33	15-Jul-09	5.0
228	5.4	28.9	47	0.3567	13:42:33	15-Jul-09	5.0
229	4.8	28.9	46	0.3202	13:43:33	15-Jul-09	5.0
230	4.9	28.9	46	0.3099	13:44:33	15-Jul-09	5.0
231	5.4	29	47	0.3219	13:45:33	15-Jul-09	5.0
232	9.9	29	46	0.3841	13:46:33	15-Jul-09	5.3
233	4.9	29	46	0.3644	13:47:33	15-Jul-09	5.3
234	13.8	29.1	45	0.4745	13:48:33	15-Jul-09	5.9
235	23.6	29.1	45	0.3877	13:49:33	15-Jul-09	7.1
236	7.2	29.1	45	0.3026	13:50:33	15-Jul-09	7.2
237	811.8	29.1	45	0.6551	13:51:33	15-Jul-09	57.6
238	88.4	29.1	45	0.8926	13:52:33	15-Jul-09	62.8
239	28.4	29.2	45	0.7864	13:53:33	15-Jul-09	64.3
240	6.7	29.2	46	0.4447	13:54:33	15-Jul-09	64.4
241	8.6	29.2	46	0.3544	13:55:33	15-Jul-09	64.6
242	16.9	29.2	46	0.2834	13:56:33	15-Jul-09	65.4
243	45.5	29.2	45	0.5774	13:57:33	15-Jul-09	67.9
244	56.4	29.3	44	0.4723	13:58:33	15-Jul-09	71.1
245	22.6	29.3	44	0.5788	13:59:33	15-Jul-09	72.2
246	8.8	29.3	43	0.4585	14:00:33	15-Jul-09	72.4
247	4.3	29.3	44	0.3689	14:01:33	15-Jul-09	72.4
248	5.4	29.4	44	0.359	14:02:33	15-Jul-09	72.1
249	3.7	29.4	44	0.3256	14:03:33	15-Jul-09	72.0
250	4.5	29.4	44	0.3988	14:04:33	15-Jul-09	71.4
251	5.5	29.5	45	0.4002	14:05:33	15-Jul-09	70.3
252	4	29.5	45	0.3196	14:06:33	15-Jul-09	70.1
253	4.2	29.5	45	0.3306	14:07:33	15-Jul-09	19.6
254	4.8	29.5	45	0.3888	14:08:33	15-Jul-09	14.4
255	5.1	29.5	44	0.4105	14:09:33	15-Jul-09	12.9
256	4.2	29.6	45	0.3035	14:10:33	15-Jul-09	12.8
257	5	29.6	45	0.3292	14:11:33	15-Jul-09	12.6
258	4.7	29.7	44	0.3533	14:12:33	15-Jul-09	11.8
259	4.7	29.6	44	0.3577	14:13:33	15-Jul-09	9.2
260	14.8	29.7	44	0.5086	14:14:33	15-Jul-09	6.6
261	39.6	29.7	43	0.6885	14:15:33	15-Jul-09	7.7
262	9.2	29.8	43	0.5822	14:16:33	15-Jul-09	7.7
263	4.7	29.8	43	0.3546	14:17:33	15-Jul-09	7.8
264	4.3	29.8	43	0.2792	14:18:33	15-Jul-09	7.7
265	3.6	29.9	43	0.2761	14:19:33	15-Jul-09	7.7
266	3.6	29.9	43	0.2837	14:20:33	15-Jul-09	7.6
267	4.1	29.9	43	0.3076	14:21:33	15-Jul-09	7.5
268	4.9	30	43	0.3258	14:22:33	15-Jul-09	7.6
269	4.5	30	43	0.3252	14:23:33	15-Jul-09	7.6
270	7.6	30.1	43	0.3064	14:24:33	15-Jul-09	7.8
271	15.7	30.1	42	0.3586	14:25:33	15-Jul-09	8.5
272	37	30.1	42	0.6746	14:26:33	15-Jul-09	10.5
273	28.7	30.1	42	0.7588	14:27:33	15-Jul-09	12.0
274	6.6	30.2	42	0.7493	14:28:33	15-Jul-09	12.1
275	7.7	30.2	42	0.4944	14:29:33	15-Jul-09	12.3
276	4.9	30.2	41	0.4133	14:30:33	15-Jul-09	11.7
277	3.7	30.3	41	0.3068	14:31:33	15-Jul-09	9.4
278	5.2	30.3	42	0.3163	14:32:33	15-Jul-09	9.2
279	4.6	30.4	42	0.3875	14:33:33	15-Jul-09	9.2
280	5.6	30.4	42	0.3912	14:34:33	15-Jul-09	9.3
281	7.1	30.5	42	0.3973	14:35:33	15-Jul-09	9.5
282	4.8	30.5	43	0.4362	14:36:33	15-Jul-09	9.5
283	5.2	30.5	43	0.5225	14:37:33	15-Jul-09	9.6
284	4.7	30.6	44	0.3526	14:38:33	15-Jul-09	9.6
285	5.4	30.6	43	0.3466	14:39:33	15-Jul-09	9.7
286	8.4	30.7	43	0.3571	14:40:33	15-Jul-09	9.7
287	5.8	30.7	42	0.5528	14:41:33	15-Jul-09	9.1
288	4.6	30.7	42	0.3899	14:42:33	15-Jul-09	7.1
289	4.8	30.8	42	0.449	14:43:33	15-Jul-09	5.6
290	4.4	30.8	41	0.309	14:44:33	15-Jul-09	5.4
291	5.7	30.9	41	0.3723	14:45:33	15-Jul-09	5.3
292	4.8	30.9	42	0.3906	14:46:33	15-Jul-09	5.3
293	4.1	31	42	0.3117	14:47:33	15-Jul-09	5.3
294	4.7	31	42	0.3236	14:48:33	15-Jul-09	5.3

DataRam 4 Dust Monitor, Serial Number D464

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
201	0.2	34.1	29	0.3317	13:09:20	15-Jul-09	0.2
202	0.1	34.1	29	0.332	13:10:20	15-Jul-09	0.2
203	0.4	34.1	29	0.3225	13:11:20	15-Jul-09	0.2
204	0.2	34.1	29	0.3311	13:12:20	15-Jul-09	0.2
205	0.3	34.1	29	0.3268	13:13:20	15-Jul-09	0.2
206	0.1	34.1	30	0.3321	13:14:20	15-Jul-09	0.2
207	0.1	34.2	29	0.3345	13:15:20	15-Jul-09	0.2
208	0.1	34.2	29	0.3314	13:16:20	15-Jul-09	0.2
209	0.1	34.2	29	0.3327	13:17:20	15-Jul-09	0.2
210	0.1	34.2	29	0.3329	13:18:20	15-Jul-09	0.2
211	0.2	34.2	29	0.3287	13:19:20	15-Jul-09	0.2
212	0.2	34.2	29	0.3299	13:20:20	15-Jul-09	0.2
213	0.2	34.2	29	0.3308	13:21:20	15-Jul-09	0.2
214	0.1	34.2	29	0.3319	13:22:20	15-Jul-09	0.2
215	0.1	34.3	29	0.3345	13:23:20	15-Jul-09	0.2
216	0.2	34.3	29	0.3306	13:24:20	15-Jul-09	0.2
217	0.3	34.3	29	0.3247	13:25:20	15-Jul-09	0.2
218	0.1	34.3	29	0.3347	13:26:20	15-Jul-09	0.2
219	0.1	34.4	29	0.3323	13:27:20	15-Jul-09	0.2
220	0.7	34.4	28	0.3134	13:28:20	15-Jul-09	0.2
221	0	34.4	29	0.3353	13:29:20	15-Jul-09	0.2
222	0.4	34.4	29	0.3202	13:30:20	15-Jul-09	0.2
223	0.1	34.5	29	0.3343	13:31:20	15-Jul-09	0.2
224	0.2	34.5	29	0.3285	13:32:20	15-Jul-09	0.2
225	0.2	34.5	28	0.3291	13:33:20	15-Jul-09	0.2
226	0.2	34.6	28	0.3308	13:34:20	15-Jul-09	0.2
227	0.3	34.6	28	0.3259	13:35:20	15-Jul-09	0.2
228	0.2	34.6	28	0.3284	13:36:20	15-Jul-09	0.2
229	0.2	34.6	28	0.3305	13:37:20	15-Jul-09	0.2
230	0.1	34.6	28	0.3315	13:38:20	15-Jul-09	0.2
231	0.2	34.6	29	0.3301	13:39:20	15-Jul-09	0.2
232	0.2	34.6	29	0.3288	13:40:20	15-Jul-09	0.2
233	0.1	34.6	28	0.3318	13:41:20	15-Jul-09	0.2
234	0.1	34.6	28	0.3338	13:42:20	15-Jul-09	0.2
235	0.3	34.6	28	0.3269	13:43:20	15-Jul-09	0.2
236	0.1	34.6	28	0.3329	13:44:20	15-Jul-09	0.2
237	0.1	34.6	28	0.3324	13:45:20	15-Jul-09	0.2
238	0.3	34.6	28	0.3265	13:46:20	15-Jul-09	0.2
239	0.1	34.6	28	0.3307	13:47:20	15-Jul-09	0.2
240	0.1	34.6	28	0.3345	13:48:20	15-Jul-09	0.2
241	0.3	34.6	28	0.3244	13:49:20	15-Jul-09	0.2
242	0.1	34.6	28	0.3326	13:50:20	15-Jul-09	0.2
243	16.8	34.6	28	0.4055	13:51:20	15-Jul-09	1.2
244	8.2	34.6	28	2.1514	13:52:20	15-Jul-09	1.7
245	25.1	34.6	28	2.9999	13:53:20	15-Jul-09	3.3
246	7.5	34.6	28	1.7754	13:54:20	15-Jul-09	3.7
247	1.5	34.6	28	0.4043	13:55:20	15-Jul-09	3.8
248	4.2	34.6	28	0.4164	13:56:20	15-Jul-09	4.1
249	0.3	34.6	28	0.3641	13:57:20	15-Jul-09	4.1
250	0.5	34.6	27	0.3621	13:58:20	15-Jul-09	4.1
251	0.1	34.7	27	0.343	13:59:20	15-Jul-09	4.1
252	0.1	34.7	27	0.3398	14:00:20	15-Jul-09	4.1
253	1.4	34.7	27	0.4279	14:01:20	15-Jul-09	4.2
254	0.3	34.7	27	0.3562	14:02:20	15-Jul-09	4.2
255	0	34.7	27	0.3396	14:03:20	15-Jul-09	4.2
256	0.2	34.7	27	0.3458	14:04:20	15-Jul-09	4.2
257	0.1	34.7	27	0.3454	14:05:20	15-Jul-09	4.2
258	0.2	34.7	27	0.3455	14:06:20	15-Jul-09	4.2
259	0.1	34.7	27	0.3434	14:07:20	15-Jul-09	3.1
260	3.2	34.7	27	0.7312	14:08:20	15-Jul-09	2.8
261	23	34.7	27	2.749	14:09:20	15-Jul-09	2.7
262	0.7	34.7	27	0.5551	14:10:20	15-Jul-09	2.2
263	0.7	34.7	27	0.4896	14:11:20	15-Jul-09	2.2
264	2.7	34.7	27	0.993	14:12:20	15-Jul-09	2.1
265	1.6	34.7	27	0.3674	14:13:20	15-Jul-09	2.2
266	3.9	34.8	27	0.5912	14:14:20	15-Jul-09	2.4
267	0.2	34.8	27	0.3563	14:15:20	15-Jul-09	2.4
268	0.2	34.8	27	0.3571	14:16:20	15-Jul-09	2.4
269	0	34.8	27	0.3394	14:17:20	15-Jul-09	2.3
270	0.4	34.8	27	0.3737	14:18:20	15-Jul-09	2.3
271	0	34.8	27	0.3396	14:19:20	15-Jul-09	2.3
272	0	34.9	27	0.3383	14:20:20	15-Jul-09	2.3
273	0.1	34.9	27	0.3427	14:21:20	15-Jul-09	2.3
274	55.9	34.9	27	2.4891	14:22:20	15-Jul-09	5.8
275	8.8	34.9	27	1.7927	14:23:20	15-Jul-09	6.3
276	1.1	34.9	27	0.6328	14:24:20	15-Jul-09	6.2
277	0.8	34.9	26	0.4273	14:25:20	15-Jul-09	4.8
278	0.1	34.9	27	0.3457	14:26:20	15-Jul-09	4.8
279	0.1	34.9	26	0.342	14:27:20	15-Jul-09	4.7
280	0.5	35	26	0.3794	14:28:20	15-Jul-09	4.6
281	0.5	35	26	0.3698	14:29:20	15-Jul-09	4.5
282	0	35	26	0.3387	14:30:20	15-Jul-09	4.3
283	0.4	35	27	0.3611	14:31:20	15-Jul-09	4.3
284	0.1	35.1	26	0.3403	14:32:20	15-Jul-09	4.3
285	9.7	35.1	26	1.1626	14:33:20	15-Jul-09	4.9
286	8.1	35.1	26	0.9676	14:34:20	15-Jul-09	5.4
287	0	35.1	27	0.3398	14:35:20	15-Jul-09	5.4
288	0.1	35.1	27	0.3451	14:36:20	15-Jul-09	5.4
289	0	35.1	27	0.3397	14:37:20	15-Jul-09	5.4
290	0.1	35.1	26	0.345	14:38:20	15-Jul-09	1.9
291	0.2	35.1	26	0.348	14:39:20	15-Jul-09	1.4
292	0	35.1	26	0.3378	14:40:20	15-Jul-09	1.3
293	0.1	35.1	27	0.3456	14:41:20	15-Jul-09	1.3
294	0	35.1	26	0.3378	14:42:20	15-Jul-09	1.2
295	0	35.1	26	0.3382	14:43:20	15-Jul-09	1.2
296	18.5	35.1	26	0.8294	14:44:20	15-Jul-09	2.4
297	3.7	35.1	26	0.8279	14:45:20	15-Jul-09	2.6
298	0.7	35.1	26	0.387	14:46:20	15-Jul-09	2.6
299	0.2	35.1	26	0.3506	14:47:20	15-Jul-09	2.6
300	7.5	35	26	1.5386	14:48:20	15-Jul-09	3.1

Appendix I
Ambient Air Dust Monitoring Results - SEAD-12 Removal Action

Seneca Army Depot Activity
Romulus, NY

DataRam 4 Dust Monitor, Serial Number D454

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
295	4.6	31.1	43	0.3202	14:49:33	15-Jul-09	5.3
296	5.1	31.1	43	0.3989	14:50:33	15-Jul-09	5.3
297	5.3	31.1	43	0.3838	14:51:33	15-Jul-09	5.2
298	4.6	31.1	43	0.3274	14:52:33	15-Jul-09	5.1
299	5.5	31.2	43	0.3928	14:53:33	15-Jul-09	5.2
300	5.6	31.2	43	0.3685	14:54:33	15-Jul-09	5.2
301	13.7	31.2	43	0.4924	14:55:33	15-Jul-09	5.7
302	9.7	31.3	42	0.3847	14:56:33	15-Jul-09	5.8
303	9.6	31.3	42	0.4517	14:57:33	15-Jul-09	6.1
304	5.1	31.3	41	0.3661	14:58:33	15-Jul-09	6.1
305	5	31.3	41	0.3417	14:59:33	15-Jul-09	6.1
306	5.2	31.4	40	0.3983	15:00:33	15-Jul-09	6.1
307	7	31.4	40	0.3	15:01:33	15-Jul-09	6.2
308	6.9	31.4	40	0.351	15:02:33	15-Jul-09	6.4
309	6.1	31.4	40	0.3195	15:03:33	15-Jul-09	6.5
310	5.2	31.4	40	0.3137	15:04:33	15-Jul-09	6.5
311	4.8	31.4	40	0.3418	15:05:33	15-Jul-09	6.5
312	4.8	31.5	40	0.3202	15:06:33	15-Jul-09	6.5
313	4.3	31.5	40	0.2983	15:07:33	15-Jul-09	6.4
314	4.5	31.5	41	0.3119	15:08:33	15-Jul-09	6.4
315	5	31.5	41	0.2982	15:09:33	15-Jul-09	6.4
316	5.1	31.5	41	0.3242	15:10:33	15-Jul-09	6.4
317	4.4	31.6	41	0.3043	15:11:33	15-Jul-09	5.8
318	4.1	31.6	40	0.2857	15:12:33	15-Jul-09	5.4
319	5.3	31.6	40	0.2973	15:13:33	15-Jul-09	5.2
320	4.6	31.6	39	0.3422	15:14:33	15-Jul-09	5.1
321	4.4	31.6	39	0.3264	15:15:33	15-Jul-09	5.1
322	4.8	31.6	39	0.3079	15:16:33	15-Jul-09	5.1
323	4.3	31.6	40	0.3146	15:17:33	15-Jul-09	4.9
324	4.4	31.7	40	0.3111	15:18:33	15-Jul-09	4.8
325	4.9	31.7	40	0.2983	15:19:33	15-Jul-09	4.7
326	4.9	31.7	40	0.312	15:20:33	15-Jul-09	4.7
327	4.4	31.7	40	0.2689	15:21:33	15-Jul-09	4.6
328	4.8	31.7	40	0.2933	15:22:33	15-Jul-09	4.6
329	4	31.8	40	0.2728	15:23:33	15-Jul-09	4.6
330	4.8	31.8	40	0.2643	15:24:33	15-Jul-09	4.6
331	5	31.8	41	0.298	15:25:33	15-Jul-09	4.6
332	5.2	31.8	41	0.3076	15:26:33	15-Jul-09	4.6
333	5.3	31.9	42	0.3223	15:27:33	15-Jul-09	4.7
334	4.6	31.9	43	0.2815	15:28:33	15-Jul-09	4.7
335	5.1	31.9	43	0.2848	15:29:33	15-Jul-09	4.7
336	4.8	32	43	0.2806	15:30:33	15-Jul-09	4.7
337	6.2	32	43	0.3111	15:31:33	15-Jul-09	4.8
338	5.7	32	43	0.2739	15:32:33	15-Jul-09	4.9
339	5.4	32	42	0.2817	15:33:33	15-Jul-09	5.0
340	5.3	32	42	0.3203	15:34:33	15-Jul-09	5.0
341	4.7	32	42	0.3467	15:35:33	15-Jul-09	5.0
342	5.8	32.1	42	0.4241	15:36:33	15-Jul-09	5.1
343	5.5	32.1	42	0.3266	15:37:33	15-Jul-09	5.1
344	5	32.1	42	0.3317	15:38:33	15-Jul-09	5.2
345	5.1	32.1	42	0.344	15:39:33	15-Jul-09	5.2
346	5.3	32.1	41	0.3026	15:40:33	15-Jul-09	5.3
347	5.7	32.2	41	0.3252	15:41:33	15-Jul-09	5.3
348	4.8	32.2	41	0.2574	15:42:33	15-Jul-09	5.3
349	4.8	32.2	42	0.2749	15:43:33	15-Jul-09	5.2
350	5.5	32.2	43	0.3509	15:44:33	15-Jul-09	5.3
351	4.9	32.3	43	0.3152	15:45:33	15-Jul-09	5.3
352	5.4	32.3	42	0.3604	15:46:33	15-Jul-09	5.3
353	5.2	32.3	43	0.3602	15:47:33	15-Jul-09	5.3
354	5.4	32.4	43	0.3043	15:48:33	15-Jul-09	5.2
355	5.7	32.4	42	0.3409	15:49:33	15-Jul-09	5.3
356	4.9	32.4	42	0.3744	15:50:33	15-Jul-09	5.2
357	5.1	32.5	41	0.3539	15:51:33	15-Jul-09	5.3
358	5.2	32.5	42	0.3497	15:52:33	15-Jul-09	5.2
359	5.5	32.5	42	0.3503	15:53:33	15-Jul-09	5.2
360	6.8	32.5	43	0.3341	15:54:33	15-Jul-09	5.3
361	6.5	32.6	43	0.3508	15:55:33	15-Jul-09	5.4
362	6.3	32.6	44	0.329	15:56:33	15-Jul-09	5.5
363	5.1	32.6	43	0.3224	15:57:33	15-Jul-09	5.4
364	4.9	32.6	43	0.3063	15:58:33	15-Jul-09	5.5
365	4.9	32.6	42	0.3062	15:59:33	15-Jul-09	5.5
366	5.5	32.7	42	0.3338	16:00:33	15-Jul-09	5.5
367	5.3	32.7	42	0.289	16:01:33	15-Jul-09	5.5
368	6.1	32.7	42	0.3043	16:02:33	15-Jul-09	5.5
369	5.3	32.7	42	0.344	16:03:33	15-Jul-09	5.5
370	5	32.7	41	0.3702	16:04:33	15-Jul-09	5.5
371	5.9	32.7	41	0.4123	16:05:33	15-Jul-09	5.5
372	4.9	32.7	42	0.3042	16:06:33	15-Jul-09	5.5
373	4.6	32.8	41	0.3345	16:07:33	15-Jul-09	5.5
374	5.1	32.8	41	0.2861	16:08:33	15-Jul-09	5.5
375	5	32.8	41	0.3809	16:09:33	15-Jul-09	5.5
376	5.3	32.8	41	0.3321	16:10:33	15-Jul-09	5.4
377	4.9	32.8	41	0.2953	16:11:33	15-Jul-09	5.3
378	4.6	32.8	41	0.2844	16:12:33	15-Jul-09	5.2
379	4.3	32.8	41	0.311	16:13:33	15-Jul-09	5.1
380	5.5	32.8	40	0.3316	16:14:33	15-Jul-09	5.1
381	4.9	32.8	40	0.3101	16:15:33	15-Jul-09	5.1
382	5.5	32.8	40	0.2807	16:16:33	15-Jul-09	5.1
383	4.8	32.8	40	0.3045	16:17:33	15-Jul-09	5.1
384	6.4	32.9	40	0.316	16:18:33	15-Jul-09	5.1
385	5.1	32.9	40	0.3307	16:19:33	15-Jul-09	5.1
386	4.6	32.9	40	0.3387	16:20:33	15-Jul-09	5.1
387	5.1	32.8	40	0.3144	16:21:33	15-Jul-09	5.0
388	5	32.9	40	0.3554	16:22:33	15-Jul-09	5.0
389	5.1	32.9	40	0.3008	16:23:33	15-Jul-09	5.1
390	4.8	32.9	40	0.349	16:24:33	15-Jul-09	5.1
391	5.4	32.9	40	0.3974	16:25:33	15-Jul-09	5.1
392	4.8	32.9	41	0.3547	16:26:33	15-Jul-09	5.1
393	4.8	32.9	41	0.3276	16:27:33	15-Jul-09	5.0
394	4.8	32.9	41	0.3098	16:28:33	15-Jul-09	5.1

DataRam 4 Dust Monitor, Serial Number D464

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
301	8.8	35	27	1.9447	14:49:20	15-Jul-09	3.0
302	0	35	26	0.3377	14:50:20	15-Jul-09	2.5
303	0.1	35	27	0.3481	14:51:20	15-Jul-09	2.5
304	0	35	26	0.3386	14:52:20	15-Jul-09	2.5
305	0.2	35	26	0.3494	14:53:20	15-Jul-09	2.5
306	0.1	35	26	0.3484	14:54:20	15-Jul-09	2.5
307	0.3	34.9	26	0.3605	14:55:20	15-Jul-09	2.5
308	0.1	34.9	26	0.3478	14:56:20	15-Jul-09	2.5
309	0.1	34.9	26	0.346	14:57:20	15-Jul-09	2.5
310	0.1	34.8	26	0.3448	14:58:20	15-Jul-09	2.5
311	0.2	34.8	26	0.3524	14:59:20	15-Jul-09	2.5
312	0.8	34.8	26	0.4116	15:00:20	15-Jul-09	1.4
313	1.2	34.8	26	0.4574	15:01:20	15-Jul-09	1.3
314	1	34.8	26	0.433	15:02:20	15-Jul-09	1.3
315	2.3	34.7	26	0.4842	15:03:20	15-Jul-09	1.4
316	2.1	34.7	26	0.41	15:04:20	15-Jul-09	1.1
317	0	34.7	26	0.3376	15:05:20	15-Jul-09	0.5
318	0.3	34.7	26	0.3426	15:06:20	15-Jul-09	0.6
319	0.1	34.7	26	0.3398	15:07:20	15-Jul-09	0.6
320	0.4	34.7	27	0.3447	15:08:20	15-Jul-09	0.6
321	0.5	34.7	27	0.3476	15:09:20	15-Jul-09	0.6
322	0.4	34.7	27	0.3436	15:10:20	15-Jul-09	0.6
323	2.4	34.7	27	0.3685	15:11:20	15-Jul-09	0.8
324	0.4	34.8	27	0.3392	15:12:20	15-Jul-09	0.8
325	0.1	34.8	27	0.338	15:13:20	15-Jul-09	0.8
326	0.2	34.8	27	0.3386	15:14:20	15-Jul-09	0.8
327	0.1	34.8	26	0.3378	15:15:20	15-Jul-09	0.8
328	0.1	34.9	26	0.3381	15:16:20	15-Jul-09	0.7
329	0.1	34.9	26	0.3378	15:17:20	15-Jul-09	0.7
330	0.1	35	26	0.3379	15:18:20	15-Jul-09	0.6
331	0.2	35	26	0.3386	15:19:20	15-Jul-09	0.5
332	0.4	35	26	0.3393	15:20:20	15-Jul-09	0.4
333	0.2	35	27	0.3383	15:21:20	15-Jul-09	0.4
334	0.2	35.1	27	0.3384	15:22:20	15-Jul-09	0.4
335	0.2	35.1	27	0.3385	15:23:20	15-Jul-09	0.4
336	0.1	35.1	27	0.3377	15:24:20	15-Jul-09	0.4
337	0.2	35.1	27	0.3383	15:25:20	15-Jul-09	0.3
338	0.4	35.1	27	0.3396	15:26:20	15-Jul-09	0.3
339	0.4	35.1	27	0.339	15:27:20	15-Jul-09	0.2
340	0.4	35.1	27	0.3392	15:28:20	15-Jul-09	0.2
341	0.1	35.1	27	0.3381	15:29:20	15-Jul-09	0.2
342	0.5	35	27	0.3394	15:30:20	15-Jul-09	0.2
343	0.4	35	27	0.3392	15:31:20	15-Jul-09	0.3
344	0.5	35	27	0.3398	15:32:20	15-Jul-09	0.3
345	0.2	35	27	0.3384	15:33:20	15-Jul-09	0.3
346	0.6	35	27	0.3401	15:34:20	15-Jul-09	0.3
347	0.2	35	28	0.3387	15:35:20	15-Jul-09	0.3
348	0.2	35	28	0.3384	15:36:20	15-Jul-09	0.3
349	0.3	35	28	0.339	15:37:20	15-Jul-09	0.3
350	0.5	35	28	0.3397	15:38:20	15-Jul-09	0.3
351	0.2	34.9	28	0.3385	15:39:20	15-Jul-09	0.3
352	0.1	34.9	28	0.3379	15:40:20	15-Jul-09	0.3
353	0.1	34.9	28	0.3378	15:41:20	15-Jul-09	0.3
354	0	34.9	28	0.3377	15:42:20	15-Jul-09	0.3
355	0.8	34.9	28	0.3409	15:43:20	15-Jul-09	0.3
356	0.4	34.9	28	0.3391	15:44:20	15-Jul-09	0.3
357	0.3	34.8	28	0.3387	15:45:20	15-Jul-09	0.3
358	0.2	34.8	28	0.3383	15:46:20	15-Jul-09	0.3
359	0.2	34.8	28	0.3381	15:47:20	15-Jul-09	0.3
360	0.1	34.7	28	0.3377	15:48:20	15-Jul-09	0.3
361	0	34.7	28	0.3377	15:49:20	15-Jul-09	0.3
362	0.3	34.7	28	0.3316	15:50:20	15-Jul-09	0.2
363	0.1	34.7	28	0.3358	15:51:20	15-Jul-09	0.2
364	0.9	34.6	28	0.3224	15:52:20	15-Jul-09	0.3
365	0.6	34.6	28	0.3223	15:53:20	15-Jul-09	0.3
366	0.3	34.6	28	0.3305	15:54:20	15-Jul-09	0.3
367	0.6	34.5	29	0.3202	15:55:20	15-Jul-09	0.3
368	0.8	34.5	29	0.3134	15:56:20	15-Jul-09	0.4
369	0.3	34.5	29	0.3284	15:57:20	15-Jul-09	0.4
370	0.2	34.4	29	0.3309	15:58:20	15-Jul-09	0.4
371	0.1	34.4	29	0.3351	15:59:20	15-Jul-09	0.3
372	0	34.3	29	0.3367	16:00:20	15-Jul-09	0.3
373	0.2	34.2	29	0.3306	16:01:20	15-Jul-09	0.3
374	0.1	34.2	29	0.3338	16:02:20	15-Jul-09	0.3
375	0.2	34.2	29	0.3315	16:03:20	15-Jul-09	0.3
376	0.3	34.2	29	0.3281	16:04:20	15-Jul-09	0.3
377	0.2	34.1	29	0.3313	16:05:20	15-Jul-09	0.3
378	0.1	34.1	29	0.3341	16:06:20	15-Jul-09	0.3
379	0.1	34.1	29	0.3333	16:07:20	15-Jul-09	0.3
380	0.1	34	29	0.3341	16:08:20	15-Jul-09	0.3
381	0.1	34	29	0.3338	16:09:20	15-Jul-09	0.2
382	0.2	34	29	0.3306	16:10:20	15-Jul-09	0.2
383	0.6	33.9	29	0.321	16:11:20	15-Jul-09	0.2
384	0.3	33.9	29	0.3284	16:12:20	15-Jul-09	0.2
385	0.1	33.9	29	0.335	16:13:20	15-Jul-09	0.2
386	0.2	33.8	29	0.3308	16:14:20	15-Jul-09	0.2
387	0.1	33.7	29	0.3357	16:15:20	15-Jul-09	0.2
388	0.1	33.7	29	0.3338	16:16:20	15-Jul-09	0.2
389	0	33.7	29	0.3362	16:17:20	15-Jul-09	0.2
390	0.2	33.6	29	0.3314	16:18:20	15-Jul-09	0.2
391	0.2	33.6	29	0.3325	16:19:20	15-Jul-09	0.2
392	0.1	33.6	29	0.3349	16:20:20	15-Jul-09	0.2
393	0.2	33.5	29	0.3312	16:21:20	15-Jul-09	0.2
394	0	33.5	29	0.3361	16:22:20	15-Jul-09	0.2
395	0.2	33.5	29	0.3321	16:23:20	15-Jul-09	0.2
396	0.2	33.4	29	0.3328	16:24:20	15-Jul-09	0.2
397	0.4	33.4	30	0.3261	16:25:20	15-Jul-09	0.2
398	0.1	33.4	30	0.3336	16:26:20	15-Jul-09	0.2
399	0.4	33.3	30	0.3258	16:27:20	15-Jul-09	0.2
400	0.1	33.3	30	0.3341	16:28:20	15-Jul-09	0.2

Appendix I
Ambient Air Dust Monitoring Results - SEAD-12 Removal Action

Seneca Army Depot Activity
Romulus, NY

DataRam 4 Dust Monitor, Serial Number D454

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
395	4.5	32.9	41	0.2914	16:29:33	15-Jul-09	5.1
396	4.6	32.9	41	0.3166	16:30:33	15-Jul-09	5.0
397	4.6	32.9	41	0.3156	16:31:33	15-Jul-09	5.0
398	4.4	32.9	41	0.3114	16:32:33	15-Jul-09	4.9
399	5.7	32.9	41	0.3125	16:33:33	15-Jul-09	5.0
400	4.6	32.9	41	0.3206	16:34:33	15-Jul-09	4.9
401	5	32.9	41	0.3471	16:35:33	15-Jul-09	4.9
402	5.1	32.9	41	0.4173	16:36:33	15-Jul-09	4.9
403	5.5	33	42	0.3871	16:37:33	15-Jul-09	4.9
404	5.2	32.9	42	0.3418	16:38:33	15-Jul-09	4.9
405	6	33	42	0.3215	16:39:33	15-Jul-09	5.0
406	5.2	32.9	42	0.2691	16:40:33	15-Jul-09	5.0
407	5.5	32.9	42	0.3367	16:41:33	15-Jul-09	5.0
408	4.5	33	41	0.327	16:42:33	15-Jul-09	5.0
409	4.5	32.9	41	0.3083	16:43:33	15-Jul-09	5.0
410	4.9	33	41	0.2955	16:44:33	15-Jul-09	5.0
411	4.9	33	41	0.3104	16:45:33	15-Jul-09	5.0
412	4.4	32.9	41	0.2858	16:46:33	15-Jul-09	5.0
413	4.8	32.9	41	0.2768	16:47:33	15-Jul-09	5.0
414	5.8	32.9	42	0.2885	16:48:33	15-Jul-09	5.1
415	6.3	32.9	43	0.4287	16:49:33	15-Jul-09	5.1
416	7.1	32.9	44	0.5054	16:50:33	15-Jul-09	5.3
417	5.3	32.9	44	0.3076	16:51:33	15-Jul-09	5.3
418	5.2	32.9	43	0.2874	16:52:33	15-Jul-09	5.3
419	4.8	32.9	43	0.2721	16:53:33	15-Jul-09	5.3
420	4.4	32.9	43	0.2525	16:54:33	15-Jul-09	5.2
421	4.9	32.9	42	0.2946	16:55:33	15-Jul-09	5.2
422	5.5	32.9	41	0.2952	16:56:33	15-Jul-09	5.2
423	4.8	32.9	41	0.3365	16:57:33	15-Jul-09	5.1
424	5.2	32.9	41	0.388	16:58:33	15-Jul-09	5.2
425	5	32.9	41	0.3259	16:59:33	15-Jul-09	5.2
426	4.4	32.9	41	0.2741	17:00:33	15-Jul-09	5.2
427	5.5	32.9	41	0.2986	17:01:33	15-Jul-09	5.2
428	4.5	32.9	41	0.3401	17:02:33	15-Jul-09	5.2
429	5.5	32.9	41	0.3466	17:03:33	15-Jul-09	5.3
430	5.7	32.9	42	0.3349	17:04:33	15-Jul-09	5.3
431	5.9	32.9	41	0.3511	17:05:33	15-Jul-09	5.2
432	5.7	32.9	41	0.2994	17:06:33	15-Jul-09	5.1
433	5.9	32.8	41	0.2892	17:07:33	15-Jul-09	5.2
434	5.6	32.8	41	0.3521	17:08:33	15-Jul-09	5.2
435	4.7	32.8	40	0.3167	17:09:33	15-Jul-09	5.2
436	5.4	32.8	40	0.3356	17:10:33	15-Jul-09	5.3
437	5.4	32.8	41	0.3556	17:11:33	15-Jul-09	5.3
438	4.4	32.8	41	0.309	17:12:33	15-Jul-09	5.2
439	5.4	32.8	41	0.3079	17:13:33	15-Jul-09	5.3
440	5.9	32.8	41	0.3714	17:14:33	15-Jul-09	5.3
441	6	32.8	41	0.3495	17:15:33	15-Jul-09	5.4
442	6.2	32.8	41	0.3013	17:16:33	15-Jul-09	5.5
443	5.7	32.8	41	0.2894	17:17:33	15-Jul-09	5.5
444	6.2	32.7	41	0.276	17:18:33	15-Jul-09	5.6
445	5.2	32.8	41	0.2642	17:19:33	15-Jul-09	5.6
446	6.9	32.7	41	0.2895	17:20:33	15-Jul-09	5.7
447	6.6	32.8	41	0.3472	17:21:33	15-Jul-09	5.7
448	6.4	32.7	41	0.304	17:22:33	15-Jul-09	5.7
449	6.2	32.7	41	0.3488	17:23:33	15-Jul-09	5.8
450	7.3	32.7	41	0.3387	17:24:33	15-Jul-09	5.9
451	7.3	32.7	41	0.2849	17:25:33	15-Jul-09	6.0
452	7.4	32.7	41	0.3135	17:26:33	15-Jul-09	6.2
453	6.9	32.7	41	0.2599	17:27:33	15-Jul-09	6.3
454	7.6	32.7	41	0.2927	17:28:33	15-Jul-09	6.5
455	7.1	32.7	41	0.2673	17:29:33	15-Jul-09	6.6
456	8.2	32.7	42	0.255	17:30:33	15-Jul-09	6.7
457	8	32.7	42	0.2631	17:31:33	15-Jul-09	6.8
458	8.1	32.7	42	0.2831	17:32:33	15-Jul-09	6.9
459	7.9	32.6	42	0.2744	17:33:33	15-Jul-09	7.1
460	8.7	32.6	42	0.2858	17:34:33	15-Jul-09	7.2
461	8.6	32.6	42	0.3069	17:35:33	15-Jul-09	7.5
462	7.9	32.6	42	0.2678	17:36:33	15-Jul-09	7.5
463	8.2	32.6	42	0.3418	17:37:33	15-Jul-09	7.6
464	7.3	32.6	42	0.3448	17:38:33	15-Jul-09	7.7
465	6.9	32.6	42	0.3228	17:39:33	15-Jul-09	7.7
466	5.6	32.6	42	0.3121	17:40:33	15-Jul-09	7.6
467	6.1	32.6	42	0.3088	17:41:33	15-Jul-09	7.5
468	6.7	32.6	42	0.3696	17:42:33	15-Jul-09	7.5
469	5.8	32.6	42	0.2757	17:43:33	15-Jul-09	7.4
470	5.9	32.5	42	0.3035	17:44:33	15-Jul-09	7.3
471	6.3	32.5	42	0.2873	17:45:33	15-Jul-09	7.3
472	6.4	32.5	42	0.2985	17:46:33	15-Jul-09	7.2
473	6.4	32.5	42	0.2894	17:47:33	15-Jul-09	7.1
474	5.9	32.5	42	0.2902	17:48:33	15-Jul-09	6.9
475	6.3	32.5	42	0.2806	17:49:33	15-Jul-09	6.8
476	6.9	32.5	42	0.3118	17:50:33	15-Jul-09	6.7
477	6.3	32.4	42	0.3404	17:51:33	15-Jul-09	6.6
478	6.1	32.4	42	0.3012	17:52:33	15-Jul-09	6.4
479	6.3	32.4	42	0.3316	17:53:33	15-Jul-09	6.3
480	6.5	32.4	42	0.316	17:54:33	15-Jul-09	6.3
481	6.8	32.4	43	0.3196	17:55:33	15-Jul-09	6.3
482	6.1	32.3	43	0.31	17:56:33	15-Jul-09	6.3
483	7	32.3	43	0.3555	17:57:33	15-Jul-09	6.4
484	5.9	32.3	43	0.3194	17:58:33	15-Jul-09	6.3
485	5.5	32.3	43	0.3045	17:59:33	15-Jul-09	6.3
486	5.8	32.2	43	0.31	18:00:33	15-Jul-09	6.3
487	6.8	32.2	43	0.2762	18:01:33	15-Jul-09	6.3
488	6.1	32.2	43	0.2466	18:02:33	15-Jul-09	6.3
489	6.1	32.2	43	0.2433	18:03:33	15-Jul-09	6.3
490	6.9	32.2	43	0.2801	18:04:33	15-Jul-09	6.3
491	7	32.2	43	0.2517	18:05:33	15-Jul-09	6.4
492	7.4	32.1	43	0.2633	18:06:33	15-Jul-09	6.4
493	7.2	32.1	43	0.2859	18:07:33	15-Jul-09	6.5
494	7.8	32.1	43	0.3163	18:08:33	15-Jul-09	6.6

DataRam 4 Dust Monitor, Serial Number D464

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
401	0.4	33.3	30	0.327	16:29:20	15-Jul-09	0.2
402	0.3	33.2	30	0.3298	16:30:20	15-Jul-09	0.2
403	0.1	33.2	30	0.3339	16:31:20	15-Jul-09	0.2
404	0.2	33.2	30	0.3311	16:32:20	15-Jul-09	0.2
405	0.3	33.2	30	0.3283	16:33:20	15-Jul-09	0.2
406	0.1	33.2	30	0.3336	16:34:20	15-Jul-09	0.2
407	0.2	33.1	30	0.3322	16:35:20	15-Jul-09	0.2
408	0.4	33.1	30	0.3248	16:36:20	15-Jul-09	0.2
409	0.2	33.1	30	0.3327	16:37:20	15-Jul-09	0.2
410	0.2	33	30	0.3326	16:38:20	15-Jul-09	0.2
411	0.6	33	30	0.321	16:39:20	15-Jul-09	0.3
412	0.2	33	30	0.3308	16:40:20	15-Jul-09	0.3
413	0.2	33	30	0.3303	16:41:20	15-Jul-09	0.3
414	0.4	32.9	30	0.326	16:42:20	15-Jul-09	0.3
415	0.2	32.9	30	0.3321	16:43:20	15-Jul-09	0.3
416	0.5	32.9	30	0.3266	16:44:20	15-Jul-09	0.3
417	0.2	32.7	31	0.3329	16:45:20	15-Jul-09	0.3
418	0.2	32.8	31	0.3335	16:46:20	15-Jul-09	0.3
419	0.3	32.7	31	0.3318	16:47:20	15-Jul-09	0.3
420	0.5	32.7	31	0.3278	16:48:20	15-Jul-09	0.3
421	0.1	32.6	31	0.3357	16:49:20	15-Jul-09	0.3
422	0.1	32.6	32	0.3342	16:50:20	15-Jul-09	0.3
423	0.1	32.6	32	0.3355	16:51:20	15-Jul-09	0.3
424	0.1	32.6	31	0.3356	16:52:20	15-Jul-09	0.3
425	0.3	32.6	31	0.3325	16:53:20	15-Jul-09	0.3
426	0.2	32.5	31	0.3328	16:54:20	15-Jul-09	0.3
427	0.5	32.5	31	0.3273	16:55:20	15-Jul-09	0.3
428	0.1	32.5	31	0.3363	16:56:20	15-Jul-09	0.3
429	0.1	32.5	31	0.3362	16:57:20	15-Jul-09	0.2
430	0.2	32.4	31	0.3332	16:58:20	15-Jul-09	0.2
431	0.1	32.3	32	0.3347	16:59:20	15-Jul-09	0.2
432	0.1	32.3	32	0.3347	17:00:20	15-Jul-09	0.2
433	0.3	32.3	32	0.3331	17:01:20	15-Jul-09	0.2
434	0.2	32.2	32	0.3334	17:02:20	15-Jul-09	0.2
435	0.1	32.2	32	0.3355	17:03:20	15-Jul-09	0.2
436	0.2	32.1	32	0.3337	17:04:20	15-Jul-09	0.2
437	0.6	32.1	32	0.3267	17:05:20	15-Jul-09	0.2
438	0.1	32	32	0.3346	17:06:20	15-Jul-09	0.2
439	0.3	32	32	0.3309	17:07:20	15-Jul-09	0.2
440	0.5	31.9	32	0.3272	17:08:20	15-Jul-09	0.2
441	0.1	31.9	32	0.3356	17:09:20	15-Jul-09	0.2
442	0.1	31.9	32	0.3349	17:10:20	15-Jul-09	0.2
443	0.1	31.8	32	0.3351	17:11:20	15-Jul-09	0.2
444	0.2	31.8	32	0.3345	17:12:20	15-Jul-09	0.2
445	0.1	31.7	32	0.3364	17:13:20	15-Jul-09	0.2
446	0.1	31.7	32	0.336	17:14:20	15-Jul-09	0.2
447	0	31.6	32	0.3375	17:15:20	15-Jul-09	0.2
448	0.1	31.6	32	0.3351	17:16:20	15-Jul-09	0.2
449	0.3	31.6	32	0.3307	17:17:20	15-Jul-09	0.2
450	0.3	31.5	32	0.3324	17:18:20	15-Jul-09	0.2
451	0.2	31.5	33	0.333	17:19:20	15-Jul-09	0.2
452	0	31.5	33	0.3369	17:20:20	15-Jul-09	0.2
453	0.6	31.4	33	0.3269	17:21:20	15-Jul-09	0.2
454	0.6	31.4	33	0.3262	17:22:20	15-Jul-09	0.2
455	0.4	31.3	33	0.3309	17:23:20	15-Jul-09	0.2
456	0.4	31.3	33	0.3299	17:24:20	15-Jul-09	0.2
457	1.3	31.3	33	0.3127	17:25:20	15-Jul-09	0.3
458	0.9	31.2	33	0.3209	17:26:20	15-Jul-09	0.4
459	0.9	31.2	33	0.3199	17:27:20	15-Jul-09	0.4
460	1	31.2	33	0.3146	17:28:20	15-Jul-09	0.5
461	0.7	31.1	33	0.321	17:29:20	15-Jul-09	0.5
462	0.7	31.1	33	0.3228	17:30:20	15-Jul-09	0.5
463	1.2	31.1	33	0.3111	17:31:20	15-Jul-09	0.6
464	1.4	31.1	34	0.311	17:32:20	15-Jul-09	0.7
465	1.9	31	33	0.3017	17:33:20	15-Jul-09	0.8
466	2.4	31	33	0.2912	17:34:20	15-Jul-09	0.9
467	2.4	31	34	0.2967	17:35:20	15-Jul-09	1.1
468	2.1	30.9	34	0.3033	17:36:20	15-Jul-09	1.2
469	1.3	30.9	34	0.3151	17:37:20	15-Jul-09	1.2
470	1.5	30.9	34	0.3126	17:38:20	15-Jul-09	1.3
471	1.1	30.9	34	0.3199	17:39:20	15-Jul-09	1.3
472	1.4	30.8	34	0.3133	17:40:20	15-Jul-09	1.4
473	0.9	30.8	34	0.3216	17:41:20	15-Jul-09	1.4
474	0.9	30.7	34	0.324	17:42:20	15-Jul-09	1.4
475	0.8	30.7	34	0.3224	17:43:20	15-Jul-09	1.4
476	0.8	30.7	35	0.324	17:44:20	15-Jul-09	1.3
477	1.1	30.6	34	0.3184	17:45:20	15-Jul-09	1.4
478	0.4	30.6	35	0.3303	17:46:20	15-Jul-09	1.4
479	0.8	30.6	35	0.3246	17:47:20	15-Jul-09	1.3
480	1.4	30.5	35	0.3133	17:48:20	15-Jul-09	1.3
481	1.1	30.5	35	0.3176	17:49:20	15-Jul-09	1.3
482	0.8	30.5	35	0.3223	17:50:20	15-Jul-09	1.2
483	1.1	30.4	35	0.3177	17:51:20	15-Jul-09	1.1
484	0.4	30.4	35	0.3307	17:52:20	15-Jul-09	1.0
485	0.9	30.3	35	0.3222	17:53:20	15-Jul-09	1.0
486	0.5	30.3	35	0.3274	17:54:20	15-Jul-09	0.9
487	1.4	30.3	35	0.3176	17:55:20	15-Jul-09	0.9
488	0.5	30.2	35	0.3327	17:56:20	15-Jul-09	0.9
489	1.5	30.2	36	0.3246	17:57:20	15-Jul-09	0.9
490	1.7	30.2	35	0.3308	17:58:20	15-Jul-09	1.0
491	1.2	30.1	36	0.3455	17:59:20	15-Jul-09	1.0
492	1.9	30.1	36	0.3947	18:00:20	15-Jul-09	1.0
493	2	30.1	36	0.4337	18:01:20	15-Jul-09	1.1
494	2.2	30.1	36	0.4715	18:02:20	15-Jul-09	1.2
495	1.3	30.1	36	0.3942	18:03:20	15-Jul-09	1.2
496	1.8	30	36	0.4193	18:04:20	15-Jul-09	1.3
497	2.6	30	36	0.4124	18:05:20	15-Jul-09	1.4
498	2.5	30	36	0.3469	18:06:20	15-Jul-09	1.5
499	1.9	29.9	36	0.3663	18:07:20	15-Jul-09	1.5
500	1.9	29.9	36	0.3743	18:08:20	15-Jul-09	1.6

Appendix I
Ambient Air Dust Monitoring Results - SEAD-12 Removal Action

Seneca Army Depot Activity
Romulus, NY

DataRam 4 Dust Monitor, Serial Number D454

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
495	8.2	32.1	44	0.4507	18:09:33	15-Jul-09	6.7
496	7.6	32.1	44	0.4245	18:10:33	15-Jul-09	6.8
497	6.9	32	44	0.403	18:11:33	15-Jul-09	6.8
498	6.1	32	44	0.3494	18:12:33	15-Jul-09	6.8
499	5.7	32	44	0.3045	18:13:33	15-Jul-09	6.7
500	5.9	32	44	0.2889	18:14:33	15-Jul-09	6.7
501	5.5	32	44	0.3562	18:15:33	15-Jul-09	6.7
502	5.5	31.9	44	0.292	18:16:33	15-Jul-09	6.7
503	6.5	31.9	44	0.3266	18:17:33	15-Jul-09	6.7
504	6.1	31.8	43	0.3356	18:18:33	15-Jul-09	6.7
505	6.9	31.8	43	0.4202	18:19:33	15-Jul-09	6.7
506	5.8	31.8	43	0.3544	18:20:33	15-Jul-09	6.6
507	5.5	31.8	44	0.3822	18:21:33	15-Jul-09	6.5
508	5.5	31.8	44	0.3107	18:22:33	15-Jul-09	6.4
509	5.1	31.7	43	0.2933	18:23:33	15-Jul-09	6.3
510	4.9	31.7	44	0.3206	18:24:33	15-Jul-09	6.1
511	5.9	31.7	43	0.3501	18:25:33	15-Jul-09	6.0
512	5.2	31.7	43	0.2882	18:26:33	15-Jul-09	5.8
513	4.9	31.7	44	0.308	18:27:33	15-Jul-09	5.7
514	5.9	31.7	44	0.3054	18:28:33	15-Jul-09	5.7
515	7.6	31.7	45	0.3593	18:29:33	15-Jul-09	5.8
516	7.8	31.6	46	0.4014	18:30:33	15-Jul-09	5.9
517	7.6	31.6	47	0.4384	18:31:33	15-Jul-09	6.0
518	7.3	31.6	47	0.3858	18:32:33	15-Jul-09	6.2
519	6.5	31.6	47	0.3457	18:33:33	15-Jul-09	6.2
520	9.2	31.6	47	0.3812	18:34:33	15-Jul-09	6.4
521	9.3	31.6	47	0.4896	18:35:33	15-Jul-09	6.5
522	6.2	31.6	47	0.3302	18:36:33	15-Jul-09	6.5
523	7	31.5	47	0.3824	18:37:33	15-Jul-09	6.6
524	7	31.5	48	0.3592	18:38:33	15-Jul-09	6.7
525	7.7	31.5	48	0.3983	18:39:33	15-Jul-09	6.9
526	6.7	31.5	48	0.2875	18:40:33	15-Jul-09	7.0
527	6.7	31.5	48	0.3437	18:41:33	15-Jul-09	7.0
528	7.4	31.5	48	0.3648	18:42:33	15-Jul-09	7.2
529	6.5	31.4	48	0.3543	18:43:33	15-Jul-09	7.3
530	7.5	31.4	48	0.4126	18:44:33	15-Jul-09	7.4
531	6.3	31.4	48	0.316	18:45:33	15-Jul-09	7.3
532	5.8	31.4	48	0.3182	18:46:33	15-Jul-09	7.2
533	5.6	31.4	49	0.3329	18:47:33	15-Jul-09	7.0
534	5.7	31.4	49	0.324	18:48:33	15-Jul-09	6.9
535	5.6	31.3	49	0.3627	18:49:33	15-Jul-09	6.9
536	7	31.3	50	0.3817	18:50:33	15-Jul-09	6.8
537	7.5	31.3	50	0.3638	18:51:33	15-Jul-09	6.6

DataRam 4 Dust Monitor, Serial Number D464

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
501	2.1	29.9	36	0.3872	18:09:20	15-Jul-09	1.7
502	1.9	29.9	37	0.4001	18:10:20	15-Jul-09	1.8
503	1.7	29.8	37	0.4043	18:11:20	15-Jul-09	1.8
504	1.2	29.8	37	0.3876	18:12:20	15-Jul-09	1.8
505	0.8	29.8	37	0.37	18:13:20	15-Jul-09	1.8
506	1.5	29.7	37	0.3991	18:14:20	15-Jul-09	1.8
507	1.1	29.7	37	0.3712	18:15:20	15-Jul-09	1.8
508	1	29.7	37	0.3686	18:16:20	15-Jul-09	1.7
509	1.3	29.7	37	0.3775	18:17:20	15-Jul-09	1.7
510	0.8	29.7	38	0.3599	18:18:20	15-Jul-09	1.6
511	1.1	29.7	38	0.3698	18:19:20	15-Jul-09	1.6
512	0.5	29.6	38	0.3526	18:20:20	15-Jul-09	1.5
513	1.8	29.6	38	0.3981	18:21:20	15-Jul-09	1.4
514	1.7	29.6	38	0.3962	18:22:20	15-Jul-09	1.4
515	1.4	29.6	38	0.3763	18:23:20	15-Jul-09	1.4
516	2.3	29.6	38	0.3929	18:24:20	15-Jul-09	1.4
517	1.5	29.6	38	0.3481	18:25:20	15-Jul-09	1.4
518	1.9	29.6	38	0.3445	18:26:20	15-Jul-09	1.4
519	1.2	29.6	38	0.3516	18:27:20	15-Jul-09	1.3
520	0.8	29.6	38	0.3513	18:28:20	15-Jul-09	1.3
521	0.6	29.6	38	0.3487	18:29:20	15-Jul-09	1.3
522	0.4	29.6	39	0.344	18:30:20	15-Jul-09	1.2
523	0.1	29.5	39	0.3398	18:31:20	15-Jul-09	1.2
524	0.6	29.5	39	0.3481	18:32:20	15-Jul-09	1.1
525	1	29.5	39	0.3629	18:33:20	15-Jul-09	1.1
526	2.5	29.5	39	0.438	18:34:20	15-Jul-09	1.2
527	2	29.5	39	0.4063	18:35:20	15-Jul-09	1.3
528	1.1	29.5	39	0.396	18:36:20	15-Jul-09	1.3
529	0.6	29.5	39	0.3668	18:37:20	15-Jul-09	1.2
530	0.4	29.5	40	0.3558	18:38:20	15-Jul-09	1.2
531	0.6	29.5	40	0.3855	18:39:20	15-Jul-09	1.1
532	1.2	29.5	40	0.4006	18:40:20	15-Jul-09	1.0
533	1.1	29.5	40	0.3804	18:41:20	15-Jul-09	1.0
534	0.9	29.5	40	0.3749	18:42:20	15-Jul-09	0.9
535	0.9	29.5	40	0.374	18:43:20	15-Jul-09	0.9
536	0.5	29.5	40	0.3577	18:44:20	15-Jul-09	0.9
537	1.3	29.5	40	0.3794	18:45:20	15-Jul-09	1.0
538	0.5	29.4	41	0.3475	18:46:20	15-Jul-09	1.0
539	0.8	29.4	41	0.3552	18:47:20	15-Jul-09	1.0
540	1.2	29.4	41	0.3632	18:48:20	15-Jul-09	1.0
541	1.4	29.4	41	0.3656	18:49:20	15-Jul-09	1.1
542	0.7	29.4	41	0.3611	18:50:20	15-Jul-09	1.0
543	1.3	29.4	41	0.3675	18:51:20	15-Jul-09	0.9

1	23.3	24.5	50	0.1952	6:43:28	16-Jul-09	
2	22.6	24.5	53	0.1652	6:44:28	16-Jul-09	
3	25.4	24.5	54	0.1862	6:45:28	16-Jul-09	
4	22.7	24.5	56	0.1723	6:46:28	16-Jul-09	
5	22.9	24.5	57	0.1713	6:47:28	16-Jul-09	
6	22.7	24.5	57	0.1733	6:48:28	16-Jul-09	
7	23.5	24.5	58	0.1808	6:49:28	16-Jul-09	
8	24.6	24.5	58	0.173	6:50:28	16-Jul-09	
9	23.6	24.5	59	0.1643	6:51:28	16-Jul-09	
10	23.1	24.5	59	0.1632	6:52:28	16-Jul-09	
11	23.4	24.5	60	0.1637	6:53:28	16-Jul-09	
12	22.8	24.5	60	0.1691	6:54:28	16-Jul-09	
13	23.5	24.4	60	0.1802	6:55:28	16-Jul-09	
14	23.1	24.5	61	0.1676	6:56:28	16-Jul-09	
15	25.1	24.5	61	0.1673	6:57:28	16-Jul-09	
16	23.8	24.4	61	0.1752	6:58:28	16-Jul-09	23.5
17	23.8	24.5	61	0.1698	6:59:28	16-Jul-09	23.5
18	24.9	24.5	62	0.187	7:00:28	16-Jul-09	23.7
19	24.5	24.5	62	0.1727	7:01:28	16-Jul-09	23.6
20	24.8	24.5	62	0.1787	7:02:28	16-Jul-09	23.8
21	23.6	24.5	62	0.1681	7:03:28	16-Jul-09	23.8
22	24.4	24.5	62	0.1682	7:04:28	16-Jul-09	23.9
23	24.8	24.5	62	0.1715	7:05:28	16-Jul-09	24.0
24	24.9	24.5	62	0.1778	7:06:28	16-Jul-09	24.0
25	24.5	24.5	62	0.1644	7:07:28	16-Jul-09	24.1
26	26	24.5	63	0.1828	7:08:28	16-Jul-09	24.2
27	25.4	24.5	63	0.1891	7:09:28	16-Jul-09	24.4
28	25.1	24.6	63	0.1662	7:10:28	16-Jul-09	24.5
29	24.9	24.6	63	0.1694	7:11:28	16-Jul-09	24.6
30	24.6	24.6	63	0.1737	7:12:28	16-Jul-09	24.7
31	25.4	24.6	63	0.1879	7:13:28	16-Jul-09	24.7
32	25.6	24.6	64	0.1846	7:14:28	16-Jul-09	24.8
33	24.8	24.6	64	0.1863	7:15:28	16-Jul-09	24.9
34	24.2	24.7	64	0.1721	7:16:28	16-Jul-09	24.8
35	24.1	24.7	64	0.1573	7:17:28	16-Jul-09	24.8
36	23.1	24.7	64	0.1521	7:18:28	16-Jul-09	24.7
37	23.4	24.7	64	0.1538	7:19:28	16-Jul-09	24.7
38	25.2	24.8	64	0.1696	7:20:28	16-Jul-09	24.8
39	24.1	24.8	64	0.1672	7:21:28	16-Jul-09	24.7
40	24.2	24.9	64	0.1721	7:22:28	16-Jul-09	24.7
41	24.3	24.9	64	0.1641	7:23:28	16-Jul-09	24.7
42	24.6	24.9	64	0.1667	7:24:28	16-Jul-09	24.6
43	23.9	25	64	0.1713	7:25:28	16-Jul-09	24.5
44	24.9	25	64	0.166	7:26:28	16-Jul-09	24.5
45	24.5	25.1	64	0.1656	7:27:28	16-Jul-09	24.4
46	25.1	25.1	64	0.147	7:28:28	16-Jul-09	24.5
47	25	25.2	64	0.1795	7:29:28	16-Jul-09	24.4
48	24.2	25.2	64	0.1672	7:30:28	16-Jul-09	24.4
49	25	25.3	64	0.1807	7:31:28	16-Jul-09	24.4
50	25.4	25.4	64	0.1903	7:32:28	16-Jul-09	24.4
51	25	25.4	64	0.1806	7:33:28	16-Jul-09	24.5
52	24.7	25.5	64	0.1714	7:34:28	16-Jul-09	24.6
53	25.4	25.5	64	0.1691	7:35:28	16-Jul-09	24.7
54	29.1	25.6	64	0.1856	7:36:28	16-Jul-09	25.0

1	26.1	23.6	44	0.4004	6:46:27	16-Jul-09	
2	31.2	23.6	45	0.7216	6:47:27	16-Jul-09	
3	15.9	23.6	47	0.3005	6:48:27	16-Jul-09	
4	22.4	23.6	48	0.3897	6:49:27	16-Jul-09	
5	16.7	23.5	49	0.3133	6:50:27	16-Jul-09	
6	27	23.6	50	0.3834	6:51:27	16-Jul-09	
7	23.6	23.6	51	0.435	6:52:27	16-Jul-09	
8	14.4	23.6	52	0.2591	6:53:27	16-Jul-09	
9	17.7	23.6	52	0.2904	6:54:27	16-Jul-09	
10	26.4	23.6	53	0.5175	6:55:27	16-Jul-09	
11	21.3	23.6	53	0.41	6:56:27	16-Jul-09	
12	20.1	23.6	54	0.2992	6:57:27	16-Jul-09	
13	26.2	23.6	54	0.4342	6:58:27	16-Jul-09	
14	14.7	23.6	55	0.2507	6:59:27	16-Jul-09	
15	30.6	23.6	55	0.356	7:00:27	16-Jul-09	
16	26.8	23.6	55	0.5254	7:01:27	16-Jul-09	22.6
17	17.4	23.6	56	0.3641	7:02:27	16-Jul-09	22.0
18	15.1	23.6	56	0.2229	7:03:27	16-Jul-09	21.0
19	15.8	23.6	56	0.2278	7:04:27	16-Jul-09	21.0
20	14.4	23.7	56	0.2207	7:05:27	16-Jul-09	20.5
21	14.3	23.7	56	0.2021	7:06:27	16-Jul-09	20.4
22	14.2	23.7	57	0.2011	7:07:27	16-Jul-09	19.6
23	14.6	23.7	57	0.2021	7:08:27	16-Jul-09	19.0
24	15.4	23.7	57	0.2377	7:09:27	16-Jul-09	19.1
25	15.1	23.7	57	0.2429	7:10:27	16-Jul-09	18.9
26	14.1	23.7	57	0.2053	7:11:27	16-Jul-09	18.1
27	15.5	23.7	58	0.2297	7:12:27	16-Jul-09	17.8
28	16.9	23.7	58	0.2597	7:13:27	16-Jul-09	17.6
29	15.8	23.8	58	0.2523	7:14:27	16-Jul-09	16.9
30	15.8	23.8	58	0.246	7:15:27	16-Jul-09	17.0
31	14.3	23.8	58	0.2028	7:16:27	16-Jul-09	16.0
32	14.6	23.9	58	0.2063	7:17:27	16-Jul-09	15.2
33	14.2	23.9	58	0.2104	7:18:27	16-Jul-09	15.0
34	14.7	23.9	58	0.2118	7:19:27	16-Jul-09	15.0
35	14	24	59	0.189	7:20:27	16-Jul-09	14.9
36	15.4	24	59	0.2326	7:21:27	16-Jul-09	14.9
37	15	24	59	0.2149	7:22:27	16-Jul-09	15.0
38	14.5	24	59	0.1951	7:23:27	16-Jul-09	15.0
39	15.5	24.1	59	0.2235	7:24:27	16-Jul-09	15.1
40	15.2	24.1	59	0.2059	7:25:27	16-Jul-09	15.0
41	17.4	24.2	59	0.22	7:26:27	16-Jul-09	15.2
42	17.3	24.2	59	0.3199	7:27:27	16-Jul-09	15.4
43	15.1	24.3	59	0.2433	7:28:27	16-Jul-09	15.4
44	15.4	24.3	59	0.2195	7:29:27	16-Jul-09	15.3
45	15.2	24.4	59	0.2268	7:30:27	16-Jul-09	15.2
46	15	24.4	59	0.2141	7:31:27	16-Jul-09	15.2
47	16.9	24.5	59	0.2277	7:32:27	16-Jul-09	15.3
48	15.2	24.5	59	0.2109	7:33:27	16-Jul-09	15.4
49	18.1	24.6	59	0.2177	7:34:27	16-Jul-09	15.6
50	29	24.6	59	0.3635	7:35:27	16-Jul-09	16.5
51	16.9	24.7	59	0.2585	7:36:27	16-Jul-09	16.7

Appendix I
Ambient Air Dust Monitoring Results - SEAD-12 Removal Action

Seneca Army Depot Activity
Romulus, NY

DataRam 4 Dust Monitor, Serial Number D454

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
55	24.4	25.6	64	0.1612	7:37:28	16-Jul-09	25.0
56	25.6	25.7	64	0.1717	7:38:28	16-Jul-09	25.1
57	26.5	25.7	64	0.1918	7:39:28	16-Jul-09	25.2
58	25.7	25.8	64	0.1763	7:40:28	16-Jul-09	25.3
59	25.5	25.9	64	0.1635	7:41:28	16-Jul-09	25.4
60	25.6	25.9	64	0.1622	7:42:28	16-Jul-09	25.4
61	48.5	26	64	0.2482	7:43:28	16-Jul-09	26.9
62	26.1	26	64	0.1906	7:44:28	16-Jul-09	27.0
63	25	26.1	64	0.1602	7:45:28	16-Jul-09	27.0
64	25.1	26.1	64	0.1674	7:46:28	16-Jul-09	27.0
65	24.4	26.2	64	0.1566	7:47:28	16-Jul-09	27.0
66	26.1	26.2	64	0.1715	7:48:28	16-Jul-09	27.0
67	29.4	26.2	64	0.2093	7:49:28	16-Jul-09	27.3
68	25.1	26.3	64	0.1631	7:50:28	16-Jul-09	27.3
69	30.8	26.4	64	0.2066	7:51:28	16-Jul-09	27.7
70	30.6	26.5	64	0.1901	7:52:28	16-Jul-09	27.8
71	32.1	26.5	64	0.1834	7:53:28	16-Jul-09	28.3
72	28.3	26.5	64	0.203	7:54:28	16-Jul-09	28.4
73	25.8	26.6	64	0.1674	7:55:28	16-Jul-09	28.4
74	25.5	26.6	64	0.1608	7:56:28	16-Jul-09	28.4
75	25.1	26.7	64	0.158	7:57:28	16-Jul-09	28.3
76	25.4	26.7	63	0.1705	7:58:28	16-Jul-09	28.3
77	25.5	26.8	63	0.1731	7:59:28	16-Jul-09	26.9
78	25.8	26.9	63	0.17	8:00:28	16-Jul-09	26.9
79	27.2	27	63	0.1611	8:01:28	16-Jul-09	27.0
80	38	27	63	0.2614	8:02:28	16-Jul-09	27.8
81	25.9	27.1	63	0.1818	8:03:28	16-Jul-09	27.9
82	24.6	27.1	63	0.1444	8:04:28	16-Jul-09	27.8
83	34.1	27.2	63	0.1919	8:05:28	16-Jul-09	28.1
84	31	27.2	63	0.197	8:06:28	16-Jul-09	28.5
85	29.9	27.3	63	0.1691	8:07:28	16-Jul-09	28.4
86	32.7	27.3	62	0.186	8:08:28	16-Jul-09	28.6
87	28.5	27.4	63	0.2035	8:09:28	16-Jul-09	28.3
88	29.6	27.4	62	0.1815	8:10:28	16-Jul-09	28.4
89	28.7	27.5	62	0.2068	8:11:28	16-Jul-09	28.6
90	26.5	27.5	62	0.1769	8:12:28	16-Jul-09	28.7
91	29.9	27.6	62	0.1947	8:13:28	16-Jul-09	29.0
92	26	27.7	62	0.174	8:14:28	16-Jul-09	29.0
93	27.9	27.7	62	0.1808	8:15:28	16-Jul-09	29.1
94	33.5	27.7	62	0.2068	8:16:28	16-Jul-09	29.6
95	26.6	27.8	62	0.1728	8:17:28	16-Jul-09	29.6
96	32.8	27.9	62	0.195	8:18:28	16-Jul-09	29.3
97	38.2	28	62	0.1565	8:19:28	16-Jul-09	30.0
98	71.1	28	62	0.2671	8:20:28	16-Jul-09	32.9
99	27.5	28	62	0.1771	8:21:28	16-Jul-09	32.5
100	73.6	28.1	61	0.1983	8:22:28	16-Jul-09	35.2
101	28.4	28.2	61	0.2261	8:23:28	16-Jul-09	35.1
102	33.1	28.2	61	0.1771	8:24:28	16-Jul-09	35.1
103	46.6	28.3	61	0.2138	8:25:28	16-Jul-09	36.3
104	44.2	28.3	61	0.1679	8:26:28	16-Jul-09	37.2
105	29.8	28.4	61	0.2032	8:27:28	16-Jul-09	37.2
106	26.5	28.5	61	0.1696	8:28:28	16-Jul-09	37.2
107	27.8	28.5	61	0.1824	8:29:28	16-Jul-09	37.1
108	27.7	28.6	61	0.1723	8:30:28	16-Jul-09	37.2
109	112.7	28.6	60	0.2738	8:31:28	16-Jul-09	42.5
110	28.4	28.7	60	0.1973	8:32:28	16-Jul-09	42.2
111	78.3	28.8	60	0.2055	8:33:28	16-Jul-09	45.4
112	26.8	28.9	60	0.1705	8:34:28	16-Jul-09	45.0
113	26	28.9	60	0.1544	8:35:28	16-Jul-09	44.3
114	26.6	29	60	0.1648	8:36:28	16-Jul-09	41.5
115	26.5	29.1	60	0.1699	8:37:28	16-Jul-09	41.4
116	60.8	29.1	59	0.176	8:38:28	16-Jul-09	40.6
117	33.4	29.2	59	0.2462	8:39:28	16-Jul-09	41.0
118	26.6	29.2	59	0.1841	8:40:28	16-Jul-09	40.5
119	26.1	29.3	59	0.1585	8:41:28	16-Jul-09	39.3
120	26.2	29.4	59	0.1678	8:42:28	16-Jul-09	38.1
121	26	29.4	59	0.1699	8:43:28	16-Jul-09	37.9
122	146.1	29.5	59	0.2727	8:44:28	16-Jul-09	45.4
123	27.7	29.5	59	0.2156	8:45:28	16-Jul-09	45.4
124	29.4	29.6	59	0.1821	8:46:28	16-Jul-09	45.5
125	26.5	29.7	58	0.1759	8:47:28	16-Jul-09	40.1
126	36.7	29.7	58	0.1964	8:48:28	16-Jul-09	40.6
127	27.8	29.8	58	0.1778	8:49:28	16-Jul-09	37.5
128	86.8	29.9	58	0.2376	8:50:28	16-Jul-09	41.2
129	26.8	29.9	58	0.1822	8:51:28	16-Jul-09	41.3
130	27.1	30	58	0.1692	8:52:28	16-Jul-09	41.3
131	28	30.1	58	0.1796	8:53:28	16-Jul-09	41.4
132	26.3	30.1	58	0.1694	8:54:28	16-Jul-09	39.2
133	26	30.1	57	0.1587	8:55:28	16-Jul-09	38.8
134	58	30.2	57	0.242	8:56:28	16-Jul-09	40.7
135	27.1	30.3	57	0.1873	8:57:28	16-Jul-09	40.8
136	28.2	30.3	57	0.1672	8:58:28	16-Jul-09	40.9
137	28.2	30.4	57	0.1797	8:59:28	16-Jul-09	41.0
138	44.9	30.4	57	0.204	9:00:28	16-Jul-09	34.7
139	28.8	30.5	56	0.1703	9:01:28	16-Jul-09	34.8
140	138.8	30.6	56	0.2819	9:02:28	16-Jul-09	41.6
141	26.2	30.6	56	0.1862	9:03:28	16-Jul-09	41.6
142	27.2	30.7	56	0.1636	9:04:28	16-Jul-09	41.0
143	31.1	30.7	56	0.1953	9:05:28	16-Jul-09	41.2
144	27.6	30.8	56	0.1603	9:06:28	16-Jul-09	37.5
145	31.4	30.9	56	0.2004	9:07:28	16-Jul-09	37.8
146	26.7	30.9	56	0.172	9:08:28	16-Jul-09	37.8
147	26.7	31	56	0.1704	9:09:28	16-Jul-09	37.7
148	32	31	55	0.186	9:10:28	16-Jul-09	38.1
149	27.6	31.1	55	0.1925	9:11:28	16-Jul-09	38.2
150	25.5	31.1	55	0.156	9:12:28	16-Jul-09	36.1
151	25.6	31.2	55	0.1566	9:13:28	16-Jul-09	36.0
152	56.6	31.2	55	0.1807	9:14:28	16-Jul-09	37.8
153	37.3	31.2	55	0.2916	9:15:28	16-Jul-09	38.4
154	79.4	31.2	55	0.249	9:16:28	16-Jul-09	40.5

DataRam 4 Dust Monitor, Serial Number D464

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
52	16.4	24.7	59	0.2355	7:37:27	16-Jul-09	16.8
53	24.6	24.8	59	0.3155	7:38:27	16-Jul-09	17.4
54	16.2	24.9	59	0.2411	7:39:27	16-Jul-09	17.5
55	34.6	24.9	59	0.3335	7:40:27	16-Jul-09	18.7
56	19.4	25	59	0.3459	7:41:27	16-Jul-09	18.9
57	17.1	25	59	0.2266	7:42:27	16-Jul-09	18.9
58	30.5	25.1	59	0.4569	7:43:27	16-Jul-09	19.7
59	17	25.1	59	0.3064	7:44:27	16-Jul-09	19.8
60	17.5	25.1	59	0.2294	7:45:27	16-Jul-09	20.0
61	18.1	25.2	59	0.2704	7:46:27	16-Jul-09	20.2
62	15.9	25.2	59	0.2201	7:47:27	16-Jul-09	20.2
63	20.3	25.3	59	0.253	7:48:27	16-Jul-09	20.4
64	20.3	25.3	59	0.3329	7:49:27	16-Jul-09	20.7
65	17.2	25.4	59	0.2203	7:50:27	16-Jul-09	20.7
66	29	25.5	59	0.3744	7:51:27	16-Jul-09	20.7
67	19.5	25.5	59	0.3012	7:52:27	16-Jul-09	20.9
68	24.1	25.6	59	0.2881	7:53:27	16-Jul-09	21.3
69	19.3	25.6	59	0.2851	7:54:27	16-Jul-09	21.0
70	30.5	25.7	59	0.3816	7:55:27	16-Jul-09	21.9
71	29.7	25.7	59	0.4365	7:56:27	16-Jul-09	21.6
72	16.2	25.8	59	0.2326	7:57:27	16-Jul-09	21.4
73	18.6	25.8	59	0.2408	7:58:27	16-Jul-09	21.5
74	18.3	25.9	59	0.254	7:59:27	16-Jul-09	20.7
75	19.4	26	59	0.2335	8:00:27	16-Jul-09	20.9
76	22	26	59	0.391	8:01:27	16-Jul-09	21.2
77	22.7	26.1	59	0.2868	8:02:27	16-Jul-09	21.4
78	15	26.1	59	0.2148	8:03:27	16-Jul-09	21.4
79	30	26.2	59	0.325	8:04:27	16-Jul-09	22.0
80	20.6	26.2	59	0.3799	8:05:27	16-Jul-09	22.0
81	16.9	26.3	59	0.2644	8:06:27	16-Jul-09	22.0
82	16.6	26.4	59	0.2232	8:07:27	16-Jul-09	21.2
83	17.1	26.4	59	0.2293	8:08:27	16-Jul-09	21.1
84	17.4	26.5	59	0.2452	8:09:27	16-Jul-09	20.6
85	16.1	26.5	59	0.228	8:10:27	16-Jul-09	20.4
86	16.4	26.6	58	0.2064	8:11:27	16-Jul-09	19.6
87	16	26.6	58	0.2259	8:12:27	16-Jul-09	18.7
88	16.9	26.7	58	0.2283	8:13:27	16-Jul-09	18.8
89	16.5	26.7	58	0.2173	8:14:27	16-Jul-09	18.6
90	16.2	26.8	58	0.2154	8:15:27	16-Jul-09	18.5
91	17.2	26.9	58	0.2352	8:16:27	16-Jul-09	18.4
92	16.7	26.9	58	0.2293	8:17:27	16-Jul-09	18.0
93	17.3	27	58	0.2423	8:18:27	16-Jul-09	17.7
94	17.4	27.1	58	0.2643	8:19:27	16-Jul-09	17.8
95	18	27.1	58	0.2477	8:20:27	16-Jul-09	17.1
96	18	27.2	58	0.2763	8:21:27	16-Jul-09	16.9
97	17.2	27.2	58	0.2501	8:22:27	16-Jul-09	16.9
98	16.8	27.3	58	0.2226	8:23:27	16-Jul-09	17.0
99	16	27.3	58	0.2087	8:24:27	16-Jul-09	16.9
100	16.5	27.4	58	0.2142	8:25:27	16-Jul-09	16.8
101	16.6	27.5	57	0.2236	8:26:27	16-Jul-09	16.9
102	16.9	27.5	57	0.2387	8:27:27	16-Jul-09	16.9
103	16.4	27.6	57	0.2258	8:28:27	16-Jul-09	16.9
104	16.6	27.7	57	0.2295	8:29:27	16-Jul-09	16.9
105	17.5	27.7	57	0.2548	8:30:27	16-Jul-09	17.0
106	17.7	27.8	57	0.2451	8:31:27	16-Jul-09	17.1
107	20.4	27.9	57	0.2495	8:32:27	16-Jul-09	17.3
108	16.6	27.9	57	0.2232	8:33:27	16-Jul-09	17.2
109	17.2	28	56	0.241	8:34:27	16-Jul-09	17.2
110	16.8	28	56	0.2346	8:35:27	16-Jul-09	17.2
111	17.9	28.1	56	0.244	8:36:27	16-Jul-09	17.2
112	16.4	28.2	56	0.236	8:37:27	16-Jul-09	17.1
113	16.5	28.2	56	0.2239	8:38:27	16-Jul-09	17.1
114	16	28.3	56	0.2137	8:39:27	16-Jul-09	17.0
115	16.8	28.3	56	0.2305	8:40:27	16-Jul-09	17.1
116	16.3	28.4	55	0.2291	8:41:27	16-Jul-09	17.0
117	19.4	28.5	55	0.2785	8:42:27	16-Jul-09	17.2
118	34.4	28.5	55	0.3347	8:43:27	16-Jul-09	18.3
119	50.2	28.6	55	0.5788	8:44:27	16-Jul-09	20.4
120	35.8	28.6	55	0.3865	8:45:27	16-Jul-09	21.6
121	28	28.7	55	0.3367	8:46:27	16-Jul-09	22.3
122	24.4	28.7	55	0.3135	8:47:27	16-Jul-09	22.7
123	22.1	28.8	55	0.2998	8:48:27	16-Jul-09	22.8
124	23.3	28.9	54	0.2793	8:49:27	16-Jul-09	23.2
125	22.2	29	54	0.3087	8:50:27	16-Jul-09	23.5
126	25.9	29	54	0.2695	8:51:27	16-Jul-09	24.1
127	20.7	29.1	54	0.2895	8:52:27	16-Jul-09	24.3
128	38.2	29.1	54	0.4808	8:53:27	16-Jul-09	25.6
129	19.2	29.2	54	0.3012	8:54:27	16-Jul-09	25.8
130	24.4	29.2	54	0.2878	8:55:27	16-Jul-09	26.3
131	29.8	29.3	54	0.4425	8:56:27	16-Jul-09	27.1
132	17.2	29.4	54	0.2636	8:57:27	16-Jul-09	27.2
133	16.4	29.4	54	0.2306	8:58:27	16-Jul-09	27.0
134	17.9	29.5	53	0.2355	8:59:27	16-Jul-09	26.0
135	18.1	29.6	53	0.2584	9:00:27	16-Jul-09	24.0
136	16.3	29.6	53	0.2281	9:01:27	16-Jul-09	22.8
137	17.2	29.7	53	0.2209	9:02:27	16-Jul-09	22.1
138	16.7	29.7	53	0.2691	9:03:27	16-Jul-09	21.6
139	16.7	29.8	53	0.2352	9:04:27	16-Jul-09	21.3
140	16	29.8	53	0.2202	9:05:27	16-Jul-09	20.8
141	16.3	29.9	53	0.2431	9:06:27	16-Jul-09	20.4
142	15.4	30	53	0.2134	9:07:27	16-Jul-09	19.8
143	16.5	30.1	52	0.2172	9:08:27	16-Jul-09	19.5
144	18.7	30.1	52	0.2727	9:09:27	16-Jul-09	18.3
145	17.5	30.2	52	0.2707	9:10:27	16-Jul-09	18.2
146	39.8	30.2	52	0.4797	9:11:27	16-Jul-09	19.2
147	20.9	30.3	52	0.3299	9:12:27	16-Jul-09	18.6
148	19.6	30.3	51	0.3116	9:13:27	16-Jul-09	18.8
149	26.7	30.4	51	0.3363	9:14:27	16-Jul-09	19.4
150	19.7	30.5	51	0.3554	9:15:27	16-Jul-09	19.5
151	20.1	30.5	51	0.2707	9:16:27	16-Jul-09	19.6

Appendix I
Ambient Air Dust Monitoring Results - SEAD-12 Removal Action

Seneca Army Depot Activity
Romulus, NY

DataRam 4 Dust Monitor, Serial Number D454

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
155	26.5	31.3	55	0.1879	9:17:28	16-Jul-09	40.4
156	25.6	31.3	54	0.1576	9:18:28	16-Jul-09	33.3
157	27.3	31.4	54	0.1738	9:19:28	16-Jul-09	33.4
158	26.5	31.4	54	0.1761	9:20:28	16-Jul-09	33.3
159	27.6	31.5	54	0.1807	9:21:28	16-Jul-09	33.1
160	27	31.5	54	0.1725	9:22:28	16-Jul-09	33.1
161	28	31.5	54	0.1753	9:23:28	16-Jul-09	32.9
162	26.1	31.6	54	0.1725	9:24:28	16-Jul-09	32.8
163	28.7	31.6	54	0.1674	9:25:28	16-Jul-09	33.0
164	26.8	31.6	54	0.1775	9:26:28	16-Jul-09	32.6
165	26.6	31.7	54	0.1609	9:27:28	16-Jul-09	32.6
166	25.2	31.7	54	0.1606	9:28:28	16-Jul-09	32.6
167	48.2	31.7	54	0.2097	9:29:28	16-Jul-09	34.0
168	27.1	31.7	54	0.1849	9:30:28	16-Jul-09	32.1
169	47.4	31.8	54	0.2286	9:31:28	16-Jul-09	32.8
170	25.6	31.8	54	0.1694	9:32:28	16-Jul-09	29.4
171	26.3	31.9	54	0.1693	9:33:28	16-Jul-09	29.4
172	28	31.9	54	0.1782	9:34:28	16-Jul-09	29.5
173	40.5	31.9	54	0.2314	9:35:28	16-Jul-09	30.4
174	27	32	54	0.1735	9:36:28	16-Jul-09	30.4
175	25.5	32	54	0.1572	9:37:28	16-Jul-09	30.3
176	26.4	32.1	54	0.1716	9:38:28	16-Jul-09	30.2
177	26.2	32.1	54	0.1663	9:39:28	16-Jul-09	30.1
178	26.7	32.1	54	0.1547	9:40:28	16-Jul-09	30.1
179	25.7	32.2	54	0.1607	9:41:28	16-Jul-09	30.0
180	25.7	32.2	53	0.1551	9:42:28	16-Jul-09	29.9
181	25.2	32.3	53	0.1653	9:43:28	16-Jul-09	29.8
182	25.2	32.3	53	0.1584	9:44:28	16-Jul-09	29.8
183	25.6	32.3	53	0.1601	9:45:28	16-Jul-09	28.4
184	25	32.4	53	0.1528	9:46:28	16-Jul-09	28.3
185	26.3	32.5	53	0.1808	9:47:28	16-Jul-09	26.9
186	25.4	32.5	53	0.1629	9:48:28	16-Jul-09	26.9
187	26.2	32.5	53	0.1724	9:49:28	16-Jul-09	26.9
188	24.6	32.6	53	0.1541	9:50:28	16-Jul-09	26.7
189	25.4	32.6	53	0.1603	9:51:28	16-Jul-09	25.8
190	125.4	32.6	53	0.1943	9:52:28	16-Jul-09	31.9
191	37.9	32.7	53	0.256	9:53:28	16-Jul-09	32.7
192	30.1	32.7	53	0.1928	9:54:28	16-Jul-09	32.9
193	25.6	32.8	52	0.1831	9:55:28	16-Jul-09	32.9
194	25.6	32.8	52	0.1712	9:56:28	16-Jul-09	32.8
195	25.2	32.8	52	0.1592	9:57:28	16-Jul-09	32.8
196	24.4	32.9	52	0.1513	9:58:28	16-Jul-09	32.7
197	25.7	32.9	52	0.1705	9:59:28	16-Jul-09	32.7
198	24.7	33	52	0.1772	10:00:28	16-Jul-09	32.7
199	32.7	33	52	0.1893	10:01:28	16-Jul-09	33.1
200	25.9	33.1	52	0.181	10:02:28	16-Jul-09	33.2
201	25.1	33.1	52	0.1655	10:03:28	16-Jul-09	33.1
202	24.4	33.1	51	0.1624	10:04:28	16-Jul-09	33.1
203	24.7	33.2	51	0.1611	10:05:28	16-Jul-09	33.0
204	25.3	33.2	51	0.1755	10:06:28	16-Jul-09	33.0
205	24.6	33.2	51	0.153	10:07:28	16-Jul-09	33.0
206	25.7	33.3	51	0.1735	10:08:28	16-Jul-09	26.7
207	26.1	33.4	51	0.183	10:09:28	16-Jul-09	26.0
208	88.7	33.4	51	0.2338	10:10:28	16-Jul-09	29.7
209	26.7	33.5	51	0.1707	10:11:28	16-Jul-09	29.7
210	65.7	33.5	51	0.2041	10:12:28	16-Jul-09	32.2
211	25	33.6	51	0.1676	10:13:28	16-Jul-09	32.2
212	177.9	33.6	51	0.3624	10:14:28	16-Jul-09	41.8
213	31.8	33.6	52	0.2346	10:15:28	16-Jul-09	42.2
214	84.1	33.7	51	0.3352	10:16:28	16-Jul-09	45.9
215	77.7	33.7	51	0.2257	10:17:28	16-Jul-09	48.7
216	41.1	33.7	51	0.2696	10:18:28	16-Jul-09	49.7
217	46.2	33.8	51	0.2308	10:19:28	16-Jul-09	51.0
218	30.7	33.8	51	0.2026	10:20:28	16-Jul-09	51.4
219	102.1	33.9	51	0.1701	10:21:28	16-Jul-09	56.2
220	38.9	33.9	51	0.2393	10:22:28	16-Jul-09	57.1
221	124.9	34	51	0.2687	10:23:28	16-Jul-09	63.3
222	26.8	34	51	0.1805	10:24:28	16-Jul-09	63.4
223	26.4	34	51	0.167	10:25:28	16-Jul-09	63.4
224	34.8	34	51	0.1887	10:26:28	16-Jul-09	60.1
225	37.8	34.1	51	0.2276	10:27:28	16-Jul-09	60.7
226	34.1	34.1	51	0.1819	10:28:28	16-Jul-09	58.8
227	200.4	34.1	51	0.2416	10:29:28	16-Jul-09	69.7
228	35.7	34.1	50	0.2629	10:30:28	16-Jul-09	60.8
229	29.8	34.1	50	0.1817	10:31:28	16-Jul-09	60.7
230	30.2	34.1	50	0.1896	10:32:28	16-Jul-09	57.4
231	28.6	34.1	50	0.1745	10:33:28	16-Jul-09	54.3
232	31.7	34.2	50	0.1744	10:34:28	16-Jul-09	53.7
233	88.8	34.1	50	0.2067	10:35:28	16-Jul-09	56.4
234	73.3	34.2	50	0.3019	10:36:28	16-Jul-09	59.0
235	48.6	34.1	50	0.2828	10:37:28	16-Jul-09	55.7
236	40	34.2	50	0.2588	10:38:28	16-Jul-09	55.7
237	30.8	34.2	50	0.2019	10:39:28	16-Jul-09	49.9
238	41.5	34.1	50	0.2134	10:40:28	16-Jul-09	50.8
239	28.5	34.1	50	0.1694	10:41:28	16-Jul-09	50.9
240	46	34.2	51	0.2454	10:42:28	16-Jul-09	51.6
241	30.3	34.1	51	0.1944	10:43:28	16-Jul-09	51.1
242	31.4	34.1	51	0.1848	10:44:28	16-Jul-09	51.0
243	31.1	34.2	51	0.1716	10:45:28	16-Jul-09	40.4
244	81.9	34.2	51	0.3075	10:46:28	16-Jul-09	43.3
245	30.5	34.2	51	0.1731	10:47:28	16-Jul-09	43.3
246	60.1	34.2	51	0.2095	10:48:28	16-Jul-09	45.2
247	98.9	34.2	51	0.2004	10:49:28	16-Jul-09	49.6
248	34.2	34.2	51	0.2242	10:50:28	16-Jul-09	49.7
249	32.7	34.2	51	0.1879	10:51:28	16-Jul-09	46.2
250	33.3	34.2	51	0.1712	10:52:28	16-Jul-09	43.7
251	70	34.3	51	0.2944	10:53:28	16-Jul-09	45.1
252	33	34.3	51	0.1921	10:54:28	16-Jul-09	44.6
253	49	34.3	51	0.2293	10:55:28	16-Jul-09	45.8
254	57.4	34.3	51	0.1975	10:56:28	16-Jul-09	46.8

DataRam 4 Dust Monitor, Serial Number D464

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
152	43.4	30.5	51	0.6064	9:17:27	16-Jul-09	21.3
153	17.4	30.6	51	0.3298	9:18:27	16-Jul-09	21.3
154	27.1	30.6	51	0.3444	9:19:27	16-Jul-09	22.0
155	17.6	30.7	51	0.3125	9:20:27	16-Jul-09	22.0
156	15.4	30.7	51	0.2039	9:21:27	16-Jul-09	22.0
157	50	30.7	51	0.6355	9:22:27	16-Jul-09	24.1
158	16.5	30.8	50	0.2798	9:23:27	16-Jul-09	24.2
159	17.1	30.8	50	0.238	9:24:27	16-Jul-09	24.2
160	16.3	30.9	50	0.2396	9:25:27	16-Jul-09	24.1
161	89.1	30.9	50	0.5808	9:26:27	16-Jul-09	28.5
162	16.2	30.9	50	0.2795	9:27:27	16-Jul-09	27.1
163	31	30.9	50	0.3246	9:28:27	16-Jul-09	27.7
164	18.4	31	50	0.2742	9:29:27	16-Jul-09	27.6
165	18.9	31	50	0.2648	9:30:27	16-Jul-09	27.1
166	23.2	31	50	0.2819	9:31:27	16-Jul-09	27.4
167	19.3	31.1	50	0.275	9:32:27	16-Jul-09	27.3
168	17.3	31.1	50	0.2425	9:33:27	16-Jul-09	25.7
169	42.5	31.1	50	0.4532	9:34:27	16-Jul-09	27.2
170	110.8	31.2	50	2.1862	9:35:27	16-Jul-09	32.5
171	22.8	31.2	50	0.4418	9:36:27	16-Jul-09	32.8
172	20.8	31.2	50	0.2545	9:37:27	16-Jul-09	33.1
173	32.8	31.3	50	0.4168	9:38:27	16-Jul-09	32.1
174	23.4	31.3	50	0.3804	9:39:27	16-Jul-09	32.5
175	20.8	31.4	50	0.3058	9:40:27	16-Jul-09	32.7
176	17.5	31.4	50	0.2395	9:41:27	16-Jul-09	32.8
177	27.2	31.4	49	0.3165	9:42:27	16-Jul-09	28.9
178	19.8	31.5	49	0.3345	9:43:27	16-Jul-09	29.2
179	16.3	31.5	49	0.2323	9:44:27	16-Jul-09	28.2
180	16	31.6	49	0.2029	9:45:27	16-Jul-09	28.1
181	45.5	31.6	49	0.3536	9:46:27	16-Jul-09	29.8
182	34.6	31.7	49	0.6349	9:47:27	16-Jul-09	30.5
183	20.5	31.7	49	0.2968	9:48:27	16-Jul-09	30.5
184	19	31.7	49	0.2749	9:49:27	16-Jul-09	30.6
185	76.1	31.8	49	0.6899	9:50:27	16-Jul-09	32.7
186	16.3	31.8	49	0.2551	9:51:27	16-Jul-09	26.8
187	36	31.9	49	0.333	9:52:27	16-Jul-09	27.7
188	20.2	31.9	48	0.3956	9:53:27	16-Jul-09	27.6
189	22.8	32	48	0.2961	9:54:27	16-Jul-09	27.0
190	17	32	48	0.2325	9:55:27	16-Jul-09	26.6
191	62.2	32	48	0.459	9:56:27	16-Jul-09	29.2
192	22.2	32.1	48	0.3983	9:57:27	16-Jul-09	29.5
193	77.1	32.1	48	0.343	9:58:27	16-Jul-09	32.6
194	26.4	32.2	48	0.5413	9:59:27	16-Jul-09	33.0
195	16.8	32.2	48	0.2445	10:00:27	16-Jul-09	33.0
196	59.5	32.2	48	0.5419	10:01:27	16-Jul-09	35.8
197	64.7	32.2	48	0.8594	10:02:27	16-Jul-09	37.0
198	15.8	32.3	48	0.2159	10:03:27	16-Jul-09	35.8
199	33.8	32.3	48	0.3321	10:04:27	16-Jul-09	36.6
200	24.7	32.4	48	0.4879	10:05:27	16-Jul-09	37.0
201	71.1	32.4	48	0.4667	10:06:27	16-Jul-09	36.7
202	32.8	32.4	48	0.4496	10:07:27	16-Jul-09	37.7
203	17.7	32.5	48	0.2624	10:08:27	16-Jul-09	36.6
204	56.8	32.5	47	0.5491	10:09:27	16-Jul-09	38.8
205	24	32.5	48	0.4622	10:10:27	16-Jul-09	38.9
206	23	32.5	48	0.3139	10:11:27	16-Jul-09	39.3
207	16.5	32.6	47	0.2557	10:12:27	16-Jul-09	36.4
208	20.6	32.6	48	0.2668	10:13:27	16-Jul-09	36.3
209	18.4	32.6	47	0.2828	10:14:27	16-Jul-09	32.7
210	16.1	32.7	47	0.2271	10:15:27	16-Jul-09	32.0
211	15.7	32.7	48	0.2138	10:16:27	16-Jul-09	32.0
212	15.2	32.7	47	0.2036	10:17:27	16-Jul-09	29.2
213	15.9	32.8	47	0.2099	10:18:27	16-Jul-09	26.1
214	16.2	32.8	47	0.2233	10:19:27	16-Jul-09	26.2
215	16.3	32.9	47	0.232	10:20:27	16-Jul-09	25.1
216	15.5	32.9	47	0.2105	10:21:27	16-Jul-09	24.5
217	30.6	32.9	47	0.296	10:22:27	16-Jul-09	22.0
218	17.4	32.9	47	0.2505	10:23:27	16-Jul-09	21.0
219	21.3	33	47	0.2533	10:24:27	16-Jul-09	21.2
220	25.9	33	47	0.4396	10:25:27	16-Jul-09	19.3
221	18.9	33	47	0.3079	10:26:27	16-Jul-09	19.0
222	18.1	33	47	0.2179	10:27:27	16-Jul-09	18.7
223	17.9	33	47	0.2761	10:28:27	16-Jul-09	18.8
224	17.9	33	47	0.2291	10:29:27	16-Jul-09	18.6
225	17.8	33.1	47	0.2423	10:30:27	16-Jul-09	18.5
226	17.4	33.1	47	0.2116	10:31:27	16-Jul-09	18.6
227	17.6	33.1	47	0.2353	10:32:27	16-Jul-09	18.7
228	17	33.1	47	0.2214	10:33:27	16-Jul-09	18.9
229	17.7	33.1	47	0.2239	10:34:27	16-Jul-09	19.0
230	17.4	33.1	46	0.2351	10:35:27	16-Jul-09	19.0
231	18.8	33.1	46	0.2455	10:36:27	16-Jul-09	19.2
232	18.1	33.1	47	0.222	10:37:27	16-Jul-09	19.4
233	18.3	33.1	47	0.2271	10:38:27	16-Jul-09	18.6
234	17.5	33.1	47	0.221	10:39:27	16-Jul-09	18.6
235	17.5	33.1	47	0.2281	10:40:27	16-Jul-09	18.4
236	18	33.1	47	0.2319	10:41:27	16-Jul-09	17.9
237	19.6	33.1	47	0.2536	10:42:27	16-Jul-09	17.9
238	19.2	33.1	47	0.2524	10:43:27	16-Jul-09	18.0
239	18.7	33	47	0.2211	10:44:27	16-Jul-09	18.0
240	20.2	33.1	47	0.2497	10:45:27	16-Jul-09	18.2
241	19.6	33.1	47	0.2281	10:46:27	16-Jul-09	18.3
242	19.7	33.1	47	0.227	10:47:27	16-Jul-09	18.4
243	20.4	33.1	47	0.2547	10:48:27	16-Jul-09	18.6
244	19.7	33.1	47	0.2415	10:49:27	16-Jul-09	18.8
245	22	33.1	47	0.2649	10:50:27	16-Jul-09	19.0
246	20.7	33.1	47	0.2416	10:51:27	16-Jul-09	19.3
247	38.7	33.2	47	0.3675	10:52:27	16-Jul-09	20.5
248	20.8	33.2	47	0.297	10:53:27	16-Jul-09	20.7
249	20.6	33.2	47	0.2461	10:54:27	16-Jul-09	20.8
250	21.4	33.2	47	0.2619	10:55:27	16-Jul-09	21.1
251	20.6	33.3	47	0.2527	10:56:27	16-Jul-09	21.2

Appendix I
Ambient Air Dust Monitoring Results - SEAD-12 Removal Action

Seneca Army Depot Activity
Romulus, NY

DataRam 4 Dust Monitor, Serial Number D454

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
255	78.3	34.4	50	0.3211	10:57:28	16-Jul-09	49.9
256	37.7	34.4	50	0.24	10:58:28	16-Jul-09	49.4
257	33.7	34.4	50	0.1772	10:59:28	16-Jul-09	49.6
258	32.2	34.5	50	0.1809	11:00:28	16-Jul-09	49.6
259	37.9	34.5	50	0.1981	11:01:28	16-Jul-09	50.1
260	35.8	34.5	50	0.1795	11:02:28	16-Jul-09	47.2
261	31.7	34.5	50	0.1739	11:03:28	16-Jul-09	47.2
262	30.4	34.5	50	0.1616	11:04:28	16-Jul-09	45.4
263	30.3	34.5	50	0.1724	11:05:28	16-Jul-09	41.1
264	33.2	34.5	50	0.1809	11:06:28	16-Jul-09	41.0
265	31.4	34.6	50	0.1959	11:07:28	16-Jul-09	41.0
266	30.9	34.6	50	0.1958	11:08:28	16-Jul-09	40.8
267	32.8	34.7	50	0.1995	11:09:28	16-Jul-09	38.5
268	34.8	34.6	49	0.1841	11:10:28	16-Jul-09	38.6
269	32.1	34.6	49	0.1814	11:11:28	16-Jul-09	37.5
270	31.9	34.7	49	0.1852	11:12:28	16-Jul-09	35.9
271	33.7	34.7	49	0.1939	11:13:28	16-Jul-09	33.2
272	30.8	34.7	49	0.1717	11:14:28	16-Jul-09	32.7
273	34.7	34.7	49	0.1789	11:15:28	16-Jul-09	32.8
274	33.6	34.8	49	0.179	11:16:28	16-Jul-09	32.9
275	38.6	34.8	49	0.193	11:17:28	16-Jul-09	32.9
276	33.3	34.8	49	0.1817	11:18:28	16-Jul-09	32.8
277	29.7	34.8	49	0.1628	11:19:28	16-Jul-09	32.6
278	33.4	34.9	49	0.1787	11:20:28	16-Jul-09	32.8
279	34	34.9	49	0.1816	11:21:28	16-Jul-09	33.1
280	36.1	35	48	0.192	11:22:28	16-Jul-09	33.2
281	33.5	35	48	0.1807	11:23:28	16-Jul-09	33.4
282	41.5	35	48	0.2047	11:24:28	16-Jul-09	34.0
283	32.7	35	48	0.1662	11:25:28	16-Jul-09	34.0
284	34	35.1	48	0.1767	11:26:28	16-Jul-09	34.0
285	37	35.1	48	0.1989	11:27:28	16-Jul-09	34.3
286	38.3	35.1	48	0.1881	11:28:28	16-Jul-09	34.7
287	32.9	35.1	48	0.1756	11:29:28	16-Jul-09	34.6
288	47	35.1	48	0.2167	11:30:28	16-Jul-09	35.6
289	31.8	35.1	48	0.174	11:31:28	16-Jul-09	35.5
290	35.2	35.1	48	0.1848	11:32:28	16-Jul-09	35.6
291	35.7	35.2	47	0.1751	11:33:28	16-Jul-09	35.4
292	33.8	35.2	47	0.1676	11:34:28	16-Jul-09	35.4
293	41	35.2	47	0.1925	11:35:28	16-Jul-09	36.1
294	36.6	35.2	47	0.1792	11:36:28	16-Jul-09	36.3
295	60.6	35.2	47	0.2481	11:37:28	16-Jul-09	38.0
296	47.9	35.2	47	0.2417	11:38:28	16-Jul-09	38.7
297	41.3	35.2	48	0.2064	11:39:28	16-Jul-09	39.2
298	31.4	35.1	48	0.1749	11:40:28	16-Jul-09	38.6
299	33	35.2	47	0.174	11:41:28	16-Jul-09	38.6
300	30.7	35.2	47	0.1626	11:42:28	16-Jul-09	38.4
301	31.1	35.2	47	0.1681	11:43:28	16-Jul-09	38.0
302	38.3	35.2	47	0.183	11:44:28	16-Jul-09	38.0
303	44.7	35.2	47	0.1899	11:45:28	16-Jul-09	38.8
304	31.6	35.2	47	0.1683	11:46:28	16-Jul-09	37.8
305	52.9	35.2	47	0.1959	11:47:28	16-Jul-09	39.1
306	36.8	35.2	47	0.1899	11:48:28	16-Jul-09	39.2
307	29.9	35.3	47	0.1702	11:49:28	16-Jul-09	38.9
308	37.7	35.3	47	0.1912	11:50:28	16-Jul-09	39.1
309	126.7	35.3	47	0.3432	11:51:28	16-Jul-09	44.5
310	91.8	35.3	47	0.4302	11:52:28	16-Jul-09	47.9
311	88.6	35.3	46	0.2884	11:53:28	16-Jul-09	49.7
312	76.7	35.3	46	0.4275	11:54:28	16-Jul-09	51.5
313	62.5	35.5	46	0.3459	11:55:28	16-Jul-09	52.8
314	83.7	35.4	46	0.3182	11:56:28	16-Jul-09	56.0
315	68	35.4	47	0.2657	11:57:28	16-Jul-09	58.2
316	38.9	35.4	47	0.2369	11:58:28	16-Jul-09	58.7
317	33.4	35.4	46	0.1708	11:59:28	16-Jul-09	58.9
318	40.4	35.4	46	0.172	12:00:28	16-Jul-09	59.0
319	170.1	35.4	47	0.3308	12:01:28	16-Jul-09	66.9
320	73	35.4	47	0.3706	12:02:28	16-Jul-09	69.4
321	77.6	35.5	47	0.3178	12:03:28	16-Jul-09	71.0
322	46.6	35.5	46	0.2819	12:04:28	16-Jul-09	71.6
323	166.1	35.5	46	0.2827	12:05:28	16-Jul-09	80.1
324	163.5	35.5	46	0.3669	12:06:28	16-Jul-09	88.0
325	68.2	35.6	45	0.4299	12:07:28	16-Jul-09	84.3
326	43.8	35.6	45	0.2139	12:08:28	16-Jul-09	81.3
327	62.9	35.6	45	0.2864	12:09:28	16-Jul-09	79.7
328	34.3	35.7	45	0.2277	12:10:28	16-Jul-09	77.1
329	30.3	35.7	45	0.1777	12:11:28	16-Jul-09	75.1
330	33.9	35.9	45	0.1844	12:12:28	16-Jul-09	71.9
331	29.4	35.8	45	0.1778	12:13:28	16-Jul-09	69.5
332	33.6	35.8	45	0.183	12:14:28	16-Jul-09	69.2
333	30.9	35.8	45	0.1892	12:15:28	16-Jul-09	69.0
334	32.2	35.9	45	0.1726	12:16:28	16-Jul-09	68.5
335	29.3	36.1	45	0.1642	12:17:28	16-Jul-09	59.7
336	28.5	36	45	0.1708	12:18:28	16-Jul-09	56.9
337	28.9	36.1	45	0.1658	12:19:28	16-Jul-09	53.9
338	30.1	36.1	44	0.1792	12:20:28	16-Jul-09	52.9
339	32.9	36.1	45	0.192	12:21:28	16-Jul-09	44.5
340	29.8	36.4	45	0.1815	12:22:28	16-Jul-09	36.2
341	27.9	36.2	45	0.1662	12:23:28	16-Jul-09	33.7
342	28.4	36.4	44	0.1607	12:24:28	16-Jul-09	32.7
343	31.9	36.2	44	0.1735	12:25:28	16-Jul-09	30.8
344	28.5	36.6	45	0.1668	12:26:28	16-Jul-09	30.4
345	30.7	36.5	44	0.1838	12:27:28	16-Jul-09	30.4
346	34.6	36.9	45	0.2005	12:28:28	16-Jul-09	30.5
347	29.1	37.1	45	0.1649	12:29:28	16-Jul-09	30.5
348	28.6	37.3	45	0.177	12:30:28	16-Jul-09	30.1
349	28.8	37.4	45	0.1778	12:31:28	16-Jul-09	30.0
350	29.7	37.8	45	0.1772	12:32:28	16-Jul-09	29.9
351	107.3	38.4	45	0.2286	12:33:28	16-Jul-09	34.7
352	259	38.1	45	0.7218	12:34:28	16-Jul-09	49.1
353	37.8	37.4	44	0.2868	12:35:28	16-Jul-09	49.7
354	60.6	37.4	43	0.2712	12:36:28	16-Jul-09	51.6

DataRam 4 Dust Monitor, Serial Number D464

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
252	20.5	33.3	47	0.2517	10:57:27	16-Jul-09	21.4
253	20.9	33.4	47	0.2465	10:58:27	16-Jul-09	21.5
254	19.8	33.4	47	0.242	10:59:27	16-Jul-09	21.5
255	52.9	33.4	47	0.4016	11:00:27	16-Jul-09	23.7
256	29.4	33.5	47	0.574	11:01:27	16-Jul-09	24.2
257	19.3	33.5	46	0.2499	11:02:27	16-Jul-09	24.2
258	19.6	33.5	46	0.246	11:03:27	16-Jul-09	24.2
259	209.2	33.5	46	0.8859	11:04:27	16-Jul-09	36.0
260	35.7	33.6	46	1.0387	11:05:27	16-Jul-09	37.0
261	19.8	33.6	46	0.2721	11:06:27	16-Jul-09	36.9
262	49.5	33.6	46	0.5103	11:07:27	16-Jul-09	38.7
263	36.1	33.7	46	0.4331	11:08:27	16-Jul-09	38.5
264	21.3	33.7	46	0.3528	11:09:27	16-Jul-09	38.5
265	97.3	33.7	46	0.5453	11:10:27	16-Jul-09	43.3
266	23.7	33.7	46	0.3825	11:11:27	16-Jul-09	43.5
267	34.6	33.8	46	0.4228	11:12:27	16-Jul-09	44.4
268	22.2	33.8	46	0.3471	11:13:27	16-Jul-09	44.5
269	20	33.9	46	0.2753	11:14:27	16-Jul-09	44.4
270	50.5	33.9	45	0.482	11:15:27	16-Jul-09	46.3
271	23.2	33.9	45	0.4288	11:16:27	16-Jul-09	44.5
272	20	34	45	0.244	11:17:27	16-Jul-09	43.9
273	29.6	34	45	0.3409	11:18:27	16-Jul-09	44.5
274	64.2	34	45	0.4817	11:19:27	16-Jul-09	47.3
275	20.3	34.1	45	0.2896	11:20:27	16-Jul-09	35.5
276	19.5	34.1	45	0.245	11:21:27	16-Jul-09	34.5
277	75	34.1	45	0.6074	11:22:27	16-Jul-09	37.9
278	23.7	34.1	45	0.5015	11:23:27	16-Jul-09	36.3
279	34	34.2	44	0.2872	11:24:27	16-Jul-09	36.2
280	30.5	34.2	44	0.4934	11:25:27	16-Jul-09	36.8
281	27	34.2	44	0.2956	11:26:27	16-Jul-09	32.4
282	40.3	34.2	44	0.4438	11:27:27	16-Jul-09	33.4
283	129.9	34.3	44	0.6833	11:28:27	16-Jul-09	39.4
284	33.4	34.3	44	0.6732	11:29:27	16-Jul-09	40.1
285	35.5	34.3	44	0.4168	11:30:27	16-Jul-09	41.0
286	104.1	34.4	44	0.6795	11:31:27	16-Jul-09	44.4
287	23.5	34.4	44	0.4312	11:32:27	16-Jul-09	44.4
288	19.3	34.4	44	0.2411	11:33:27	16-Jul-09	44.4
289	38.7	34.4	44	0.4312	11:34:27	16-Jul-09	44.9
290	56.2	34.4	44	0.5747	11:35:27	16-Jul-09	44.4
291	29.2	34.4	44	0.5048	11:36:27	16-Jul-09	45.0
292	20.7	34.5	44	0.2562	11:37:27	16-Jul-09	45.1
293	20.4	34.5	44	0.2441	11:38:27	16-Jul-09	41.7
294	19.4	34.5	44	0.2384	11:39:27	16-Jul-09	41.4
295	57.4	34.5	44	0.5302	11:40:27	16-Jul-09	42.8
296	23.5	34.5	43	0.3639	11:41:27	16-Jul-09	42.4
297	22.4	34.6	44	0.2545	11:42:27	16-Jul-09	42.1
298	21.7	34.6	44	0.2941	11:43:27	16-Jul-09	41.0
299	49.5	34.6	44	0.3742	11:44:27	16-Jul-09	35.9
300	39.8	34.6	43	0.4088	11:45:27	16-Jul-09	36.3
301	38	34.6	43	0.5744	11:46:27	16-Jul-09	36.5
302	20.2	34.7	43	0.2446	11:47:27	16-Jul-09	31.2
303	49.9	34.7	43	0.4621	11:48:27	16-Jul-09	32.9
304	20.6	34.7	43	0.335	11:49:27	16-Jul-09	33.0
305	35.9	34.8	43	0.2979	11:50:27	16-Jul-09	32.8
306	44.6	34.9	43	0.5132	11:51:27	16-Jul-09	32.1
307	22.4	34.8	42	0.3545	11:52:27	16-Jul-09	31.7
308	19.7	34.9	42	0.2585	11:53:27	16-Jul-09	31.6
309	69.7	34.9	42	0.6277	11:54:27	16-Jul-09	34.7
310	27.1	34.9	42	0.4886	11:55:27	16-Jul-09	35.2
311	20.6	35	42	0.2664	11:56:27	16-Jul-09	32.9
312	21.3	35	42	0.277	11:57:27	16-Jul-09	32.7
313	26.5	35	42	0.2976	11:58:27	16-Jul-09	33.0
314	90.8	35	42	0.9989	11:59:27	16-Jul-09	37.3
315	39.2	35.1	42	0.4113	12:00:27	16-Jul-09	36.6
316	20	35.1	42	0.2882	12:01:27	16-Jul-09	35.4
317	19.2	35.1	42	0.2539	12:02:27	16-Jul-09	34.2
318	16.7	35.2	41	0.2178	12:03:27	16-Jul-09	34.0
319	17.2	35.2	41	0.2083	12:04:27	16-Jul-09	32.0
320	17.9	35.2	41	0.2289	12:05:27	16-Jul-09	31.8
321	16.5	35.3	41	0.195	12:06:27	16-Jul-09	30.6
322	16.7	35.3	40	0.209	12:07:27	16-Jul-09	28.8
323	17.2	35.3	40	0.2126	12:08:27	16-Jul-09	28.5
324	16.5	35.4	40	0.2024	12:09:27	16-Jul-09	28.3
325	16.1	35.4	40	0.1986	12:10:27	16-Jul-09	25.0
326	17.4	35.4	40	0.2404	12:11:27	16-Jul-09	24.4
327	16.7	35.5	40	0.1964	12:12:27	16-Jul-09	24.1
328	17.1	35.5	40	0.2168	12:13:27	16-Jul-09	23.9
329	16.4	35.6	40	0.2178	12:14:27	16-Jul-09	23.2
330	17.9	35.6	40	0.2328	12:15:27	16-Jul-09	18.7
331	16.9	35.6	40	0.2083	12:16:27	16-Jul-09	17.3
332	16.6	35.6	40	0.1892	12:17:27	16-Jul-09	17.1
333	17.1	35.7	40	0.2153	12:18:27	16-Jul-09	16.9
334	18.4	35.7	40	0.2413	12:19:27	16-Jul-09	17.0
335	18	35.8	40	0.221	12:20:27	16-Jul-09	17.1
336	17.2	35.8	40	0.2103	12:21:27	16-Jul-09	17.0
337	16.9	35.9	40	0.2085	12:22:27	16-Jul-09	17.1
338	17.3	35.9	40	0.2161	12:23:27	16-Jul-09	17.1
339	16.8	36	40	0.2129	12:24:27	16-Jul-09	17.1
340	18	36	40	0.2353	12:25:27	16-Jul-09	17.2
341	17.6	36.1	39	0.2286	12:26:27	16-Jul-09	17.3
342	17.3	36.1	39	0.2328	12:27:27	16-Jul-09	17.3
343	17.7	36.1	39	0.2252	12:28:27	16-Jul-09	17.3
344	17	36.2	39	0.2171	12:29:27	16-Jul-09	17.3
345	17.1	36.2	39	0.2176	12:30:27	16-Jul-09	17.4
346	15.7	36.2	39	0.1943	12:31:27	16-Jul-09	17.2
347	17.4	36.3	39	0.2167	12:32:27	16-Jul-09	17.3
348	18.5	36.3	39	0.2825	12:33:27	16-Jul-09	17.4
349	15.7	36.3	39	0.2356	12:34:27	16-Jul-09	17.3
350	15	36.4	38	0.2121	12:35:27	16-Jul-09	17.1
351	14.7	36.4	38	0.2118	12:36:27	16-Jul-09	16.9

Appendix I
Ambient Air Dust Monitoring Results - SEAD-12 Removal Action

Seneca Army Depot Activity
Romulus, NY

DataRam 4 Dust Monitor, Serial Number D454

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
355	31.8	37.4	43	0.1931	12:37:28	16-Jul-09	51.5
356	29.3	37.3	43	0.1894	12:38:28	16-Jul-09	51.5
357	31.7	37.3	43	0.1809	12:39:28	16-Jul-09	51.7
358	61.2	37.3	43	0.3536	12:40:28	16-Jul-09	53.8
359	28.2	37.5	42	0.2112	12:41:28	16-Jul-09	53.6
360	115	37.2	42	0.2332	12:42:28	16-Jul-09	59.0
361	41.8	37.3	42	0.3422	12:43:28	16-Jul-09	59.7
362	21.7	37.3	42	0.1581	12:44:28	16-Jul-09	58.9
363	42.1	37.2	42	0.1914	12:45:28	16-Jul-09	59.7
364	31.8	37.2	42	0.248	12:46:28	16-Jul-09	59.9
365	24.5	37.2	42	0.1988	12:47:28	16-Jul-09	59.6
366	28.8	37.3	42	0.2236	12:48:28	16-Jul-09	59.5
367	33.8	37.2	42	0.2331	12:49:28	16-Jul-09	54.9
368	50.6	37.2	43	0.2532	12:50:28	16-Jul-09	41.9
369	25.7	37.1	43	0.1921	12:51:28	16-Jul-09	41.2
370	55	36.9	43	0.2048	12:52:28	16-Jul-09	40.8
371	48	36.9	43	0.2939	12:53:28	16-Jul-09	41.8
372	22.3	36.8	43	0.1875	12:54:28	16-Jul-09	41.4
373	24.7	36.7	43	0.1941	12:55:28	16-Jul-09	41.0
374	28.2	36.8	43	0.21	12:56:28	16-Jul-09	38.9
375	31.9	36.5	43	0.2481	12:57:28	16-Jul-09	39.1
376	40.9	36.5	43	0.2529	12:58:28	16-Jul-09	34.5
377	60.2	36.3	43	0.2637	12:59:28	16-Jul-09	35.6
378	60.9	36.2	43	0.4215	13:00:28	16-Jul-09	38.1
379	38.7	36.3	43	0.2776	13:01:28	16-Jul-09	37.9
380	51.5	36.2	43	0.3346	13:02:28	16-Jul-09	39.1
381	67.7	36.2	43	0.3774	13:03:28	16-Jul-09	41.8
382	32.1	36.1	43	0.3198	13:04:28	16-Jul-09	42.0
383	30.1	36.1	42	0.2988	13:05:28	16-Jul-09	41.8
384	50.7	36.1	43	0.3067	13:06:28	16-Jul-09	41.8
385	50.2	36	42	0.3441	13:07:28	16-Jul-09	43.3
386	139.3	36	42	0.3953	13:08:28	16-Jul-09	48.6
387	46.9	36	42	0.3849	13:09:28	16-Jul-09	48.5
388	37.8	36	42	0.2525	13:10:28	16-Jul-09	49.5
389	27.4	35.9	42	0.2551	13:11:28	16-Jul-09	49.7
390	28.1	35.9	42	0.2411	13:12:28	16-Jul-09	49.7
391	53.3	35.9	42	0.3186	13:13:28	16-Jul-09	51.0
392	35.4	35.8	42	0.2936	13:14:28	16-Jul-09	50.6
393	41.2	35.8	42	0.3133	13:15:28	16-Jul-09	49.5
394	58.6	35.8	41	0.399	13:16:28	16-Jul-09	49.3
395	78.9	35.7	41	0.4419	13:17:28	16-Jul-09	51.8
396	50.7	35.7	41	0.4446	13:18:28	16-Jul-09	51.8
397	53.3	35.8	41	0.3643	13:19:28	16-Jul-09	50.9
398	52.2	35.6	40	0.4012	13:20:28	16-Jul-09	52.1
399	51	35.6	40	0.36	13:21:28	16-Jul-09	53.4
400	21.3	35.6	40	0.2424	13:22:28	16-Jul-09	51.6
401	23.4	35.6	40	0.239	13:23:28	16-Jul-09	49.9
402	280.6	35.5	40	0.3038	13:24:28	16-Jul-09	58.8
403	117.3	35.5	40	0.5959	13:25:28	16-Jul-09	63.2
404	73	35.5	40	0.388	13:26:28	16-Jul-09	65.4
405	56.9	35.5	40	0.341	13:27:28	16-Jul-09	67.2
406	68.5	35.5	39	0.4512	13:28:28	16-Jul-09	69.7
407	45.4	35.5	39	0.4152	13:29:28	16-Jul-09	69.2
408	57.6	35.5	39	0.3957	13:30:28	16-Jul-09	70.6
409	105.5	35.5	39	0.4856	13:31:28	16-Jul-09	74.6
410	65	35.5	39	0.4756	13:32:28	16-Jul-09	75.0
411	31.8	35.5	39	0.3581	13:33:28	16-Jul-09	72.1
412	95.2	35.5	40	0.3741	13:34:28	16-Jul-09	74.9
413	238.1	35.6	40	0.7111	13:35:28	16-Jul-09	86.4
414	59.4	35.5	40	0.5422	13:36:28	16-Jul-09	86.9
415	104.5	35.5	40	0.3973	13:37:28	16-Jul-09	90.2
416	121.1	35.6	40	0.472	13:38:28	16-Jul-09	96.5
417	41.4	35.6	40	0.3643	13:39:28	16-Jul-09	97.6
418	108.2	35.6	40	0.3709	13:40:28	16-Jul-09	86.8
419	158.1	35.6	40	0.65	13:41:28	16-Jul-09	89.4
420	51.5	35.6	40	0.5085	13:42:28	16-Jul-09	88.0
421	93.5	35.6	40	0.3817	13:43:28	16-Jul-09	90.3
422	379.8	35.6	40	0.8113	13:44:28	16-Jul-09	109.8
423	184	35.6	40	0.7555	13:45:28	16-Jul-09	118.4
424	71.6	35.6	40	0.485	13:46:28	16-Jul-09	119.3
425	83.3	35.6	40	0.4195	13:47:28	16-Jul-09	117.9
426	292.6	35.6	40	0.6905	13:48:28	16-Jul-09	132.1
427	78.4	35.6	40	0.6901	13:49:28	16-Jul-09	135.0
428	19.9	35.6	40	0.2545	13:50:28	16-Jul-09	130.3
429	34.6	35.6	39	0.3467	13:51:28	16-Jul-09	117.6
430	49.2	35.7	39	0.4798	13:52:28	16-Jul-09	117.0
431	69.8	35.7	39	0.3219	13:53:28	16-Jul-09	114.8
432	158.6	35.6	39	0.4688	13:54:28	16-Jul-09	117.2
433	52.3	35.6	40	0.3195	13:55:28	16-Jul-09	117.8
434	37.4	35.6	40	0.229	13:56:28	16-Jul-09	113.4
435	113	35.6	40	0.4026	13:57:28	16-Jul-09	110.6
436	143.4	35.6	40	0.6579	13:58:28	16-Jul-09	116.3
437	71.6	35.6	40	0.4082	13:59:28	16-Jul-09	115.0
438	229	35.6	40	0.7527	14:00:28	16-Jul-09	105.5
439	122.4	35.5	40	0.6893	14:01:28	16-Jul-09	101.7
440	117.8	35.6	40	0.5302	14:02:28	16-Jul-09	104.6
441	102.7	35.5	40	0.5464	14:03:28	16-Jul-09	105.8
442	35.7	35.5	40	0.3274	14:04:28	16-Jul-09	89.7
443	172.3	35.5	39	0.6828	14:05:28	16-Jul-09	95.6
444	80.4	35.5	39	0.4698	14:06:28	16-Jul-09	99.4
445	107	35.5	39	0.57	14:07:28	16-Jul-09	103.9
446	25.5	35.5	39	0.3323	14:08:28	16-Jul-09	102.4
447	152.5	35.4	39	0.5388	14:09:28	16-Jul-09	107.6
448	50.6	35.4	40	0.4321	14:10:28	16-Jul-09	100.9
449	115.8	35.4	40	0.3959	14:11:28	16-Jul-09	104.8
450	139.7	35.3	40	0.4786	14:12:28	16-Jul-09	111.2
451	120.6	35.3	40	0.6558	14:13:28	16-Jul-09	111.7
452	25.7	35.3	40	0.305	14:14:28	16-Jul-09	104.3
453	161.3	35.2	40	0.6012	14:15:28	16-Jul-09	109.9
454	377	35.2	40	1.0114	14:16:28	16-Jul-09	119.2

DataRam 4 Dust Monitor, Serial Number D464

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
352	15.8	36.5	38	0.2355	12:37:27	16-Jul-09	16.8
353	14.8	36.5	37	0.2049	12:38:27	16-Jul-09	16.7
354	21.3	36.5	37	0.2984	12:39:27	16-Jul-09	16.9
355	16.5	36.5	37	0.2923	12:40:27	16-Jul-09	16.9
356	13.7	36.5	37	0.203	12:41:27	16-Jul-09	16.6
357	12.8	36.6	37	0.2021	12:42:27	16-Jul-09	16.3
358	12.6	36.6	37	0.1948	12:43:27	16-Jul-09	16.0
359	12.3	36.6	36	0.202	12:44:27	16-Jul-09	15.7
360	14.8	36.6	36	0.194	12:45:27	16-Jul-09	15.5
361	13.6	36.6	36	0.2483	12:46:27	16-Jul-09	15.3
362	14.3	36.6	36	0.2143	12:47:27	16-Jul-09	15.2
363	13.6	36.6	37	0.204	12:48:27	16-Jul-09	15.0
364	13.2	36.6	37	0.2058	12:49:27	16-Jul-09	14.7
365	14.5	36.6	37	0.2272	12:50:27	16-Jul-09	14.6
366	13.7	36.6	37	0.2272	12:51:27	16-Jul-09	14.5
367	13	36.5	37	0.2127	12:52:27	16-Jul-09	14.4
368	12.6	36.5	37	0.2167	12:53:27	16-Jul-09	14.2
369	13.4	36.5	38	0.256	12:54:27	16-Jul-09	14.1
370	11.6	36.5	38	0.2183	12:55:27	16-Jul-09	13.5
371	10.4	36.4	38	0.184	12:56:27	16-Jul-09	13.1
372	9.9	36.4	38	0.1679	12:57:27	16-Jul-09	12.9
373	10	36.4	37	0.169	12:58:27	16-Jul-09	12.7
374	10.3	36.4	37	0.2177	12:59:27	16-Jul-09	12.6
375	9.7	36.4	37	0.2013	13:00:27	16-Jul-09	12.4
376	9.8	36.3	38	0.1931	13:01:27	16-Jul-09	12.1
377	9.6	36.3	37	0.2243	13:02:27	16-Jul-09	11.9
378	8.1	36.3	37	0.2012	13:03:27	16-Jul-09	11.5
379	7.9	36.3	37	0.1951	13:04:27	16-Jul-09	11.1
380	8.3	36.3	37	0.2121	13:05:27	16-Jul-09	10.8
381	25.7	36.3	37	0.3472	13:06:27	16-Jul-09	11.5
382	11.1	36.3	37	0.4181	13:07:27	16-Jul-09	11.3
383	10.9	36.2	37	0.2176	13:08:27	16-Jul-09	11.2
384	8.7	36.2	36	0.2427	13:09:27	16-Jul-09	11.0
385	8	36.2	36	0.2175	13:10:27	16-Jul-09	10.6
386	7.5	36.2	36	0.2128	13:11:27	16-Jul-09	10.4
387	52.5	36.2	36	0.2229	13:12:27	16-Jul-09	13.0
388	16.9	36.2	36	0.4247	13:13:27	16-Jul-09	13.4
389	7.9	36.2	36	0.2199	13:14:27	16-Jul-09	13.3
390	28.5	36.2	36	0.381	13:15:27	16-Jul-09	14.4
391	6.4	36.2	35	0.2862	13:16:27	16-Jul-09	14.2
392	54.3	36.2	35	0.3348	13:17:27	16-Jul-09	17.0
393	6.4	36.1	35	0.2711	13:18:27	16-Jul-09	16.8
394	9.6	36.1	35	0.3067	13:19:27	16-Jul-09	16.9
395	13.6	36.1	34	0.2963	13:20:27	16-Jul-09	17.3
396	72.6	36.1	34	0.6744	13:21:27	16-Jul-09	21.3
397	6.7	36	34	0.2833	13:22:27	16-Jul-09	20.1
398	29.3	36	34	0.2326	13:23:27	16-Jul-09	21.2
399	72.3	36	34	1.5075	13:24:27	16-Jul-09	25.1
400	22	36	34	0.3048	13:25:27	16-Jul-09	25.9
401	15.2	36	34	0.417	13:26:27	16-Jul-09	26.4
402	17.1	35.9	34	0.5587	13:27:27	16-Jul-09	27.0
403	53.3	35.9	34	0.5336	13:28:27	16-Jul-09	27.0
404	7.5	35.9	34	0.3482	13:29:27	16-Jul-09	26.4
405	87.3	35.9	34	0.5786	13:30:27	16-Jul-09	31.4
406	104	35.9	34	0.907	13:31:27	16-Jul-09	36.1
407	8.3	35.9	34	0.3767	13:32:27	16-Jul-09	36.2
408	34.3	35.8	34	0.3329	13:33:27	16-Jul-09	35.0
409	7.7	35.8	34	0.345	13:34:27	16-Jul-09	35.1
410	49.2	35.9	34	0.7089	13:35:27	16-Jul-09	37.5
411	9	35.8	34	0.2898	13:36:27	16-Jul-09	37.2
412	204.5	35.8	34	0.9235	13:37:27	16-Jul-09	45.5
413	14.1	35.8	34	0.6097	13:38:27	16-Jul-09	45.9
414	23.2	35.8	34	0.2364	13:39:27	16-Jul-09	45.6
415	27.4	35.8	34	0.4611	13:40:27	16-Jul-09	42.8
416	103	35.8	34	0.5661	13:41:27	16-Jul-09	47.8
417	8.8	35.8	34	0.3071	13:42:27	16-Jul-09	47.4
418	60	35.7	35	0.6399	13:43:27	16-Jul-09	50.1
419	43.2	35.7	35	0.7563	13:44:27	16-Jul-09	49.5
420	13	35.7	35	0.567	13:45:27	16-Jul-09	49.8
421	8.4	35.7	34	0.2498	13:46:27	16-Jul-09	44.9
422	21	35.7	34	0.3349	13:47:27	16-Jul-09	39.7
423	56.3	35.7	34	0.3219	13:48:27	16-Jul-09	42.7
424	9.1	35.7	34	0.3533	13:49:27	16-Jul-09	41.1
425	6.9	35.7	34	0.2369	13:50:27	16-Jul-09	41.1
426	7.5	35.7	34	0.256	13:51:27	16-Jul-09	38.5
427	43.9	35.6	34	0.6051	13:52:27	16-Jul-09	40.6
428	37	35.6	34	0.7946	13:53:27	16-Jul-09	30.2
429	127.8	35.6	34	1.0632	13:54:27	16-Jul-09	37.3
430	8	35.6	34	0.3401	13:55:27	16-Jul-09	36.3
431	8.1	35.6	34	0.2297	13:56:27	16-Jul-09	35.1
432	80.6	35.6	34	0.6394	13:57:27	16-Jul-09	33.7
433	9.1	35.6	34	0.5115	13:58:27	16-Jul-09	33.7
434	37.6	35.6	34	0.4571	13:59:27	16-Jul-09	32.3
435	64.3	35.5	34	0.8639	14:00:27	16-Jul-09	33.7
436	42.4	35.5	34	0.7137	14:01:27	16-Jul-09	35.5
437	63.4	35.5	34	0.988	14:02:27	16-Jul-09	38.9
438	7.2	35.5	34	0.2622	14:03:27	16-Jul-09	38.1
439	138.2	35.5	34	0.7888	14:04:27	16-Jul-09	43.2
440	6.9	35.4	34	0.3275	14:05:27	16-Jul-09	43.1
441	95.8	35.4	34	0.7998	14:06:27	16-Jul-09	48.6
442	6.1	35.4	34	0.2853	14:07:27	16-Jul-09	48.5
443	7.9	35.4	34	0.2617	14:08:27	16-Jul-09	46.3
444	48.1	35.3	34	0.2586	14:09:27	16-Jul-09	47.0
445	17.9	35.3	34	0.551	14:10:27	16-Jul-09	40.1
446	55.4	35.3	34	0.3333	14:11:27	16-Jul-09	43.1
447	82.3	35.3	34	0.8133	14:12:27	16-Jul-09	47.7
448	14.2	35.2	34	0.6089	14:13:27	16-Jul-09	43.6
449	59	35.2	35	0.7223	14:14:27	16-Jul-09	46.7
450	37.6	35.2	35	0.769	14:15:27	16-Jul-09	46.7
451	139.9	35.2	35	1.6972	14:16:27	16-Jul-09	51.4

Appendix I
Ambient Air Dust Monitoring Results - SEAD-12 Removal Action

Seneca Army Depot Activity
Romulus, NY

DataRam 4 Dust Monitor, Serial Number D454

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
455	72.3	35.2	40	0.7263	14:17:28	16-Jul-09	116.1
456	85.3	35.2	40	0.4511	14:18:28	16-Jul-09	114.0
457	250.1	35.2	40	0.746	14:19:28	16-Jul-09	123.2
458	143.7	35.1	40	0.7019	14:20:28	16-Jul-09	130.0
459	27.2	35.1	40	0.3948	14:21:28	16-Jul-09	120.9
460	36.9	35.1	40	0.3989	14:22:28	16-Jul-09	118.2
461	123	35.1	40	0.4711	14:23:28	16-Jul-09	119.2
462	115.8	35	40	0.5912	14:24:28	16-Jul-09	124.8
463	41.3	35	40	0.4623	14:25:28	16-Jul-09	117.9
464	44	35	39	0.3563	14:26:28	16-Jul-09	117.5
465	206	35	39	0.672	14:27:28	16-Jul-09	123.1
466	39.6	34.9	40	0.6732	14:28:28	16-Jul-09	116.9
467	21	34.9	39	0.3135	14:29:28	16-Jul-09	110.6
468	104.4	34.8	40	0.3921	14:30:28	16-Jul-09	115.6
469	365.1	34.8	40	0.8549	14:31:28	16-Jul-09	128.3
470	26.4	34.8	40	0.3702	14:32:28	16-Jul-09	106.4
471	158.9	34.8	40	0.4517	14:33:28	16-Jul-09	111.8
472	163.7	34.7	40	0.6843	14:34:28	16-Jul-09	116.7
473	30.4	34.7	40	0.3752	14:35:28	16-Jul-09	103.0
474	181.6	34.7	40	0.335	14:36:28	16-Jul-09	105.3
475	333.7	34.7	40	0.6953	14:37:28	16-Jul-09	124.5
476	25.5	34.7	40	0.4144	14:38:28	16-Jul-09	123.8
477	86	34.7	40	0.3876	14:39:28	16-Jul-09	121.5
478	192.6	34.7	41	0.5889	14:40:28	16-Jul-09	126.3
479	41.4	34.7	40	0.3742	14:41:28	16-Jul-09	126.3
480	113.2	34.7	40	0.3207	14:42:28	16-Jul-09	130.6
481	176.3	34.7	40	0.5518	14:43:28	16-Jul-09	128.7
482	31.3	34.7	40	0.3061	14:44:28	16-Jul-09	128.2
483	51.8	34.7	40	0.3901	14:45:28	16-Jul-09	130.1
484	336.1	34.7	40	0.5645	14:46:28	16-Jul-09	144.6
485	21.4	34.7	40	0.2606	14:47:28	16-Jul-09	123.1
486	44.3	34.7	40	0.3238	14:48:28	16-Jul-09	124.3
487	252.5	34.7	40	0.6198	14:49:28	16-Jul-09	130.1
488	59.7	34.7	40	0.7086	14:50:28	16-Jul-09	123.6
489	63.4	34.7	40	0.439	14:51:28	16-Jul-09	125.7
490	168.9	34.7	39	0.7394	14:52:28	16-Jul-09	124.9
491	50.7	34.7	39	0.4935	14:53:28	16-Jul-09	107.2
492	26.5	34.7	39	0.34	14:54:28	16-Jul-09	107.3
493	72.8	34.6	39	0.281	14:55:28	16-Jul-09	106.4
494	195.2	34.7	39	0.5673	14:56:28	16-Jul-09	106.6
495	28.9	34.6	39	0.4515	14:57:28	16-Jul-09	105.8
496	18.5	34.6	39	0.2437	14:58:28	16-Jul-09	99.9
497	82	34.6	39	0.3923	14:59:28	16-Jul-09	94.0
498	74.1	34.6	39	0.3549	15:00:28	16-Jul-09	96.7
499	35.3	34.6	39	0.3294	15:01:28	16-Jul-09	95.6
500	52.9	34.6	39	0.332	15:02:28	16-Jul-09	77.9
501	168.9	34.6	40	0.5097	15:03:28	16-Jul-09	87.2
502	36.4	34.6	40	0.3937	15:04:28	16-Jul-09	86.7
503	31	34.6	40	0.3304	15:05:28	16-Jul-09	72.8
504	75	34.6	40	0.3288	15:06:28	16-Jul-09	73.8
505	133.1	34.6	40	0.6338	15:07:28	16-Jul-09	78.1
506	53.8	34.6	40	0.5319	15:08:28	16-Jul-09	70.9
507	43.3	34.7	40	0.3	15:09:28	16-Jul-09	70.5
508	151.2	34.7	40	0.46	15:10:28	16-Jul-09	78.3
509	84	34.7	40	0.517	15:11:28	16-Jul-09	79.0
510	73.7	34.7	40	0.5287	15:12:28	16-Jul-09	71.4
511	92.6	34.7	40	0.4597	15:13:28	16-Jul-09	75.4
512	108.2	34.7	40	0.3897	15:14:28	16-Jul-09	81.0
513	172.2	34.7	40	0.5483	15:15:28	16-Jul-09	86.6
514	53.2	34.7	40	0.3874	15:16:28	16-Jul-09	85.3
515	59	34.7	39	0.3049	15:17:28	16-Jul-09	86.8
516	34.4	34.8	39	0.2631	15:18:28	16-Jul-09	85.6
517	20.2	34.8	39	0.2364	15:19:28	16-Jul-09	76.3
518	34.4	34.8	39	0.2722	15:20:28	16-Jul-09	76.2
519	80.3	34.8	39	0.3994	15:21:28	16-Jul-09	79.3
520	917.1	34.9	39	0.7531	15:22:28	16-Jul-09	131.9
521	99.4	34.9	39	0.5286	15:23:28	16-Jul-09	129.8
522	160.5	34.9	39	0.5446	15:24:28	16-Jul-09	136.5
523	290.4	34.9	39	0.8343	15:25:28	16-Jul-09	151.9
524	65.5	34.9	39	0.5255	15:26:28	16-Jul-09	146.6
525	233	35	39	0.7267	15:27:28	16-Jul-09	155.9
526	56.3	35	39	0.723	15:28:28	16-Jul-09	154.8
527	69.8	35	39	0.7166	15:29:28	16-Jul-09	153.4
528	177.5	35	39	0.5485	15:30:28	16-Jul-09	157.7
529	80.8	35	39	0.5416	15:31:28	16-Jul-09	152.0
530	147.6	35.1	39	0.797	15:32:28	16-Jul-09	157.9
531	184.1	35.1	39	0.7513	15:33:28	16-Jul-09	165.7
532	204.3	35.1	39	0.7836	15:34:28	16-Jul-09	176.3
533	271.7	35.1	39	0.7388	15:35:28	16-Jul-09	192.0
534	263	35.1	39	0.818	15:36:28	16-Jul-09	206.3
535	133.6	35.2	39	0.5928	15:37:28	16-Jul-09	209.7
536	71.6	35.2	39	0.5197	15:38:28	16-Jul-09	156.8
537	47.7	35.2	39	0.389	15:39:28	16-Jul-09	153.6
538	133.8	35.2	39	0.5934	15:40:28	16-Jul-09	151.9
539	19.3	35.2	39	0.3471	15:41:28	16-Jul-09	135.0
540	120.8	35.2	39	0.5876	15:42:28	16-Jul-09	138.4
541	77.7	35.2	39	0.5719	15:43:28	16-Jul-09	128.7
542	38.4	35.2	39	0.4154	15:44:28	16-Jul-09	127.6
543	35.1	35.3	39	0.3885	15:45:28	16-Jul-09	125.4
544	53.9	35.2	39	0.4886	15:46:28	16-Jul-09	117.7
545	41.3	35.2	39	0.5136	15:47:28	16-Jul-09	115.2
546	49.5	35.2	39	0.3783	15:48:28	16-Jul-09	109.1
547	78	35.2	39	0.4873	15:49:28	16-Jul-09	102.5
548	63.7	35.2	39	0.5319	15:50:28	16-Jul-09	93.7
549	78.8	35.2	39	0.476	15:51:28	16-Jul-09	81.6
550	49.8	35.2	39	0.4783	15:52:28	16-Jul-09	68.3
551	120.6	35.2	39	0.4603	15:53:28	16-Jul-09	67.5
552	147.5	35.2	39	0.5061	15:54:28	16-Jul-09	72.2
553	291.1	35.2	39	0.7508	15:55:28	16-Jul-09	87.5
554	34.2	35.2	39	0.3971	15:56:28	16-Jul-09	81.2

DataRam 4 Dust Monitor, Serial Number D464

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
452	9.9	35.2	35	0.2863	14:17:27	16-Jul-09	49.4
453	30.6	35.2	35	0.5981	14:18:27	16-Jul-09	47.3
454	31.2	35.2	35	0.8268	14:19:27	16-Jul-09	48.8
455	66.8	35.1	34	1.5479	14:20:27	16-Jul-09	44.4
456	16.4	35.1	35	0.4907	14:21:27	16-Jul-09	44.9
457	18.7	35.1	34	0.3964	14:22:27	16-Jul-09	40.1
458	7.6	35.1	34	0.3174	14:23:27	16-Jul-09	40.2
459	11.3	35.1	34	0.3014	14:24:27	16-Jul-09	40.4
460	124.8	35.1	34	0.6594	14:25:27	16-Jul-09	45.2
461	101.8	35	34	0.8575	14:26:27	16-Jul-09	50.5
462	81.2	35	34	1.9979	14:27:27	16-Jul-09	52.1
463	10.5	35	34	0.4324	14:28:27	16-Jul-09	47.6
464	7.5	35	34	0.324	14:29:27	16-Jul-09	47.2
465	22.7	35	34	0.4414	14:30:27	16-Jul-09	44.9
466	44.4	35	34	0.5564	14:31:27	16-Jul-09	45.3
467	11.8	35	34	0.4096	14:32:27	16-Jul-09	37.3
468	38.7	34.9	34	0.531	14:33:27	16-Jul-09	39.1
469	32	35	34	0.8521	14:34:27	16-Jul-09	39.2
470	7.1	34.9	34	0.3473	14:35:27	16-Jul-09	37.7
471	53.7	34.9	34	0.3908	14:36:27	16-Jul-09	36.9
472	92.6	34.9	34	1.1286	14:37:27	16-Jul-09	41.7
473	9	34.9	34	0.5158	14:38:27	16-Jul-09	41.0
474	102.4	34.9	35	1.2349	14:39:27	16-Jul-09	47.0
475	14	34.9	35	0.6559	14:40:27	16-Jul-09	47.1
476	8.1	34.9	35	0.3683	14:41:27	16-Jul-09	39.8
477	89.1	34.9	35	1.0934	14:42:27	16-Jul-09	39.1
478	24.1	34.8	35	0.5601	14:43:27	16-Jul-09	35.5
479	7.5	34.9	35	0.3103	14:44:27	16-Jul-09	35.3
480	80.6	34.9	34	0.661	14:45:27	16-Jul-09	39.9
481	9.8	34.9	34	0.3191	14:46:27	16-Jul-09	39.1
482	8.7	34.9	34	0.2781	14:47:27	16-Jul-09	36.8
483	78.7	34.9	34	0.574	14:48:27	16-Jul-09	41.0
484	86.6	34.9	34	0.9982	14:49:27	16-Jul-09	44.0
485	9	34.9	34	0.6818	14:50:27	16-Jul-09	42.6
486	23.1	34.9	34	0.6179	14:51:27	16-Jul-09	43.6
487	6.6	34.9	34	0.2887	14:52:27	16-Jul-09	40.6
488	9.4	34.9	33	0.2697	14:53:27	16-Jul-09	35.4
489	7.4	34.9	33	0.2944	14:54:27	16-Jul-09	35.3
490	34.8	34.9	34	0.6289	14:55:27	16-Jul-09	31.1
491	24.8	34.9	33	0.7581	14:56:27	16-Jul-09	31.8
492	6.2	34.9	33	0.2894	14:57:27	16-Jul-09	31.7
493	14.3	34.9	33	0.3119	14:58:27	16-Jul-09	27.0
494	6.5	34.9	34	0.2431	14:59:27	16-Jul-09	25.9
495	12	34.8	34	0.3525	15:00:27	16-Jul-09	26.2
496	32.8	34.9	34	0.2864	15:01:27	16-Jul-09	23.2
497	24	34.9	34	0.5576	15:02:27	16-Jul-09	24.1
498	6.9	34.9	34	0.236	15:03:27	16-Jul-09	23.9
499	7.3	34.9	34	0.2467	15:04:27	16-Jul-09	19.5
500	24	34.9	34	0.3582	15:05:27	16-Jul-09	15.6
501	7.8	34.9	34	0.3369	15:06:27	16-Jul-09	15.5
502	11.4	34.9	34	0.3104	15:07:27	16-Jul-09	14.8
503	7.4	34.9	34	0.2587	15:08:27	16-Jul-09	14.8
504	8.3	34.9	34	0.2245	15:09:27	16-Jul-09	14.7
505	6.6	34.9	34	0.2254	15:10:27	16-Jul-09	14.7
506	9.3	34.9	34	0.307	15:11:27	16-Jul-09	13.1
507	7.9	34.9	34	0.2665	15:12:27	16-Jul-09	12.0
508	6.5	34.9	34	0.2315	15:13:27	16-Jul-09	12.1
509	6.1	34.9	34	0.2172	15:14:27	16-Jul-09	11.6
510	6.6	34.9	34	0.2213	15:15:27	16-Jul-09	11.6
511	7.8	34.9	34	0.2101	15:16:27	16-Jul-09	11.3
512	7.7	34.9	33	0.2624	15:17:27	16-Jul-09	9.7
513	6.4	34.9	34	0.2337	15:18:27	16-Jul-09	8.6
514	7.2	34.9	33	0.2589	15:19:27	16-Jul-09	8.6
515	22.1	34.9	34	0.2221	15:20:27	16-Jul-09	9.6
516	76.7	34.9	33	0.9449	15:21:27	16-Jul-09	12.9
517	9	34.9	34	0.3439	15:22:27	16-Jul-09	12.9
518	7.6	34.9	34	0.2676	15:23:27	16-Jul-09	12.7
519	7.3	34.9	34	0.236	15:24:27	16-Jul-09	12.7
520	10.3	34.9	34	0.2806	15:25:27	16-Jul-09	12.8
521	7.6	34.9	33	0.2356	15:26:27	16-Jul-09	12.9
522	41.7	34.9	33	0.4403	15:27:27	16-Jul-09	14.9
523	6.8	34.9	33	0.2917	15:28:27	16-Jul-09	14.8
524	17.4	34.9	33	0.3207	15:29:27	16-Jul-09	15.5
525	36.2	34.9	33	0.3237	15:30:27	16-Jul-09	17.4
526	12.4	34.9	33	0.3913	15:31:27	16-Jul-09	17.8
527	6.8	34.9	34	0.2608	15:32:27	16-Jul-09	17.7
528	6.5	34.9	34	0.2318	15:33:27	16-Jul-09	17.6
529	37.7	34.9	34	0.3609	15:34:27	16-Jul-09	19.6
530	9.9	34.9	34	0.2893	15:35:27	16-Jul-09	19.8
531	7.8	34.9	34	0.2788	15:36:27	16-Jul-09	18.9
532	122.7	35	33	0.4883	15:37:27	16-Jul-09	21.7
533	7.6	34.9	33	0.3992	15:38:27	16-Jul-09	21.6
534	9.6	34.9	33	0.2887	15:39:27	16-Jul-09	21.8
535	7.6	34.9	33	0.2545	15:40:27	16-Jul-09	21.8
536	6.2	34.9	33	0.2522	15:41:27	16-Jul-09	21.5
537	8.4	34.9	34	0.2974	15:42:27	16-Jul-09	21.6
538	6	34.9	33	0.2296	15:43:27	16-Jul-09	19.4
539	6.2	34.9	34	0.254	15:44:27	16-Jul-09	19.3
540	6.7	34.9	34	0.2448	15:45:27	16-Jul-09	18.6
541	6.2	34.9	34	0.2161	15:46:27	16-Jul-09	16.8
542	7.2	34.9	34	0.2257	15:47:27	16-Jul-09	16.4
543	78.6	34.9	34	0.8701	15:48:27	16-Jul-09	20.9
544	9.2	34.9	34	0.3824	15:49:27	16-Jul-09	21.1
545	159.4	34.9	34	0.7099	15:50:27	16-Jul-09	28.7
546	37	34.9	34	0.8548	15:51:27	16-Jul-09	30.4
547	32.8	34.9	34	0.7528	15:52:27	16-Jul-09	32.0
548	9.4	34.9	34	0.3164	15:53:27	16-Jul-09	24.9
549	9.9	34.9	34	0.2967	15:54:27	16-Jul-09	25.0
550	9.1	34.9	34	0.2641	15:55:27	16-Jul-09	25.0
551	63.6	34.9	34	0.4853	15:56:27	16-Jul-09	28.5

Appendix I
Ambient Air Dust Monitoring Results - SEAD-12 Removal Action

Seneca Army Depot Activity
Romulus, NY

DataRam 4 Dust Monitor, Serial Number D454

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
555	153.7	35.2	39	0.4972	15:57:28	16-Jul-09	89.6
556	35	35.1	39	0.3246	15:58:28	16-Jul-09	84.3
557	56.8	35.1	39	0.3194	15:59:28	16-Jul-09	83.0
558	93.9	35.1	39	0.5434	16:00:28	16-Jul-09	86.4
559	24.2	35.1	39	0.3059	16:01:28	16-Jul-09	85.8
560	25.5	35.1	39	0.317	16:02:28	16-Jul-09	84.0
561	34.5	35.1	39	0.3247	16:03:28	16-Jul-09	83.6
562	26.6	35.1	39	0.3144	16:04:28	16-Jul-09	82.1
563	16	35	39	0.1961	16:05:28	16-Jul-09	78.2
564	27	35	39	0.2643	16:06:28	16-Jul-09	76.0
565	36.3	35	39	0.3606	16:07:28	16-Jul-09	73.3
566	17.5	35	39	0.2613	16:08:28	16-Jul-09	71.3
567	18.9	34.9	39	0.263	16:09:28	16-Jul-09	64.9
568	15.6	34.9	39	0.228	16:10:28	16-Jul-09	56.7
569	15.5	34.9	39	0.2089	16:11:28	16-Jul-09	39.5
570	15.3	34.8	39	0.2235	16:12:28	16-Jul-09	38.3
571	15.5	34.8	39	0.2414	16:13:28	16-Jul-09	29.6
572	14.7	34.8	39	0.2124	16:14:28	16-Jul-09	28.4
573	14.7	34.8	39	0.1924	16:15:28	16-Jul-09	25.7
574	15.6	34.8	39	0.225	16:16:28	16-Jul-09	20.8
575	15.7	34.8	39	0.2004	16:17:28	16-Jul-09	20.3
576	25.9	34.8	39	0.2547	16:18:28	16-Jul-09	20.3

1	10.5	24.6	53	0.2067	6:23:37	21-Jul-09	
2	11.3	24.5	55	0.1954	6:24:37	21-Jul-09	
3	11.1	24.4	56	0.2021	6:25:37	21-Jul-09	
4	11.5	24.3	57	0.2194	6:26:37	21-Jul-09	
5	10.6	24.2	58	0.1849	6:27:37	21-Jul-09	
6	11.8	24.2	59	0.1975	6:28:37	21-Jul-09	
7	11.7	24.1	60	0.1844	6:29:37	21-Jul-09	
8	11.9	24	60	0.2002	6:30:37	21-Jul-09	
9	12.6	24	61	0.2073	6:31:37	21-Jul-09	
10	12.7	23.9	61	0.2251	6:32:37	21-Jul-09	
11	12.4	23.9	62	0.2014	6:33:37	21-Jul-09	
12	12.8	23.8	62	0.1995	6:34:37	21-Jul-09	
13	12.8	23.7	63	0.1842	6:35:37	21-Jul-09	
14	13.5	23.7	63	0.2119	6:36:37	21-Jul-09	
15	13.5	23.6	63	0.213	6:37:37	21-Jul-09	
16	13.2	23.6	64	0.2179	6:38:37	21-Jul-09	12.1
17	13.7	23.6	64	0.2287	6:39:37	21-Jul-09	12.3
18	13.2	23.5	64	0.2191	6:40:37	21-Jul-09	12.4
19	13	23.5	65	0.2153	6:41:37	21-Jul-09	12.6
20	13.8	23.5	65	0.2389	6:42:37	21-Jul-09	12.7
21	14.3	23.4	65	0.2372	6:43:37	21-Jul-09	12.9
22	14.7	23.4	66	0.241	6:44:37	21-Jul-09	13.1
23	14.3	23.3	66	0.2249	6:45:37	21-Jul-09	13.3
24	15.5	23.3	66	0.2158	6:46:37	21-Jul-09	13.5
25	15.5	23.3	66	0.2189	6:47:37	21-Jul-09	13.7
26	15.6	23.2	67	0.2213	6:48:37	21-Jul-09	13.9
27	15.9	23.2	67	0.2236	6:49:37	21-Jul-09	14.1
28	15.8	23.2	67	0.2381	6:50:37	21-Jul-09	14.3
29	15.6	23.1	68	0.2244	6:51:37	21-Jul-09	14.4
30	15.6	23.1	68	0.2175	6:52:37	21-Jul-09	14.6
31	16.4	23.1	68	0.2301	6:53:37	21-Jul-09	14.8
32	16.6	23.1	68	0.2505	6:54:37	21-Jul-09	15.0
33	16.8	23.1	69	0.2308	6:55:37	21-Jul-09	15.2
34	16.8	23	69	0.2487	6:56:37	21-Jul-09	15.4
35	16.6	23	69	0.2534	6:57:37	21-Jul-09	15.6
36	16.5	23	69	0.2391	6:58:37	21-Jul-09	15.8
37	17	23	69	0.2415	6:59:37	21-Jul-09	16.0
38	17	23	70	0.2382	7:00:37	21-Jul-09	16.1
39	17.5	22.9	70	0.2488	7:01:37	21-Jul-09	16.3
40	17.4	22.9	70	0.2341	7:02:37	21-Jul-09	16.4
41	18.1	22.9	70	0.2338	7:03:37	21-Jul-09	16.6
42	18.9	22.9	70	0.2795	7:04:37	21-Jul-09	16.8
43	18.3	22.8	70	0.2553	7:05:37	21-Jul-09	16.9
44	18.9	22.8	71	0.2593	7:06:37	21-Jul-09	17.1
45	17.6	22.8	71	0.2449	7:07:37	21-Jul-09	17.3
46	18.5	22.8	71	0.2467	7:08:37	21-Jul-09	17.4
47	18.7	22.8	71	0.2545	7:09:37	21-Jul-09	17.6
48	19.8	22.8	71	0.2498	7:10:37	21-Jul-09	17.8
49	21.5	22.7	71	0.2631	7:11:37	21-Jul-09	18.1
50	31.9	22.7	71	0.3049	7:12:37	21-Jul-09	19.0
51	25.5	22.7	71	0.2939	7:13:37	21-Jul-09	19.6
52	23.9	22.7	72	0.2988	7:14:37	21-Jul-09	20.0
53	24	22.7	72	0.2816	7:15:37	21-Jul-09	20.5
54	22.5	22.7	72	0.2797	7:16:37	21-Jul-09	20.8
55	21.3	22.7	72	0.2523	7:17:37	21-Jul-09	21.1
56	21.4	22.7	72	0.2727	7:18:37	21-Jul-09	21.3
57	19.1	22.7	72	0.2268	7:19:37	21-Jul-09	21.4
58	19.9	22.7	72	0.2443	7:20:37	21-Jul-09	21.4
59	20.6	22.7	72	0.2461	7:21:37	21-Jul-09	21.6
60	20.6	22.7	72	0.2601	7:22:37	21-Jul-09	21.7
61	20.4	22.7	72	0.2619	7:23:37	21-Jul-09	21.9
62	20.5	22.7	73	0.259	7:24:37	21-Jul-09	22.0
63	20.7	22.7	73	0.2625	7:25:37	21-Jul-09	22.1
64	20.5	22.7	73	0.2514	7:26:37	21-Jul-09	22.1
65	19.7	22.7	73	0.2463	7:27:37	21-Jul-09	22.0
66	20.4	22.7	73	0.2484	7:28:37	21-Jul-09	21.3
67	20.3	22.7	73	0.2349	7:29:37	21-Jul-09	21.0
68	20.7	22.7	73	0.252	7:30:37	21-Jul-09	20.8
69	20.6	22.7	73	0.2424	7:31:37	21-Jul-09	20.6
70	20.9	22.7	73	0.2717	7:32:37	21-Jul-09	20.5
71	21.4	22.7	73	0.271	7:33:37	21-Jul-09	20.5
72	21.4	22.7	73	0.2498	7:34:37	21-Jul-09	20.5
73	21.4	22.7	73	0.2556	7:35:37	21-Jul-09	20.6
74	21.3	22.7	73	0.2514	7:36:37	21-Jul-09	20.7
75	22	22.7	73	0.2501	7:37:37	21-Jul-09	20.8

DataRam 4 Dust Monitor, Serial Number D464

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
552	25.6	34.9	34	0.6768	15:57:27	16-Jul-09	29.7
553	39.5	34.9	34	0.4141	15:58:27	16-Jul-09	31.7
554	69.3	34.9	34	1.9828	15:59:27	16-Jul-09	35.6
555	28.7	34.9	34	1.9745	16:00:27	16-Jul-09	37.0
556	14.2	34.9	34	0.5581	16:01:27	16-Jul-09	37.5
557	13.9	34.9	33	0.3385	16:02:27	16-Jul-09	38.0
558	6.9	34.9	33	0.2497	16:03:27	16-Jul-09	37.9
559	9	34.9	34	0.2852	16:04:27	16-Jul-09	33.6
560	9.2	34.9	34	0.3071	16:05:27	16-Jul-09	33.6
561	8.3	34.8	34	0.2627	16:06:27	16-Jul-09	24.2
562	7.2	34.9	34	0.2503	16:07:27	16-Jul-09	22.3
563	6.6	34.8	34	0.2268	16:08:27	16-Jul-09	20.7
564	7.7	34.8	34	0.2323	16:09:27	16-Jul-09	20.5
565	6	34.9	34	0.2464	16:10:27	16-Jul-09	20.3
566	6.5	34.9	34	0.2254	16:11:27	16-Jul-09	20.1
567	6.7	34.9	33	0.2404	16:12:27	16-Jul-09	16.6
568	6.5	34.8	34	0.2395	16:13:27	16-Jul-09	15.4
569	8	34.8	33	0.2239	16:14:27	16-Jul-09	13.4
570	7.3	34.9	34	0.2588	16:15:27	16-Jul-09	9.5
571	5.4	34.8	34	0.2437	16:16:27	16-Jul-09	8.1
572	5.9	34.9	34	0.227	16:17:27	16-Jul-09	7.6

1	7.1	23	52	0.2682	6:25:54	21-Jul-09	
2	7.9	22.9	53	0.329	6:26:54	21-Jul-09	
3	8.3	22.7	54	0.3145	6:27:54	21-Jul-09	
4	8.5	22.7	54	0.2872	6:28:54	21-Jul-09	
5	8.8	22.6	55	0.3002	6:29:54	21-Jul-09	
6	7.8	22.5	56	0.2953	6:30:54	21-Jul-09	
7	7.8	22.5	57	0.2894	6:31:54	21-Jul-09	
8	8.4	22.4	57	0.3596	6:32:54	21-Jul-09	
9	8.2	22.3	58	0.3199	6:33:54	21-Jul-09	
10	8.4	22.3	58	0.2911	6:34:54	21-Jul-09	
11	8.6	22.2	59	0.281	6:35:54	21-Jul-09	
12	8.8	22.1	59	0.2771	6:36:54	21-Jul-09	
13	9.1	22.1	60	0.3064	6:37:54	21-Jul-09	
14	8.6	22	60	0.2567	6:38:54	21-Jul-09	
15	9.1	22	60	0.2722	6:39:54	21-Jul-09	
16	9.6	22	60	0.2942	6:40:54	21-Jul-09	8.4
17	9.8	21.9	61	0.3225	6:41:54	21-Jul-09	8.6
18	9.5	21.9	61	0.2815	6:42:54	21-Jul-09	8.7
19	10.3	21.8	61	0.3439	6:43:54	21-Jul-09	8.8
20	10.7	21.7	62	0.3009	6:44:54	21-Jul-09	9.0
21	10.5	21.7	62	0.3357	6:45:54	21-Jul-09	9.1
22	10	21.7	62	0.2853	6:46:54	21-Jul-09	9.2
23	10.4	21.6	63	0.2773	6:47:54	21-Jul-09	9.4
24	10.8	21.6	63	0.3116	6:48:54	21-Jul-09	9.5
25	10.6	21.6	63	0.2938	6:49:54	21-Jul-09	9.7
26	11.3	21.6	64	0.3061	6:50:54	21-Jul-09	9.9
27	11.3	21.5	64	0.2964	6:51:54	21-Jul-09	10.0
28	10.9	21.5	64	0.2724	6:52:54	21-Jul-09	10.2
29	12.7	21.5	64	0.3118	6:53:54	21-Jul-09	10.4
30	13.9	21.5	64	0.3966	6:54:54	21-Jul-09	10.7
31	11.7	21.4	65	0.29	6:55:54	21-Jul-09	10.9
32	11.6	21.4	65	0.3032	6:56:54	21-Jul-09	11.0
33	11.2	21.4	65	0.263	6:57:54	21-Jul-09	11.1
34	11.9	21.3	65	0.26	6:58:54	21-Jul-09	11.2
35	11.4	21.3	65	0.2683	6:59:54	21-Jul-09	11.3
36	11.8	21.3	65	0.2565	7:00:54	21-Jul-09	11.4
37	11.6	21.2	66	0.2895	7:01:54	21-Jul-09	11.4
38	10.9	21.2	66	0.2345	7:02:54	21-Jul-09	11.5
39	11.3	21.2	66	0.2325	7:03:54	21-Jul-09	11.6
40	12.2	21.2	66	0.2469	7:04:54	21-Jul-09	11.6
41	12.4	21.2	66	0.267	7:05:54	21-Jul-09	11.8
42	12.2	21.2	67	0.2803	7:06:54	21-Jul-09	11.8
43	12.1	21.1	67	0.2563	7:07:54	21-Jul-09	11.9
44	12.5	21.1	67	0.2572	7:08:54	21-Jul-09	12.0
45	11.7	21.1	67	0.2429	7:09:54	21-Jul-09	11.9
46	12.2	21.1	67	0.2768	7:10:54	21-Jul-09	11.8
47	12.3	21.1	67	0.2441	7:11:54	21-Jul-09	11.8
48	12.2	21.1	67	0.2429	7:12:54	21-Jul-09	11.9
49	12.8	21.1	67	0.2581	7:13:54	21-Jul-09	12.0
50	12.8	21.1	68	0.2493	7:14:54	21-Jul-09	12.0
51	12.9	21.1	68	0.2339	7:15:54	21-Jul-09	12.1
52	12.5	21	68	0.2576	7:16:54	21-Jul-09	12.2
53	13.9	21	68	0.3043	7:17:54	21-Jul-09	12.3
54	13.8	21	68	0.2844	7:18:54	21-Jul-09	12.5
55	12.9	21	68	0.2559	7:19:54	21-Jul-09	12.6
56	13.3	21	68	0.2542	7:20:54	21-Jul-09	12.7
57	13.8	21	68	0.2754	7:21:54	21-Jul-09	12.7
58	12.6	21	69	0.2555	7:22:54	21-Jul-09	12.8
59	13.1	21	69	0.2476	7:23:54	21-Jul-09	12.8
60	13.9	21	69	0.2622	7:24:54	21-Jul-09	12.9
61	14	21	69	0.2676	7:25:54	21-Jul-09	13.1
62	13.1	21	69	0.2558	7:26:54	21-Jul-09	13.1
63	13.2	21	69	0.2542	7:27:54	21-Jul-09	13.2
64	12.5	21	69	0.2368	7:28:54	21-Jul-09	13.2
65	13.2	21	69	0.2378	7:29:54	21-Jul-09	13.2
66	13.6	21	69	0.2874	7:30:54	21-Jul-09	13.3
67	12.3	21	69	0.2478	7:31:54	21-Jul-09	13.2
68	12.9	21	69	0.2409	7:32:54	21-Jul-09	13.3
69	13.1	21	69	0.2422	7:33:54	21-Jul-09	13.2
70	13.6	21	69	0.2388	7:34:54	21-Jul-09	13.2
71	13.5	21	69	0.2358	7:35:54	21-Jul-09	13.2
72	13.5	21	69	0.2585	7:36:54	21-Jul-09	13.2
73	13.3	21	69	0.2245	7:37:54	21-Jul-09	13.2

Appendix I
Ambient Air Dust Monitoring Results - SEAD-12 Removal Action

Seneca Army Depot Activity
Romulus, NY

DataRam 4 Dust Monitor, Serial Number D454

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
76	22.2	22.7	73	0.2521	7:38:37	21-Jul-09	20.9
77	22.6	22.7	73	0.2576	7:39:37	21-Jul-09	21.0
78	23.9	22.7	73	0.2655	7:40:37	21-Jul-09	21.3
79	24.5	22.7	73	0.2453	7:41:37	21-Jul-09	21.5
80	25	22.7	74	0.2499	7:42:37	21-Jul-09	21.8
81	22.8	22.7	74	0.2467	7:43:37	21-Jul-09	22.0
82	21.6	22.7	74	0.2488	7:44:37	21-Jul-09	22.0
83	21.2	22.7	74	0.2569	7:45:37	21-Jul-09	22.1
84	21.9	22.7	74	0.2481	7:46:37	21-Jul-09	22.2
85	22.8	22.8	74	0.2741	7:47:37	21-Jul-09	22.3
86	23	22.8	74	0.2622	7:48:37	21-Jul-09	22.4
87	21.8	22.8	74	0.2456	7:49:37	21-Jul-09	22.5
88	22.6	22.8	74	0.2553	7:50:37	21-Jul-09	22.5
89	22.2	22.8	74	0.2721	7:51:37	21-Jul-09	22.6
90	21.3	22.9	74	0.2516	7:52:37	21-Jul-09	22.6
91	21.3	22.9	74	0.2392	7:53:37	21-Jul-09	22.5
92	20.8	22.9	74	0.249	7:54:37	21-Jul-09	22.5
93	20.7	22.9	74	0.237	7:55:37	21-Jul-09	22.3
94	21.4	23	74	0.2458	7:56:37	21-Jul-09	22.2
95	22	23	74	0.2486	7:57:37	21-Jul-09	22.0
96	21.5	23	74	0.2654	7:58:37	21-Jul-09	21.8
97	22.3	23	74	0.2852	7:59:37	21-Jul-09	21.8
98	22.6	23	74	0.2696	8:00:37	21-Jul-09	21.8
99	22.7	23	74	0.2527	8:01:37	21-Jul-09	21.9
100	21.9	23	74	0.2506	8:02:37	21-Jul-09	21.9
101	22.1	23.1	74	0.2633	8:03:37	21-Jul-09	21.9
102	22.2	23.1	74	0.2777	8:04:37	21-Jul-09	21.8
103	21.6	23.1	74	0.2652	8:05:37	21-Jul-09	21.8
104	20.6	23.1	74	0.2471	8:06:37	21-Jul-09	21.7
105	20.7	23.1	74	0.251	8:07:37	21-Jul-09	21.6
106	20.8	23.2	75	0.2518	8:08:37	21-Jul-09	21.6
107	19.5	23.2	74	0.2468	8:09:37	21-Jul-09	21.5
108	20.3	23.2	74	0.2504	8:10:37	21-Jul-09	21.4
109	20	23.2	75	0.2565	8:11:37	21-Jul-09	21.4
110	20.1	23.2	75	0.2524	8:12:37	21-Jul-09	21.3
111	20.7	23.3	74	0.2584	8:13:37	21-Jul-09	21.2
112	19.9	23.3	75	0.2457	8:14:37	21-Jul-09	21.1
113	19.8	23.3	74	0.2434	8:15:37	21-Jul-09	21.0
114	20.6	23.3	75	0.2528	8:16:37	21-Jul-09	20.8
115	21	23.4	75	0.2582	8:17:37	21-Jul-09	20.7
116	21.4	23.4	74	0.2486	8:18:37	21-Jul-09	20.7
117	21.1	23.4	75	0.2421	8:19:37	21-Jul-09	20.6
118	20.7	23.4	75	0.2464	8:20:37	21-Jul-09	20.6
119	21.4	23.4	75	0.2466	8:21:37	21-Jul-09	20.5
120	21.3	23.5	75	0.2505	8:22:37	21-Jul-09	20.6
121	22.5	23.5	75	0.2594	8:23:37	21-Jul-09	20.7
122	22.5	23.5	75	0.2707	8:24:37	21-Jul-09	20.8
123	23	23.5	75	0.2825	8:25:37	21-Jul-09	21.0
124	22.2	23.6	75	0.252	8:26:37	21-Jul-09	21.1
125	22.6	23.6	75	0.2453	8:27:37	21-Jul-09	21.3
126	23.2	23.6	75	0.2463	8:28:37	21-Jul-09	21.5
127	23.2	23.6	75	0.2401	8:29:37	21-Jul-09	21.7
128	22.5	23.6	75	0.2401	8:30:37	21-Jul-09	21.8
129	23.3	23.6	75	0.2468	8:31:37	21-Jul-09	22.0
130	24.2	23.6	75	0.2704	8:32:37	21-Jul-09	22.3
131	24.7	23.7	75	0.2641	8:33:37	21-Jul-09	22.5
132	24	23.7	75	0.2627	8:34:37	21-Jul-09	22.7
133	23.8	23.7	75	0.2579	8:35:37	21-Jul-09	22.8
134	24.4	23.7	75	0.2667	8:36:37	21-Jul-09	23.1
135	25.4	23.7	75	0.2713	8:37:37	21-Jul-09	23.3
136	25.9	23.8	75	0.2867	8:38:37	21-Jul-09	23.6
137	25.8	23.8	75	0.2704	8:39:37	21-Jul-09	23.8
138	24.9	23.8	75	0.2768	8:40:37	21-Jul-09	23.9
139	25.5	23.8	75	0.2592	8:41:37	21-Jul-09	24.1
140	24.9	23.9	75	0.241	8:42:37	21-Jul-09	24.3
141	24.7	23.9	75	0.2546	8:43:37	21-Jul-09	24.4
142	25.1	24	75	0.2566	8:44:37	21-Jul-09	24.5
143	26.7	24	75	0.2777	8:45:37	21-Jul-09	24.7
144	27.1	24	75	0.2889	8:46:37	21-Jul-09	25.0
145	26.1	24	75	0.289	8:47:37	21-Jul-09	25.2
146	25.3	24.1	75	0.2752	8:48:37	21-Jul-09	25.3
147	25.6	24.1	75	0.2701	8:49:37	21-Jul-09	25.3
148	25.1	24.1	75	0.2559	8:50:37	21-Jul-09	25.4
149	25.1	24.1	75	0.2422	8:51:37	21-Jul-09	25.5
150	24.7	24.2	75	0.2577	8:52:37	21-Jul-09	25.5
151	25.7	24.2	75	0.2692	8:53:37	21-Jul-09	25.5
152	24.9	24.2	75	0.2684	8:54:37	21-Jul-09	25.5
153	24.8	24.3	75	0.2729	8:55:37	21-Jul-09	25.4
154	24.4	24.3	75	0.2682	8:56:37	21-Jul-09	25.4
155	23.8	24.4	75	0.2469	8:57:37	21-Jul-09	25.3
156	23.4	24.4	75	0.2501	8:58:37	21-Jul-09	25.2
157	23.3	24.5	75	0.2442	8:59:37	21-Jul-09	25.1
158	22.7	24.5	75	0.2318	9:00:37	21-Jul-09	24.9
159	23.1	24.5	75	0.2456	9:01:37	21-Jul-09	24.7
160	22.8	24.6	75	0.2289	9:02:37	21-Jul-09	24.4
161	36.8	24.6	75	0.2638	9:03:37	21-Jul-09	25.1
162	26.5	24.7	75	0.2804	9:04:37	21-Jul-09	25.2
163	22.5	24.7	75	0.2405	9:05:37	21-Jul-09	25.0
164	22.6	24.7	75	0.2422	9:06:37	21-Jul-09	24.8
165	24.5	24.8	75	0.2381	9:07:37	21-Jul-09	24.8
166	23.3	24.8	74	0.2404	9:08:37	21-Jul-09	24.7
167	23.8	24.9	74	0.2355	9:09:37	21-Jul-09	24.6
168	43.6	24.9	74	0.2601	9:10:37	21-Jul-09	25.7
169	25.3	25	74	0.2489	9:11:37	21-Jul-09	25.8
170	24.7	25	74	0.2466	9:12:37	21-Jul-09	25.8
171	25.3	25.1	74	0.2507	9:13:37	21-Jul-09	25.9
172	25.1	25.1	74	0.2517	9:14:37	21-Jul-09	26.0
173	25.1	25.1	74	0.2564	9:15:37	21-Jul-09	26.1
174	25.4	25.2	74	0.2453	9:16:37	21-Jul-09	26.3
175	25.4	25.2	74	0.2586	9:17:37	21-Jul-09	26.4

DataRam 4 Dust Monitor, Serial Number D464

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
74	13.9	21	69	0.262	7:38:54	21-Jul-09	13.3
75	13.9	21	69	0.245	7:39:54	21-Jul-09	13.3
76	14.5	21	70	0.2851	7:40:54	21-Jul-09	13.4
77	15.2	21	70	0.2758	7:41:54	21-Jul-09	13.5
78	15	21	70	0.28	7:42:54	21-Jul-09	13.6
79	16.1	21	70	0.2804	7:43:54	21-Jul-09	13.8
80	15.6	21	70	0.2846	7:44:54	21-Jul-09	14.0
81	16.3	21	70	0.2998	7:45:54	21-Jul-09	14.1
82	16.9	21	70	0.3152	7:46:54	21-Jul-09	14.4
83	15.8	21.1	70	0.2782	7:47:54	21-Jul-09	14.6
84	15.2	21.1	70	0.2829	7:48:54	21-Jul-09	14.7
85	15.7	21.1	70	0.2827	7:49:54	21-Jul-09	14.9
86	15.1	21.1	70	0.2512	7:50:54	21-Jul-09	15.0
87	14.8	21.1	70	0.2638	7:51:54	21-Jul-09	15.1
88	14.7	21.1	70	0.2692	7:52:54	21-Jul-09	15.1
89	14.7	21.1	70	0.2752	7:53:54	21-Jul-09	15.2
90	13.9	21.1	70	0.2377	7:54:54	21-Jul-09	15.2
91	13.9	21.2	70	0.2345	7:55:54	21-Jul-09	15.2
92	14.3	21.2	70	0.2461	7:56:54	21-Jul-09	15.2
93	14.8	21.2	70	0.2456	7:57:54	21-Jul-09	15.2
94	14.7	21.2	70	0.2709	7:58:54	21-Jul-09	15.2
95	14.3	21.2	71	0.2484	7:59:54	21-Jul-09	15.0
96	14.7	21.2	70	0.2768	8:00:54	21-Jul-09	15.0
97	13.8	21.3	71	0.2351	8:01:54	21-Jul-09	14.8
98	13.6	21.3	70	0.2453	8:02:54	21-Jul-09	14.6
99	14.3	21.3	71	0.2707	8:03:54	21-Jul-09	14.5
100	13.2	21.4	71	0.245	8:04:54	21-Jul-09	14.4
101	13.2	21.4	71	0.2343	8:05:54	21-Jul-09	14.3
102	12	21.4	71	0.2176	8:06:54	21-Jul-09	14.1
103	12.8	21.4	71	0.2294	8:07:54	21-Jul-09	13.9
104	12.2	21.5	71	0.2197	8:08:54	21-Jul-09	13.8
105	12.8	21.5	71	0.211	8:09:54	21-Jul-09	13.7
106	12.7	21.5	71	0.2236	8:10:54	21-Jul-09	13.6
107	12.8	21.5	71	0.2265	8:11:54	21-Jul-09	13.5
108	12.3	21.5	71	0.2032	8:12:54	21-Jul-09	13.4
109	12.8	21.5	71	0.2288	8:13:54	21-Jul-09	13.3
110	13.1	21.6	71	0.2176	8:14:54	21-Jul-09	13.2
111	12.9	21.6	71	0.2172	8:15:54	21-Jul-09	13.1
112	12.9	21.6	71	0.218	8:16:54	21-Jul-09	13.0
113	12.3	21.7	71	0.1962	8:17:54	21-Jul-09	12.9
114	12.6	21.6	71	0.224	8:18:54	21-Jul-09	12.8
115	14.5	21.7	71	0.2575	8:19:54	21-Jul-09	12.8
116	13.9	21.7	71	0.2664	8:20:54	21-Jul-09	12.9
117	16.3	21.7	71	0.3166	8:21:54	21-Jul-09	13.1
118	14.7	21.7	71	0.2397	8:22:54	21-Jul-09	13.2
119	15.4	21.7	71	0.2769	8:23:54	21-Jul-09	13.4
120	14.5	21.8	71	0.2643	8:24:54	21-Jul-09	13.5
121	15.4	21.8	71	0.2699	8:25:54	21-Jul-09	13.7
122	15.5	21.8	71	0.2423	8:26:54	21-Jul-09	13.9
123	15.4	21.9	71	0.2621	8:27:54	21-Jul-09	14.0
124	15.2	21.9	71	0.2504	8:28:54	21-Jul-09	14.2
125	16	21.9	71	0.2528	8:29:54	21-Jul-09	14.4
126	16.7	21.9	71	0.2759	8:30:54	21-Jul-09	14.6
127	17.3	21.9	71	0.305	8:31:54	21-Jul-09	14.9
128	16.9	21.9	71	0.3217	8:32:54	21-Jul-09	15.2
129	17	21.9	71	0.2961	8:33:54	21-Jul-09	15.5
130	17	22	71	0.2882	8:34:54	21-Jul-09	15.7
131	17.4	22	71	0.2995	8:35:54	21-Jul-09	15.9
132	17.9	22	71	0.2724	8:36:54	21-Jul-09	16.2
133	17.6	22	71	0.289	8:37:54	21-Jul-09	16.2
134	17	22	71	0.2776	8:38:54	21-Jul-09	16.4
135	16	22.1	71	0.2407	8:39:54	21-Jul-09	16.4
136	16.8	22.1	71	0.2645	8:40:54	21-Jul-09	16.6
137	17.5	22.1	71	0.308	8:41:54	21-Jul-09	16.7
138	18.2	22.1	71	0.3073	8:42:54	21-Jul-09	16.9
139	17.1	22.2	71	0.3006	8:43:54	21-Jul-09	17.0
140	16.8	22.2	71	0.2686	8:44:54	21-Jul-09	17.1
141	17.8	22.2	71	0.2938	8:45:54	21-Jul-09	17.2
142	18	22.2	71	0.3005	8:46:54	21-Jul-09	17.3
143	17.3	22.2	71	0.2953	8:47:54	21-Jul-09	17.3
144	17.6	22.3	71	0.2793	8:48:54	21-Jul-09	17.3
145	17.4	22.3	71	0.2875	8:49:54	21-Jul-09	17.3
146	17.4	22.3	71	0.3084	8:50:54	21-Jul-09	17.4
147	18.2	22.4	71	0.3256	8:51:54	21-Jul-09	17.4
148	17.9	22.4	71	0.2996	8:52:54	21-Jul-09	17.4
149	17.5	22.4	71	0.3107	8:53:54	21-Jul-09	17.4
150	16.7	22.5	71	0.3021	8:54:54	21-Jul-09	17.4
151	16.5	22.5	71	0.2749	8:55:54	21-Jul-09	17.4
152	16.3	22.5	71	0.2926	8:56:54	21-Jul-09	17.4
153	16.1	22.6	71	0.2945	8:57:54	21-Jul-09	17.3
154	15.5	22.6	71	0.2874	8:58:54	21-Jul-09	17.1
155	15.3	22.6	71	0.2704	8:59:54	21-Jul-09	17.0
156	15.6	22.6	71	0.2654	9:00:54	21-Jul-09	16.9
157	16.4	22.7	71	0.2765	9:01:54	21-Jul-09	16.9
158	16.2	22.7	71	0.2778	9:02:54	21-Jul-09	16.7
159	15.1	22.8	71	0.2319	9:03:54	21-Jul-09	16.6
160	15	22.8	71	0.2501	9:04:54	21-Jul-09	16.4
161	14.7	22.9	71	0.243	9:05:54	21-Jul-09	16.3
162	15.4	22.9	71	0.2554	9:06:54	21-Jul-09	16.2
163	15.1	23	71	0.2436	9:07:54	21-Jul-09	16.0
164	15.4	23	71	0.2574	9:08:54	21-Jul-09	15.8
165	15.9	23	71	0.2442	9:09:54	21-Jul-09	15.7
166	14.4	23.1	71	0.2296	9:10:54	21-Jul-09	15.6
167	16.6	23.1	71	0.2942	9:11:54	21-Jul-09	15.6
168	16	23.2	71	0.2584	9:12:54	21-Jul-09	15.5
169	17.2	23.2	71	0.2953	9:13:54	21-Jul-09	15.6
170	17.3	23.2	71	0.286	9:14:54	21-Jul-09	15.7
171	17.5	23.3	71	0.3116	9:15:54	21-Jul-09	15.9
172	18.6	23.3	71	0.3698	9:16:54	21-Jul-09	16.1
173	17.8	23.4	70	0.3385	9:17:54	21-Jul-09	16.1

Appendix I
Ambient Air Dust Monitoring Results - SEAD-12 Removal Action

Seneca Army Depot Activity
Romulus, NY

DataRam 4 Dust Monitor, Serial Number D454

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
176	27.6	25.3	74	0.2695	9:18:37	21-Jul-09	26.7
177	25.3	25.3	74	0.2797	9:19:37	21-Jul-09	26.0
178	24.1	25.4	74	0.2613	9:20:37	21-Jul-09	25.9
179	24.1	25.5	73	0.2377	9:21:37	21-Jul-09	26.0
180	24.2	25.5	73	0.2414	9:22:37	21-Jul-09	26.1
181	23.9	25.6	73	0.2327	9:23:37	21-Jul-09	26.0
182	23.9	25.6	73	0.2419	9:24:37	21-Jul-09	26.1
183	23.1	25.6	73	0.2606	9:25:37	21-Jul-09	26.0
184	25.9	25.7	73	0.249	9:26:37	21-Jul-09	24.9
185	25.6	25.7	73	0.2443	9:27:37	21-Jul-09	24.9
186	26.7	25.8	72	0.237	9:28:37	21-Jul-09	25.0
187	29.8	25.8	72	0.2742	9:29:37	21-Jul-09	25.3
188	41.9	25.9	72	0.3467	9:30:37	21-Jul-09	26.4
189	24.7	25.9	72	0.2572	9:31:37	21-Jul-09	26.4
190	29.8	26	72	0.2806	9:32:37	21-Jul-09	26.6
191	31.9	26	71	0.2496	9:33:37	21-Jul-09	27.0
192	22.4	26	71	0.2444	9:34:37	21-Jul-09	26.7
193	24.2	26.1	71	0.2276	9:35:37	21-Jul-09	26.6
194	31.7	26.1	71	0.3364	9:36:37	21-Jul-09	27.1
195	22.8	26.2	71	0.2424	9:37:37	21-Jul-09	27.0
196	21.1	26.2	71	0.197	9:38:37	21-Jul-09	26.8
197	21.8	26.3	71	0.2112	9:39:37	21-Jul-09	26.7
198	22.3	26.3	71	0.2399	9:40:37	21-Jul-09	26.6
199	23.7	26.4	70	0.2244	9:41:37	21-Jul-09	26.6
200	21.7	26.4	70	0.2184	9:42:37	21-Jul-09	26.4
201	21.2	26.4	70	0.2328	9:43:37	21-Jul-09	26.1
202	21.7	26.5	70	0.2286	9:44:37	21-Jul-09	25.8
203	21.5	26.5	70	0.2383	9:45:37	21-Jul-09	25.3
204	21.3	26.6	70	0.2086	9:46:37	21-Jul-09	24.0
205	20.4	26.6	70	0.2088	9:47:37	21-Jul-09	23.7
206	20.1	26.6	70	0.2072	9:48:37	21-Jul-09	23.1
207	20.3	26.7	70	0.2146	9:49:37	21-Jul-09	22.4
208	20.1	26.7	70	0.2154	9:50:37	21-Jul-09	22.2
209	20.5	26.7	70	0.213	9:51:37	21-Jul-09	22.0
210	19.8	26.8	70	0.1958	9:52:37	21-Jul-09	21.3
211	19.4	26.8	69	0.1949	9:53:37	21-Jul-09	21.1
212	19.6	26.9	69	0.2148	9:54:37	21-Jul-09	21.0
213	19.7	26.9	69	0.2099	9:55:37	21-Jul-09	20.8
214	19.8	27	69	0.2154	9:56:37	21-Jul-09	20.7
215	18.9	27	69	0.2073	9:57:37	21-Jul-09	20.4
216	20.5	27	69	0.2195	9:58:37	21-Jul-09	20.3
217	18.7	27.1	69	0.2022	9:59:37	21-Jul-09	20.1
218	18.9	27.1	69	0.2016	10:00:37	21-Jul-09	20.0
219	18.8	27.2	69	0.2044	10:01:37	21-Jul-09	19.8
220	18.6	27.2	69	0.1949	10:02:37	21-Jul-09	19.6
221	18.5	27.2	68	0.1898	10:03:37	21-Jul-09	19.5
222	19.1	27.2	68	0.2105	10:04:37	21-Jul-09	19.5
223	18	27.3	68	0.2027	10:05:37	21-Jul-09	19.3
224	19.1	27.4	68	0.2136	10:06:37	21-Jul-09	19.2
225	18.5	27.4	68	0.2179	10:07:37	21-Jul-09	19.1
226	17.6	27.4	68	0.2081	10:08:37	21-Jul-09	19.0
227	18.4	27.5	68	0.2044	10:09:37	21-Jul-09	18.9
228	17.9	27.5	68	0.2043	10:10:37	21-Jul-09	18.8
229	18	27.5	68	0.1936	10:11:37	21-Jul-09	18.7
230	17.6	27.6	68	0.1991	10:12:37	21-Jul-09	18.6
231	17.9	27.6	68	0.2065	10:13:37	21-Jul-09	18.5
232	17.1	27.7	68	0.1816	10:14:37	21-Jul-09	18.3
233	16.8	27.7	68	0.1949	10:15:37	21-Jul-09	18.2
234	16.8	27.7	67	0.1897	10:16:37	21-Jul-09	18.0
235	18.9	27.8	67	0.1902	10:17:37	21-Jul-09	18.1
236	17.5	27.8	67	0.2181	10:18:37	21-Jul-09	18.0
237	15.9	27.9	67	0.1982	10:19:37	21-Jul-09	17.8
238	15.6	27.9	67	0.1881	10:20:37	21-Jul-09	17.6
239	15.7	28	67	0.1854	10:21:37	21-Jul-09	17.5
240	16.6	28	67	0.2156	10:22:37	21-Jul-09	17.3
241	16	28	67	0.2144	10:23:37	21-Jul-09	17.1
242	15.8	28.1	67	0.2018	10:24:37	21-Jul-09	17.0
243	15.6	28.1	67	0.197	10:25:37	21-Jul-09	16.9
244	15.5	28.2	67	0.1854	10:26:37	21-Jul-09	16.7
245	15.9	28.2	67	0.2035	10:27:37	21-Jul-09	16.6
246	16.2	28.3	66	0.2028	10:28:37	21-Jul-09	16.5
247	16.1	28.3	66	0.2134	10:29:37	21-Jul-09	16.4
248	15.8	28.4	66	0.2001	10:30:37	21-Jul-09	16.3
249	15	28.5	66	0.186	10:31:37	21-Jul-09	16.2
250	14.5	28.5	66	0.1763	10:32:37	21-Jul-09	16.0
251	15.6	28.5	66	0.1861	10:33:37	21-Jul-09	15.8
252	14.9	28.6	65	0.1978	10:34:37	21-Jul-09	15.7
253	15.5	28.7	65	0.2171	10:35:37	21-Jul-09	15.6
254	15.3	28.7	65	0.1895	10:36:37	21-Jul-09	15.6
255	15.2	28.7	65	0.2065	10:37:37	21-Jul-09	15.6
256	15.8	28.8	65	0.2148	10:38:37	21-Jul-09	15.5
257	15.3	28.9	64	0.1912	10:39:37	21-Jul-09	15.5
258	14.6	28.9	64	0.2011	10:40:37	21-Jul-09	15.4
259	14.8	29	64	0.1768	10:41:37	21-Jul-09	15.4
260	14.1	29	64	0.1726	10:42:37	21-Jul-09	15.3
261	14.7	29.1	64	0.1693	10:43:37	21-Jul-09	15.2
262	14.5	29.2	64	0.1652	10:44:37	21-Jul-09	15.1
263	14.6	29.2	64	0.1855	10:45:37	21-Jul-09	15.0
264	15.3	29.2	63	0.1937	10:46:37	21-Jul-09	15.0
265	14.7	29.3	63	0.1696	10:47:37	21-Jul-09	15.0
266	14.9	29.4	63	0.1753	10:48:37	21-Jul-09	15.0
267	15.6	29.4	63	0.1882	10:49:37	21-Jul-09	15.0
268	15.4	29.5	63	0.1912	10:50:37	21-Jul-09	15.0
269	14.8	29.5	63	0.1749	10:51:37	21-Jul-09	15.0
270	15	29.6	62	0.1759	10:52:37	21-Jul-09	15.0
271	26.6	29.6	62	0.2344	10:53:37	21-Jul-09	15.7
272	16.1	29.7	62	0.2044	10:54:37	21-Jul-09	15.7
273	15.9	29.7	62	0.2034	10:55:37	21-Jul-09	15.7
274	16.3	29.8	62	0.1879	10:56:37	21-Jul-09	15.8
275	25.7	29.8	62	0.2283	10:57:37	21-Jul-09	16.5

DataRam 4 Dust Monitor, Serial Number D464

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
174	18.1	23.5	70	0.3196	9:18:54	21-Jul-09	16.3
175	17.4	23.5	70	0.3273	9:19:54	21-Jul-09	16.4
176	16.6	23.6	70	0.3017	9:20:54	21-Jul-09	16.5
177	16.8	23.6	70	0.3014	9:21:54	21-Jul-09	16.6
178	17.4	23.6	70	0.3623	9:22:54	21-Jul-09	16.8
179	18.2	23.7	70	0.37	9:23:54	21-Jul-09	17.0
180	17.1	23.7	70	0.3749	9:24:54	21-Jul-09	17.1
181	17	23.8	70	0.3305	9:25:54	21-Jul-09	17.1
182	16.9	23.8	70	0.2878	9:26:54	21-Jul-09	17.3
183	16.5	23.9	69	0.3166	9:27:54	21-Jul-09	17.3
184	17.1	23.9	69	0.2926	9:28:54	21-Jul-09	17.3
185	16.4	23.9	69	0.3043	9:29:54	21-Jul-09	17.3
186	16.6	24	69	0.3087	9:30:54	21-Jul-09	17.3
187	16.4	24.1	69	0.3196	9:31:54	21-Jul-09	17.2
188	16.4	24.1	69	0.2929	9:32:54	21-Jul-09	17.0
189	16.3	24.1	69	0.317	9:33:54	21-Jul-09	17.0
190	16.7	24.2	69	0.3272	9:34:54	21-Jul-09	16.9
191	16.2	24.2	68	0.3368	9:35:54	21-Jul-09	16.8
192	15.3	24.3	68	0.2711	9:36:54	21-Jul-09	16.7
193	15	24.3	68	0.2933	9:37:54	21-Jul-09	16.6
194	16	24.4	68	0.3002	9:38:54	21-Jul-09	16.5
195	15.3	24.4	68	0.2861	9:39:54	21-Jul-09	16.3
196	16.1	24.5	68	0.3006	9:40:54	21-Jul-09	16.3
197	15	24.5	67	0.2938	9:41:54	21-Jul-09	16.1
198	15.6	24.5	68	0.3265	9:42:54	21-Jul-09	16.1
199	15.3	24.6	67	0.3308	9:43:54	21-Jul-09	16.0
200	15	24.6	67	0.3248	9:44:54	21-Jul-09	15.9
201	17.7	24.6	67	0.3389	9:45:54	21-Jul-09	15.9
202	16.1	24.7	67	0.3248	9:46:54	21-Jul-09	15.9
203	14.6	24.7	67	0.2876	9:47:54	21-Jul-09	15.8
204	13	24.8	67	0.2304	9:48:54	21-Jul-09	15.6
205	13.5	24.8	67	0.2687	9:49:54	21-Jul-09	15.4
206	13.4	24.9	67	0.2471	9:50:54	21-Jul-09	15.2
207	13.1	24.9	67	0.2724	9:51:54	21-Jul-09	15.0
208	13.7	24.9	67	0.2534	9:52:54	21-Jul-09	14.9
209	12.8	25	67	0.2486	9:53:54	21-Jul-09	14.8
210	14.2	25	67	0.3179	9:54:54	21-Jul-09	14.7
211	13.6	25.1	66	0.2827	9:55:54	21-Jul-09	14.5
212	13.6	25.1	67	0.272	9:56:54	21-Jul-09	14.4
213	13.6	25.1	66	0.2588	9:57:54	21-Jul-09	14.3
214	13.1	25.1	66	0.2439	9:58:54	21-Jul-09	14.1
215	13	25.2	66	0.2491	9:59:54	21-Jul-09	14.0
216	12.6	25.2	66	0.2353	10:00:54	21-Jul-09	13.9
217	13.8	25.2	66	0.3106	10:01:54	21-Jul-09	13.6
218	12.9	25.3	66	0.2737	10:02:54	21-Jul-09	13.4
219	12.6	25.3	66	0.251	10:03:54	21-Jul-09	13.3
220	11.6	25.3	66	0.2049	10:04:54	21-Jul-09	13.2
221	12.1	25.4	66	0.2404	10:05:54	21-Jul-09	13.1
222	12.1	25.4	66	0.2323	10:06:54	21-Jul-09	13.0
223	12	25.4	66	0.2294	10:07:54	21-Jul-09	13.0
224	11.5	25.5	66	0.2302	10:08:54	21-Jul-09	12.8
225	12.1	25.5	66	0.2296	10:09:54	21-Jul-09	12.8
226	12.2	25.5	65	0.2348	10:10:54	21-Jul-09	12.7
227	11.8	25.5	65	0.2395	10:11:54	21-Jul-09	12.5
228	11.9	25.6	65	0.2559	10:12:54	21-Jul-09	12.4
229	12.2	25.6	65	0.2618	10:13:54	21-Jul-09	12.3
230	11.3	25.6	65	0.2388	10:14:54	21-Jul-09	12.2
231	11.4	25.7	65	0.2225	10:15:54	21-Jul-09	12.1
232	11.7	25.7	65	0.2541	10:16:54	21-Jul-09	12.1
233	11.9	25.7	65	0.2701	10:17:54	21-Jul-09	12.0
234	12.1	25.8	65	0.278	10:18:54	21-Jul-09	11.9
235	11.4	25.8	65	0.2519	10:19:54	21-Jul-09	11.8
236	11.2	25.9	65	0.2613	10:20:54	21-Jul-09	11.8
237	10	25.9	65	0.2165	10:21:54	21-Jul-09	11.7
238	9.8	26	64	0.227	10:22:54	21-Jul-09	11.5
239	10.6	26	64	0.2531	10:23:54	21-Jul-09	11.4
240	11	26	64	0.2675	10:24:54	21-Jul-09	11.4
241	11.5	26.1	64	0.306	10:25:54	21-Jul-09	11.4
242	11.2	26.1	64	0.2719	10:26:54	21-Jul-09	11.3
243	10.3	26.1	64	0.2761	10:27:54	21-Jul-09	11.2
244	10.6	26.2	64	0.2398	10:28:54	21-Jul-09	11.1
245	10.6	26.2	64	0.2495	10:29:54	21-Jul-09	11.0
246	10.6	26.2	64	0.2546	10:30:54	21-Jul-09	11.0
247	10.8	26.3	63	0.2539	10:31:54	21-Jul-09	11.0
248	11.4	26.3	63	0.2888	10:32:54	21-Jul-09	10.9
249	11.1	26.4	63	0.2625	10:33:54	21-Jul-09	10.9
250	10.3	26.4	63	0.2452	10:34:54	21-Jul-09	10.8
251	10.7	26.5	63	0.2447	10:35:54	21-Jul-09	10.7
252	9.7	26.5	63	0.2397	10:36:54	21-Jul-09	10.6
253	9.7	26.5	63	0.2347	10:37:54	21-Jul-09	10.6
254	10	26.6	63	0.2328	10:38:54	21-Jul-09	10.6
255	10.4	26.6	63	0.2503	10:39:54	21-Jul-09	10.6
256	10.2	26.7	62	0.2665	10:40:54	21-Jul-09	10.6
257	9.6	26.7	62	0.245	10:41:54	21-Jul-09	10.5
258	9.7	26.7	62	0.2324	10:42:54	21-Jul-09	10.4
259	9.8	26.8	62	0.2267	10:43:54	21-Jul-09	10.3
260	10.6	26.9	62	0.2504	10:44:54	21-Jul-09	10.3
261	11	26.9	62	0.2608	10:45:54	21-Jul-09	10.4
262	10.7	26.9	61	0.2963	10:46:54	21-Jul-09	10.4
263	10.9	27	61	0.2762	10:47:54	21-Jul-09	10.4
264	9.8	27	61	0.2813	10:48:54	21-Jul-09	10.3
265	9.6	27.1	61	0.24	10:49:54	21-Jul-09	10.2
266	10.3	27.1	61	0.2507	10:50:54	21-Jul-09	10.2
267	10.3	27.1	61	0.2529	10:51:54	21-Jul-09	10.1
268	10.5	27.2	61	0.2673	10:52:54	21-Jul-09	10.2
269	10.5	27.2	61	0.2588	10:53:54	21-Jul-09	10.2
270	11.5	27.3	61	0.2539	10:54:54	21-Jul-09	10.3
271	11.2	27.3	60	0.2805	10:55:54	21-Jul-09	10.4
272	10.3	27.4	60	0.2457	10:56:54	21-Jul-09	10.4
273	12.7	27.4	60	0.2727	10:57:54	21-Jul-09	10.6

Appendix I
Ambient Air Dust Monitoring Results - SEAD-12 Removal Action

Seneca Army Depot Activity
Romulus, NY

DataRam 4 Dust Monitor, Serial Number D454

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
276	30.2	29.9	62	0.2713	10:58:37	21-Jul-09	17.5
277	17	29.9	61	0.2129	10:59:37	21-Jul-09	17.7
278	16.6	29.9	61	0.2003	11:00:37	21-Jul-09	17.8
279	15.2	30	61	0.1919	11:01:37	21-Jul-09	17.8
280	15.1	30.1	61	0.1692	11:02:37	21-Jul-09	17.8
281	15	30.1	61	0.1814	11:03:37	21-Jul-09	17.8
282	14.3	30.1	61	0.1636	11:04:37	21-Jul-09	17.8
283	16.7	30.2	60	0.1878	11:05:37	21-Jul-09	17.9
284	15.8	30.2	60	0.1756	11:06:37	21-Jul-09	17.9
285	15.1	30.3	60	0.1511	11:07:37	21-Jul-09	17.9
286	15.2	30.3	60	0.1669	11:08:37	21-Jul-09	17.9
287	15	30.4	60	0.1579	11:09:37	21-Jul-09	17.2
288	15.3	30.4	60	0.1657	11:10:37	21-Jul-09	17.2
289	14.3	30.5	59	0.1547	11:11:37	21-Jul-09	17.1
290	14.3	30.5	59	0.1581	11:12:37	21-Jul-09	16.9
291	14.7	30.6	59	0.1535	11:13:37	21-Jul-09	16.2
292	14.9	30.6	59	0.163	11:14:37	21-Jul-09	15.3
293	14.6	30.7	59	0.1509	11:15:37	21-Jul-09	15.1
294	14	30.7	59	0.1503	11:16:37	21-Jul-09	15.0
295	14.1	30.8	59	0.144	11:17:37	21-Jul-09	14.9
296	13.8	30.9	59	0.1403	11:18:37	21-Jul-09	14.8
297	14	31	58	0.1477	11:19:37	21-Jul-09	14.8
298	14.1	31	58	0.1566	11:20:37	21-Jul-09	14.7
299	14	31.1	58	0.1346	11:21:37	21-Jul-09	14.6
300	14.2	31.1	58	0.1313	11:22:37	21-Jul-09	14.5
301	16.1	31.2	58	0.1666	11:23:37	21-Jul-09	14.5
302	14.6	31.3	58	0.1383	11:24:37	21-Jul-09	14.5
303	16.3	31.4	57	0.1488	11:25:37	21-Jul-09	14.6
304	22.4	31.4	57	0.2638	11:26:37	21-Jul-09	15.0
305	16.4	31.5	57	0.1528	11:27:37	21-Jul-09	15.2
306	14.6	31.6	57	0.1413	11:28:37	21-Jul-09	15.2
307	14.3	31.6	56	0.1283	11:29:37	21-Jul-09	15.2
308	14.1	31.6	56	0.1292	11:30:37	21-Jul-09	15.1
309	16	31.7	56	0.1359	11:31:37	21-Jul-09	15.2
310	20.5	31.8	56	0.1621	11:32:37	21-Jul-09	15.6
311	22.4	31.9	56	0.2139	11:33:37	21-Jul-09	16.1
312	14.9	31.9	56	0.1597	11:34:37	21-Jul-09	16.2
313	14.8	32	56	0.1358	11:35:37	21-Jul-09	16.2
314	15.3	32	56	0.145	11:36:37	21-Jul-09	16.3
315	14.5	32.1	56	0.1365	11:37:37	21-Jul-09	16.3
316	15.7	32.1	56	0.148	11:38:37	21-Jul-09	16.4
317	24.8	32.2	56	0.1943	11:39:37	21-Jul-09	17.0
318	16.2	32.2	55	0.1596	11:40:37	21-Jul-09	17.1
319	15.2	32.3	55	0.1371	11:41:37	21-Jul-09	17.0
320	14.9	32.4	55	0.1282	11:42:37	21-Jul-09	16.5
321	15.7	32.5	55	0.1279	11:43:37	21-Jul-09	16.5
322	16	32.5	54	0.1361	11:44:37	21-Jul-09	16.6
323	15.6	32.6	54	0.1212	11:45:37	21-Jul-09	16.7
324	16	32.6	54	0.137	11:46:37	21-Jul-09	16.8
325	15.5	32.7	54	0.1328	11:47:37	21-Jul-09	16.8
326	14.8	32.7	54	0.1288	11:48:37	21-Jul-09	16.4
327	18.9	32.8	54	0.1432	11:49:37	21-Jul-09	16.2
328	16	32.8	54	0.1519	11:50:37	21-Jul-09	16.2
329	15.2	32.9	53	0.1341	11:51:37	21-Jul-09	16.3
330	16	33	53	0.1373	11:52:37	21-Jul-09	16.3
331	15.9	33	53	0.1437	11:53:37	21-Jul-09	16.4
332	15.1	33.1	53	0.1273	11:54:37	21-Jul-09	16.4
333	15.5	33.1	53	0.147	11:55:37	21-Jul-09	15.8
334	16.4	33.1	53	0.1537	11:56:37	21-Jul-09	15.8
335	16.4	33.2	53	0.1424	11:57:37	21-Jul-09	15.9
336	16.8	33.2	53	0.1589	11:58:37	21-Jul-09	16.0
337	17.7	33.3	53	0.1552	11:59:37	21-Jul-09	16.1
338	18.1	33.4	52	0.1665	12:00:37	21-Jul-09	16.2
339	18.2	33.4	52	0.1744	12:01:37	21-Jul-09	16.4
340	19	33.5	52	0.1647	12:02:37	21-Jul-09	16.6
341	18.6	33.5	52	0.1866	12:03:37	21-Jul-09	16.8
342	16.1	33.5	52	0.1481	12:04:37	21-Jul-09	16.9
343	16.1	33.6	52	0.1484	12:05:37	21-Jul-09	16.7
344	16.1	33.6	52	0.1362	12:06:37	21-Jul-09	16.7
345	16.4	33.7	52	0.1448	12:07:37	21-Jul-09	16.8
346	20.5	33.7	52	0.173	12:08:37	21-Jul-09	17.1
347	23.1	33.8	52	0.1817	12:09:37	21-Jul-09	17.5
348	17.3	33.8	51	0.1581	12:10:37	21-Jul-09	17.6
349	16.2	33.9	51	0.1278	12:11:37	21-Jul-09	17.7
350	16.6	34	51	0.1338	12:12:37	21-Jul-09	17.7
351	16.4	34	51	0.1338	12:13:37	21-Jul-09	17.7
352	15.9	34	51	0.1344	12:14:37	21-Jul-09	17.6
353	16.7	34.1	51	0.1421	12:15:37	21-Jul-09	17.6
354	17.5	34.1	51	0.1549	12:16:37	21-Jul-09	17.5
355	16.2	34.1	51	0.1367	12:17:37	21-Jul-09	17.4
356	16.3	34.2	50	0.1316	12:18:37	21-Jul-09	17.3
357	16.9	34.2	51	0.1521	12:19:37	21-Jul-09	17.1
358	17.6	34.3	51	0.1414	12:20:37	21-Jul-09	17.2
359	16.5	34.3	50	0.1264	12:21:37	21-Jul-09	17.3
360	16.7	34.4	50	0.1241	12:22:37	21-Jul-09	17.3
361	16.9	34.4	50	0.1267	12:23:37	21-Jul-09	17.3
362	16.8	34.5	50	0.1301	12:24:37	21-Jul-09	17.1
363	17.3	34.5	50	0.1241	12:25:37	21-Jul-09	16.7
364	17.1	34.6	50	0.1374	12:26:37	21-Jul-09	16.7
365	16.4	34.6	50	0.1236	12:27:37	21-Jul-09	16.7
366	21.8	34.6	50	0.1457	12:28:37	21-Jul-09	17.1
367	22.5	34.7	49	0.1629	12:29:37	21-Jul-09	17.4
368	19.6	34.7	49	0.145	12:30:37	21-Jul-09	17.7
369	20.9	34.8	49	0.148	12:31:37	21-Jul-09	17.9
370	19.6	34.8	49	0.1676	12:32:37	21-Jul-09	18.1
371	31.7	34.9	49	0.2414	12:33:37	21-Jul-09	19.0
372	20.5	34.9	48	0.1674	12:34:37	21-Jul-09	19.3
373	19.6	35	48	0.1384	12:35:37	21-Jul-09	19.5
374	18.8	35	48	0.1388	12:36:37	21-Jul-09	19.5
375	20.2	35.1	48	0.1349	12:37:37	21-Jul-09	19.8

DataRam 4 Dust Monitor, Serial Number D464

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
274	12.3	27.5	60	0.3078	10:58:54	21-Jul-09	10.8
275	10.9	27.5	60	0.2359	10:59:54	21-Jul-09	10.8
276	11.2	27.6	60	0.237	11:00:54	21-Jul-09	10.9
277	12.1	27.6	60	0.2556	11:01:54	21-Jul-09	10.9
278	13	27.7	59	0.3551	11:02:54	21-Jul-09	11.1
279	10.5	27.7	59	0.2506	11:03:54	21-Jul-09	11.0
280	11.1	27.8	59	0.2668	11:04:54	21-Jul-09	11.1
281	10.2	27.8	59	0.2585	11:05:54	21-Jul-09	11.2
282	10.4	27.9	59	0.2552	11:06:54	21-Jul-09	11.2
283	10.1	28	59	0.2386	11:07:54	21-Jul-09	11.2
284	9.6	28	59	0.2246	11:08:54	21-Jul-09	11.1
285	9.8	28.1	59	0.2486	11:09:54	21-Jul-09	11.1
286	9.9	28.2	59	0.2419	11:10:54	21-Jul-09	11.0
287	9.9	28.2	58	0.2375	11:11:54	21-Jul-09	10.9
288	9.9	28.3	58	0.2203	11:12:54	21-Jul-09	10.9
289	9.7	28.4	58	0.2305	11:13:54	21-Jul-09	10.7
290	8.9	28.4	58	0.2031	11:14:54	21-Jul-09	10.5
291	9.5	28.5	58	0.2335	11:15:54	21-Jul-09	10.4
292	8.7	28.6	57	0.213	11:16:54	21-Jul-09	10.2
293	10	28.7	57	0.2413	11:17:54	21-Jul-09	10.1
294	10	28.7	57	0.2209	11:18:54	21-Jul-09	9.9
295	9	28.8	57	0.2127	11:19:54	21-Jul-09	9.8
296	10.2	28.9	57	0.2051	11:20:54	21-Jul-09	9.7
297	9.5	29	57	0.2193	11:21:54	21-Jul-09	9.7
298	9.1	29.1	57	0.2098	11:22:54	21-Jul-09	9.6
299	9.2	29.1	56	0.2207	11:23:54	21-Jul-09	9.6
300	9.4	29.2	56	0.2433	11:24:54	21-Jul-09	9.5
301	8.7	29.3	56	0.1985	11:25:54	21-Jul-09	9.5
302	9.5	29.4	56	0.2033	11:26:54	21-Jul-09	9.5
303	9.2	29.5	55	0.2167	11:27:54	21-Jul-09	9.4
304	8.7	29.5	55	0.193	11:28:54	21-Jul-09	9.3
305	10.5	29.6	55	0.2179	11:29:54	21-Jul-09	9.4
306	10.4	29.7	55	0.2586	11:30:54	21-Jul-09	9.5
307	9.4	29.7	55	0.2174	11:31:54	21-Jul-09	9.5
308	9.4	29.8	55	0.2224	11:32:54	21-Jul-09	9.5
309	9	29.9	55	0.2133	11:33:54	21-Jul-09	9.5
310	8.5	30	54	0.2044	11:34:54	21-Jul-09	9.4
311	9	30	54	0.2178	11:35:54	21-Jul-09	9.4
312	9.8	30.1	54	0.2209	11:36:54	21-Jul-09	9.3
313	10	30.2	54	0.2351	11:37:54	21-Jul-09	9.4
314	9.5	30.2	54	0.2106	11:38:54	21-Jul-09	9.4
315	9.7	30.3	54	0.2002	11:39:54	21-Jul-09	9.4
316	9.7	30.4	54	0.182	11:40:54	21-Jul-09	9.4
317	10	30.5	53	0.2209	11:41:54	21-Jul-09	9.5
318	9.8	30.6	53	0.2143	11:42:54	21-Jul-09	9.5
319	10	30.6	53	0.207	11:43:54	21-Jul-09	9.6
320	10.4	30.7	52	0.2272	11:44:54	21-Jul-09	9.7
321	10.6	30.7	53	0.207	11:45:54	21-Jul-09	9.7
322	9.8	30.8	52	0.196	11:46:54	21-Jul-09	9.7
323	15.9	30.9	52	0.2911	11:47:54	21-Jul-09	10.1
324	12.8	31	22	0.373	11:48:54	21-Jul-09	10.3
325	28.3	31	36	0.2885	11:49:54	21-Jul-09	11.5
326	10.3	31.1	51	0.2235	11:50:54	21-Jul-09	11.6
327	10.1	31.2	52	0.2058	11:51:54	21-Jul-09	11.7
328	10.2	31.2	51	0.204	11:52:54	21-Jul-09	11.7
329	10.3	31.3	51	0.213	11:53:54	21-Jul-09	11.7
330	10.3	31.4	51	0.2299	11:54:54	21-Jul-09	11.8
331	10.2	31.4	51	0.192	11:55:54	21-Jul-09	11.8
332	9.6	31.5	50	0.1898	11:56:54	21-Jul-09	11.8
333	10.1	31.6	50	0.1967	11:57:54	21-Jul-09	11.8
334	10.7	31.6	50	0.2121	11:58:54	21-Jul-09	11.9
335	9.7	31.7	50	0.1999	11:59:54	21-Jul-09	11.8
336	10.7	31.8	50	0.1965	12:00:54	21-Jul-09	11.9
337	11	31.9	50	0.2102	12:01:54	21-Jul-09	11.9
338	11.4	31.9	49	0.2425	12:02:54	21-Jul-09	12.0
339	11.7	32	49	0.1974	12:03:54	21-Jul-09	11.7
340	25.8	32.1	49	0.4341	12:04:54	21-Jul-09	12.5
341	10.9	32.1	49	0.2457	12:05:54	21-Jul-09	11.4
342	11.1	32.1	49	0.2525	12:06:54	21-Jul-09	11.5
343	11.1	32.2	49	0.2322	12:07:54	21-Jul-09	11.6
344	10.7	32.2	49	0.2286	12:08:54	21-Jul-09	11.6
345	10.9	32.3	48	0.2051	12:09:54	21-Jul-09	11.6
346	10.6	32.4	48	0.2091	12:10:54	21-Jul-09	11.6
347	11.4	32.4	48	0.2332	12:11:54	21-Jul-09	11.7
348	11	32.4	48	0.2217	12:12:54	21-Jul-09	11.8
349	10.9	32.5	48	0.1942	12:13:54	21-Jul-09	11.9
350	14.2	32.5	48	0.2646	12:14:54	21-Jul-09	12.1
351	47.8	32.6	48	0.3588	12:15:54	21-Jul-09	14.5
352	26.8	32.6	48	0.4419	12:16:54	21-Jul-09	15.5
353	19.3	32.7	47	0.3031	12:17:54	21-Jul-09	16.0
354	21.1	32.7	47	0.3558	12:18:54	21-Jul-09	16.6
355	17.3	32.8	47	0.2494	12:19:54	21-Jul-09	16.9
356	15.2	32.8	47	0.2904	12:20:54	21-Jul-09	16.3
357	14.1	32.9	47	0.2879	12:21:54	21-Jul-09	16.5
358	12.5	32.9	47	0.2023	12:22:54	21-Jul-09	16.6
359	13.5	33	47	0.1941	12:23:54	21-Jul-09	16.7
360	12.8	33	46	0.2076	12:24:54	21-Jul-09	16.8
361	12.5	33.1	46	0.1684	12:25:54	21-Jul-09	16.9
362	17	33.1	46	0.2955	12:26:54	21-Jul-09	17.3
363	13.5	33.1	46	0.245	12:27:54	21-Jul-09	17.5
364	12.7	33.2	45	0.2121	12:28:54	21-Jul-09	17.6
365	13	33.2	45	0.2159	12:29:54	21-Jul-09	17.7
366	11.9	33.3	45	0.1689	12:30:54	21-Jul-09	17.6
367	68.9	33.3	45	0.457	12:31:54	21-Jul-09	18.9
368	15.8	33.4	45	0.3477	12:32:54	21-Jul-09	18.2
369	13.2	33.4	45	0.2026	12:33:54	21-Jul-09	17.8
370	13	33.4	45	0.2179	12:34:54	21-Jul-09	17.3
371	12.9	33.5	45	0.205	12:35:54	21-Jul-09	17.0
372	13.4	33.5	45	0.2186	12:36:54	21-Jul-09	16.9
373	14.8	33.5	45	0.225	12:37:54	21-Jul-09	17.0

Appendix I
Ambient Air Dust Monitoring Results - SEAD-12 Removal Action

Seneca Army Depot Activity
Romulus, NY

DataRam 4 Dust Monitor, Serial Number D454

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
376	22	35.1	48	0.146	12:38:37	21-Jul-09	20.1
377	20.6	35.1	48	0.1539	12:39:37	21-Jul-09	20.3
378	20.9	35.2	48	0.1332	12:40:37	21-Jul-09	20.6
379	20.1	35.2	48	0.1313	12:41:37	21-Jul-09	20.8
380	20.5	35.3	47	0.1554	12:42:37	21-Jul-09	21.0
381	19.7	35.3	47	0.1417	12:43:37	21-Jul-09	21.2
382	20.6	35.4	47	0.149	12:44:37	21-Jul-09	21.1
383	21.9	35.4	47	0.1688	12:45:37	21-Jul-09	21.1
384	21.7	35.5	47	0.1516	12:46:37	21-Jul-09	21.2
385	22	35.5	47	0.1648	12:47:37	21-Jul-09	21.3
386	27.1	35.5	47	0.1568	12:48:37	21-Jul-09	21.7
387	61.4	35.6	47	0.327	12:49:37	21-Jul-09	23.6
388	21.2	35.6	47	0.1745	12:50:37	21-Jul-09	23.6
389	20	35.7	46	0.1373	12:51:37	21-Jul-09	23.7
390	22.1	35.7	46	0.1495	12:52:37	21-Jul-09	23.9
391	21.3	35.8	46	0.1439	12:53:37	21-Jul-09	23.9
392	19.6	35.9	46	0.1245	12:54:37	21-Jul-09	23.8
393	24	35.9	46	0.1546	12:55:37	21-Jul-09	24.0
394	29	36	46	0.1792	12:56:37	21-Jul-09	24.5
395	21.4	36.1	45	0.158	12:57:37	21-Jul-09	24.6
396	24.6	36.1	45	0.1694	12:58:37	21-Jul-09	24.9
397	20.7	36.1	45	0.1394	12:59:37	21-Jul-09	24.9
398	26.9	36.2	45	0.1552	13:00:37	21-Jul-09	25.3
399	24.2	36.3	45	0.1622	13:01:37	21-Jul-09	25.5
400	21.1	36.3	45	0.1365	13:02:37	21-Jul-09	25.4
401	20.8	36.4	45	0.1241	13:03:37	21-Jul-09	25.3
402	28.9	36.5	44	0.1519	13:04:37	21-Jul-09	25.5
403	30.6	36.5	44	0.1885	13:05:37	21-Jul-09	23.5
404	30	36.5	44	0.2014	13:06:37	21-Jul-09	24.1
405	37.4	36.6	44	0.1935	13:07:37	21-Jul-09	25.2
406	31.7	37.1	44	0.1858	13:08:37	21-Jul-09	25.8
407	28.3	37.5	45	0.1586	13:09:37	21-Jul-09	26.2
408	28	38	45	0.1495	13:10:37	21-Jul-09	26.7
409	34.1	38.7	46	0.1949	13:11:37	21-Jul-09	27.4
410	32.9	39.5	46	0.1776	13:12:37	21-Jul-09	27.6
411	37	41	47	0.1907	13:13:37	21-Jul-09	28.6
412	32.2	43.4	49	0.1948	13:14:37	21-Jul-09	29.1
413	28.8	43.6	49	0.1574	13:15:37	21-Jul-09	29.6
414	30.2	43.7	49	0.1527	13:16:37	21-Jul-09	29.8
415	32.7	43.8	49	0.1708	13:17:37	21-Jul-09	30.3
416	29.9	43.9	49	0.1642	13:18:37	21-Jul-09	30.8
417	34.4	43.8	49	0.1845	13:19:37	21-Jul-09	31.7
418	38.1	43.9	49	0.2024	13:20:37	21-Jul-09	32.3
419	36.2	44	49	0.1981	13:21:37	21-Jul-09	32.6
420	39.2	44.1	49	0.1906	13:22:37	21-Jul-09	33.2
421	38.6	44.1	49	0.1911	13:23:37	21-Jul-09	33.3
422	42.6	44.3	48	0.256	13:24:37	21-Jul-09	34.0
423	32	44.3	48	0.1751	13:25:37	21-Jul-09	34.2
424	34.1	44.4	48	0.1751	13:26:37	21-Jul-09	34.6
425	31.7	44.5	48	0.1764	13:27:37	21-Jul-09	34.4
426	35	44.6	48	0.1999	13:28:37	21-Jul-09	34.5
427	34.6	44.7	48	0.1987	13:29:37	21-Jul-09	34.4
428	29.4	44.8	48	0.1668	13:30:37	21-Jul-09	34.2
429	29.9	44.9	48	0.1534	13:31:37	21-Jul-09	34.3
430	26.4	45	48	0.1575	13:32:37	21-Jul-09	34.1
431	24.5	45.1	48	0.1437	13:33:37	21-Jul-09	33.5
432	25.9	45.1	47	0.1586	13:34:37	21-Jul-09	33.3
433	24.5	45.2	48	0.1397	13:35:37	21-Jul-09	32.7
434	24.2	45.3	48	0.1424	13:36:37	21-Jul-09	31.8
435	23.1	45.4	47	0.1254	13:37:37	21-Jul-09	31.0
436	25.4	45.4	47	0.1411	13:38:37	21-Jul-09	30.1
437	31.9	45.5	47	0.1779	13:39:37	21-Jul-09	29.7
438	30.8	45.6	47	0.1646	13:40:37	21-Jul-09	29.0
439	30.2	45.7	47	0.1542	13:41:37	21-Jul-09	28.9
440	33.6	45.8	47	0.1739	13:42:37	21-Jul-09	28.8
441	31.5	45.9	47	0.1613	13:43:37	21-Jul-09	28.8
442	30.5	46.1	47	0.1599	13:44:37	21-Jul-09	28.5
443	31	46.2	47	0.1603	13:45:37	21-Jul-09	28.3
444	29.8	46.6	48	0.1545	13:46:37	21-Jul-09	28.3
445	33.7	46.8	48	0.1705	13:47:37	21-Jul-09	28.6
446	42.6	47.2	48	0.2397	13:48:37	21-Jul-09	29.6
447	29.1	47.8	48	0.1746	13:49:37	21-Jul-09	29.9
448	30.2	48.1	48	0.1702	13:50:37	21-Jul-09	30.1
449	28.5	48.5	48	0.1582	13:51:37	21-Jul-09	30.4
450	45	49.1	49	0.2016	13:52:37	21-Jul-09	31.7
451	34.8	49.5	49	0.1793	13:53:37	21-Jul-09	32.4
452	34	49.5	49	0.1794	13:54:37	21-Jul-09	33.0
453	39.1	49.9	49	0.2135	13:55:37	21-Jul-09	33.4
454	33.9	49.9	49	0.1733	13:56:37	21-Jul-09	33.6
455	39.6	50.1	49	0.1919	13:57:37	21-Jul-09	34.2
456	34.7	49.7	49	0.182	13:58:37	21-Jul-09	34.3
457	33.3	49.9	49	0.1616	13:59:37	21-Jul-09	34.4
458	30.5	50.1	49	0.1581	14:00:37	21-Jul-09	34.4
459	31.9	50	49	0.1545	14:01:37	21-Jul-09	34.4
460	34.9	47.8	47	0.1661	14:02:37	21-Jul-09	34.7
461	33.3	48	48	0.1675	14:03:37	21-Jul-09	34.7
462	36.5	48.3	48	0.182	14:04:37	21-Jul-09	34.3
463	29.2	48.6	48	0.1577	14:05:37	21-Jul-09	34.3
464	29.5	48.7	48	0.1628	14:06:37	21-Jul-09	34.3
465	30.5	49.1	48	0.165	14:07:37	21-Jul-09	34.4
466	29.5	49.6	48	0.1589	14:08:37	21-Jul-09	33.5
467	28.7	50.6	49	0.1481	14:09:37	21-Jul-09	33.1
468	24.3	50.3	49	0.1379	14:10:37	21-Jul-09	32.5
469	25	50.1	49	0.1409	14:11:37	21-Jul-09	31.6
470	26.8	51	49	0.148	14:12:37	21-Jul-09	31.1
471	32.8	51	50	0.1558	14:13:37	21-Jul-09	30.7
472	30.2	49.8	49	0.1726	14:14:37	21-Jul-09	30.4
473	34.8	48.9	48	0.1635	14:15:37	21-Jul-09	30.5
474	28.6	48.6	47	0.1749	14:16:37	21-Jul-09	30.4
475	23.9	48.6	47	0.1459	14:17:37	21-Jul-09	29.9

DataRam 4 Dust Monitor, Serial Number D464

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
374	13.2	33.6	44	0.2182	12:38:54	21-Jul-09	17.0
375	13.4	33.6	44	0.2122	12:39:54	21-Jul-09	17.0
376	14.5	33.7	44	0.2557	12:40:54	21-Jul-09	17.1
377	12.8	33.7	44	0.2227	12:41:54	21-Jul-09	17.1
378	14.4	33.7	44	0.2079	12:42:54	21-Jul-09	17.0
379	16.1	33.8	44	0.2597	12:43:54	21-Jul-09	17.1
380	16.8	33.8	44	0.2893	12:44:54	21-Jul-09	17.4
381	13.3	33.9	44	0.2407	12:45:54	21-Jul-09	17.4
382	13.4	33.9	44	0.2007	12:46:54	21-Jul-09	17.5
383	25.7	34	44	0.3194	12:47:54	21-Jul-09	14.8
384	22.5	34	44	0.4317	12:48:54	21-Jul-09	15.2
385	12.7	34.1	44	0.1904	12:49:54	21-Jul-09	15.2
386	12.7	34.1	43	0.1848	12:50:54	21-Jul-09	15.2
387	12.5	34.2	43	0.1912	12:51:54	21-Jul-09	15.1
388	15.1	34.2	43	0.2321	12:52:54	21-Jul-09	15.2
389	14.3	34.3	43	0.2387	12:53:54	21-Jul-09	15.2
390	12	34.4	43	0.1798	12:54:54	21-Jul-09	15.1
391	12.3	34.5	43	0.1809	12:55:54	21-Jul-09	15.1
392	14.2	34.5	43	0.1703	12:56:54	21-Jul-09	15.1
393	16.1	34.6	42	0.2146	12:57:54	21-Jul-09	15.3
394	17.8	34.7	42	0.3084	12:58:54	21-Jul-09	15.5
395	15	34.7	42	0.2196	12:59:54	21-Jul-09	15.4
396	13	34.8	42	0.1999	13:00:54	21-Jul-09	15.2
397	12.3	34.9	42	0.1718	13:01:54	21-Jul-09	15.1
398	12.3	35	42	0.1842	13:02:54	21-Jul-09	15.0
399	13.2	35	41	0.2042	13:03:54	21-Jul-09	14.3
400	49.1	35.1	41	0.5927	13:04:54	21-Jul-09	15.9
401	18.5	35.1	41	0.2654	13:05:54	21-Jul-09	16.3
402	24.6	35.2	41	0.2898	13:06:54	21-Jul-09	17.0
403	21.4	35.2	41	0.2864	13:07:54	21-Jul-09	17.6
404	18.7	35.2	41	0.2532	13:08:54	21-Jul-09	17.8
405	41.1	35.3	41	0.3842	13:09:54	21-Jul-09	19.5
406	27	35.4	41	0.4753	13:10:54	21-Jul-09	20.4
407	23.3	35.4	41	0.3175	13:11:54	21-Jul-09	21.1
408	19.7	35.4	41	0.2703	13:12:54	21-Jul-09	21.4
409	20	35.5	41	0.2472	13:13:54	21-Jul-09	21.7
410	22.5	35.5	40	0.3039	13:14:54	21-Jul-09	22.0
411	21.4	35.5	40	0.2835	13:15:54	21-Jul-09	22.4
412	20.6	35.6	40	0.2755	13:16:54	21-Jul-09	22.9
413	20.2	35.6	41	0.2677	13:17:54	21-Jul-09	23.4
414	19.1	35.6	40	0.2654	13:18:54	21-Jul-09	23.8
415	28.2	35.7	40	0.3139	13:19:54	21-Jul-09	24.7
416	28.3	35.7	40	0.3931	13:20:54	21-Jul-09	23.4
417	27.8	35.7	40	0.3346	13:21:54	21-Jul-09	24.0
418	23.9	35.8	40	0.3043	13:22:54	21-Jul-09	24.0
419	21.1	35.8	40	0.2776	13:23:54	21-Jul-09	23.9
420	40.1	35.8	40	0.2871	13:24:54	21-Jul-09	25.3
421	28.1	35.8	39	0.4472	13:25:54	21-Jul-09	24.5
422	19.9	35.8	39	0.262	13:26:54	21-Jul-09	24.0
423	18.9	35.9	39	0.2567	13:27:54	21-Jul-09	23.7
424	18.7	35.9	39	0.2475	13:28:54	21-Jul-09	23.7
425	17.4	35.9	39	0.2469	13:29:54	21-Jul-09	23.5
426	18.1	35.9	39	0.2346	13:30:54	21-Jul-09	23.2
427	26.1	35.9	39	0.2932	13:31:54	21-Jul-09	23.5
428	18.5	35.9	39	0.3081	13:32:54	21-Jul-09	23.4
429	16.9	35.9	39	0.2401	13:33:54	21-Jul-09	23.2
430	15.9	35.9	39	0.2135	13:34:54	21-Jul-09	23.0
431	23	35.9	39	0.2711	13:35:54	21-Jul-09	22.7
432	19.2	35.9	39	0.272	13:36:54	21-Jul-09	22.1
433	19.4	35.9	39	0.2542	13:37:54	21-Jul-09	21.6
434	18.2	35.9	39	0.2399	13:38:54	21-Jul-09	21.2
435	16.8	35.9	39	0.2171	13:39:54	21-Jul-09	21.0
436	17	36	39	0.2194	13:40:54	21-Jul-09	19.5
437	31.2	36	39	0.2738	13:41:54	21-Jul-09	19.7
438	22.4	36	39	0.426	13:42:54	21-Jul-09	19.9
439	18.4	36	39	0.2399	13:43:54	21-Jul-09	19.8
440	17	36	39	0.2209	13:44:54	21-Jul-09	19.7
441	17.1	36	39	0.2097	13:45:54	21-Jul-09	19.7
442	18.4	36	39	0.2112	13:46:54	21-Jul-09	19.7
443	70.9	36	39	0.4459	13:47:54	21-Jul-09	22.5
444	19.1	36	39	0.2711	13:48:54	21-Jul-09	22.6
445	19.1	36	39	0.2314	13:49:54	21-Jul-09	22.7
446	19.1	36	39	0.2408	13:50:54	21-Jul-09	22.9
447	78.4	36	39	0.4871	13:51:54	21-Jul-09	26.4
448	20.8	36	39	0.331	13:52:54	21-Jul-09	26.5
449	18.3	36	39	0.2443	13:53:54	21-Jul-09	26.4
450	18	36	39	0.2323	13:54:54	21-Jul-09	26.4
451	17.8	36	39	0.234	13:55:54	21-Jul-09	26.4
452	93.9	36	39	0.6659	13:56:54	21-Jul-09	31.2
453	20.4	36	39	0.481	13:57:54	21-Jul-09	30.6
454	19.2	36	39	0.2516	13:58:54	21-Jul-09	30.4
455	18.4	36	39	0.232	13:59:54	21-Jul-09	30.4
456	18.6	36	39	0.2738	14:00:54	21-Jul-09	30.5
457	35.1	36	39	0.3915	14:01:54	21-Jul-09	31.6
458	20.1	36.1	39	0.2936	14:02:54	21-Jul-09	31.7
459	19.3	36	39	0.2417	14:03:54	21-Jul-09	28.5
460	20.1	36.1	39	0.2615	14:04:54	21-Jul-09	28.5
461	18.4	36.1	39	0.2377	14:05:54	21-Jul-09	28.5
462	59.1	36.1	38	0.659	14:06:54	21-Jul-09	31.0
463	20	36.1	39	0.3008	14:07:54	21-Jul-09	27.3
464	17.8	36	39	0.2275	14:08:54	21-Jul-09	27.2
465	18.5	36	38	0.2433	14:09:54	21-Jul-09	27.2
466	17.7	36	38	0.2358	14:10:54	21-Jul-09	27.2
467	17.2	36	38	0.2314	14:11:54	21-Jul-09	27.1
468	17.8	36	38	0.2423	14:12:54	21-Jul-09	22.4
469	16.8	36	39	0.2139	14:13:54	21-Jul-09	22.1
470	17.3	36	38	0.2155	14:14:54	21-Jul-09	22.0
471	42.1	36	39	0.4445	14:15:54	21-Jul-09	23.5
472	17.7	36	38	0.2773	14:16:54	21-Jul-09	23.4
473	17.5	35.9	38	0.2309	14:17:54	21-Jul-09	22.3

Appendix I
Ambient Air Dust Monitoring Results - SEAD-12 Removal Action

Seneca Army Depot Activity
Romulus, NY

DataRam 4 Dust Monitor, Serial Number D454

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
476	24	48.6	47	0.14	14:18:37	21-Jul-09	29.2
477	25.4	48.6	47	0.1396	14:19:37	21-Jul-09	28.7
478	23.8	48.5	48	0.1362	14:20:37	21-Jul-09	27.9
479	23	48.5	47	0.1308	14:21:37	21-Jul-09	27.6
480	33	48.5	48	0.1456	14:22:37	21-Jul-09	27.8
481	47.4	48.5	47	0.2629	14:23:37	21-Jul-09	28.8
482	29.6	48.3	47	0.1768	14:24:37	21-Jul-09	28.8
483	27.2	48.3	48	0.1373	14:25:37	21-Jul-09	28.7
484	26.3	48.3	48	0.1423	14:26:37	21-Jul-09	28.9
485	32	48.4	48	0.1981	14:27:37	21-Jul-09	29.3
486	35.5	48.4	48	0.201	14:28:37	21-Jul-09	29.8
487	29.2	48.2	48	0.1658	14:29:37	21-Jul-09	29.6
488	23.3	48.2	48	0.1356	14:30:37	21-Jul-09	29.2
489	23.6	48.2	48	0.1195	14:31:37	21-Jul-09	28.5
490	26.7	48.1	47	0.1569	14:32:37	21-Jul-09	28.4
491	24.5	48	47	0.1493	14:33:37	21-Jul-09	28.4
492	22.3	48.1	47	0.1182	14:34:37	21-Jul-09	28.3
493	21.7	48.2	47	0.1123	14:35:37	21-Jul-09	28.1
494	22.9	48.4	48	0.1356	14:36:37	21-Jul-09	28.0
495	21.3	48.2	48	0.1214	14:37:37	21-Jul-09	27.9
496	22	48.3	48	0.1209	14:38:37	21-Jul-09	27.2
497	23.4	48.2	48	0.1271	14:39:37	21-Jul-09	25.7
498	22.9	48.3	48	0.1278	14:40:37	21-Jul-09	25.3
499	22.5	48.4	48	0.1328	14:41:37	21-Jul-09	25.0
500	21.6	49.1	49	0.1183	14:42:37	21-Jul-09	24.7
501	21.8	49.3	49	0.1227	14:43:37	21-Jul-09	24.1
502	21.3	48.4	48	0.1136	14:44:37	21-Jul-09	23.2
503	20.6	48.5	48	0.1031	14:45:37	21-Jul-09	22.7
504	20.9	48.6	48	0.1167	14:46:37	21-Jul-09	22.5
505	20.2	48.6	47	0.1131	14:47:37	21-Jul-09	22.3
506	19.9	48.6	47	0.0973	14:48:37	21-Jul-09	21.9
507	20.6	48.6	46	0.1073	14:49:37	21-Jul-09	21.6
508	19.9	48.6	46	0.1075	14:50:37	21-Jul-09	21.5
509	19.6	48.6	46	0.1043	14:51:37	21-Jul-09	21.3
510	18.8	48.5	46	0.1007	14:52:37	21-Jul-09	21.1
511	18.9	48.5	46	0.0928	14:53:37	21-Jul-09	20.9
512	20.7	48.7	46	0.1137	14:54:37	21-Jul-09	20.9
513	20.2	50.3	47	0.1135	14:55:37	21-Jul-09	20.7
514	19.4	48.7	46	0.1039	14:56:37	21-Jul-09	20.4
515	20	48.7	46	0.1046	14:57:37	21-Jul-09	20.3
516	20	48.5	46	0.1247	14:58:37	21-Jul-09	20.2
517	22.7	48.7	45	0.115	14:59:37	21-Jul-09	20.2
518	21.1	49	46	0.1098	15:00:37	21-Jul-09	20.2
519	20.2	49.1	46	0.1153	15:01:37	21-Jul-09	20.2
520	19.8	49	45	0.1166	15:02:37	21-Jul-09	20.1
521	18.2	49	45	0.1015	15:03:37	21-Jul-09	20.0
522	18.9	49.1	45	0.0884	15:04:37	21-Jul-09	19.9
523	23	49.2	45	0.1278	15:05:37	21-Jul-09	20.1
524	19.6	49.4	45	0.1069	15:06:37	21-Jul-09	20.1
525	19.1	49.4	45	0.1012	15:07:37	21-Jul-09	20.0
526	20.1	49.4	45	0.0932	15:08:37	21-Jul-09	20.1
527	19.8	48.9	44	0.0937	15:09:37	21-Jul-09	20.2
528	20.6	49	44	0.1082	15:10:37	21-Jul-09	20.2
529	22.9	48.9	44	0.131	15:11:37	21-Jul-09	20.3
530	20.1	49	44	0.1048	15:12:37	21-Jul-09	20.4
531	27.1	49.1	44	0.1268	15:13:37	21-Jul-09	20.8
532	27	49	44	0.1555	15:14:37	21-Jul-09	21.3
533	25	49.1	44	0.1271	15:15:37	21-Jul-09	21.4
534	26	49	44	0.1592	15:16:37	21-Jul-09	21.7
535	24.7	49.2	44	0.1446	15:17:37	21-Jul-09	22.0
536	21.2	49.2	45	0.1256	15:18:37	21-Jul-09	22.1
537	21.2	49.2	45	0.1167	15:19:37	21-Jul-09	22.3
538	20.6	49.3	45	0.1036	15:20:37	21-Jul-09	22.4
539	20.3	49.4	45	0.1095	15:21:37	21-Jul-09	22.2
540	21	49.7	46	0.1032	15:22:37	21-Jul-09	22.3
541	22.8	49.4	46	0.1066	15:23:37	21-Jul-09	22.5
542	22.5	49.2	46	0.1159	15:24:37	21-Jul-09	22.7
543	23	49.2	46	0.1173	15:25:37	21-Jul-09	22.9
544	22.4	49.4	46	0.1149	15:26:37	21-Jul-09	23.0
545	21.8	49.5	46	0.1056	15:27:37	21-Jul-09	22.9
546	22.7	49.6	46	0.1184	15:28:37	21-Jul-09	23.1
547	22.5	50.3	46	0.1141	15:29:37	21-Jul-09	22.8
548	22.1	49.6	46	0.103	15:30:37	21-Jul-09	22.5
549	22	49.5	46	0.1111	15:31:37	21-Jul-09	22.3
550	20.6	49.5	45	0.1035	15:32:37	21-Jul-09	22.0
551	21.5	49.6	45	0.1054	15:33:37	21-Jul-09	21.8
552	22.7	49.5	45	0.1111	15:34:37	21-Jul-09	21.9
553	22.3	49.6	45	0.1137	15:35:37	21-Jul-09	21.9
554	21.7	49.7	46	0.0968	15:36:37	21-Jul-09	22.0
555	22.3	49.5	46	0.1071	15:37:37	21-Jul-09	22.1
556	23.2	49.5	46	0.1027	15:38:37	21-Jul-09	22.3
557	24.2	49.6	46	0.116	15:39:37	21-Jul-09	22.3
558	23	49.6	46	0.1177	15:40:37	21-Jul-09	22.4
559	23.7	49.6	46	0.1173	15:41:37	21-Jul-09	22.4
560	25.1	49.6	46	0.1197	15:42:37	21-Jul-09	22.6
561	25.2	49.6	46	0.1146	15:43:37	21-Jul-09	22.8
562	24.7	49.6	46	0.1068	15:44:37	21-Jul-09	22.9
563	25.8	49.7	46	0.1093	15:45:37	21-Jul-09	23.1
564	24.1	49.7	46	0.1053	15:46:37	21-Jul-09	23.3
565	24.9	49.7	46	0.1129	15:47:37	21-Jul-09	23.4
566	25.8	49.8	46	0.1213	15:48:37	21-Jul-09	23.8
567	25.1	49.8	46	0.1113	15:49:37	21-Jul-09	24.0
568	24.5	49.8	46	0.1125	15:50:37	21-Jul-09	24.1
569	24.8	49.5	46	0.115	15:51:37	21-Jul-09	24.3
570	24.8	49.6	46	0.104	15:52:37	21-Jul-09	24.5
571	23.8	49.2	46	0.1048	15:53:37	21-Jul-09	24.5
572	25	48	45	0.1168	15:54:37	21-Jul-09	24.7
573	25.1	48	45	0.1203	15:55:37	21-Jul-09	24.7
574	25.3	48.2	45	0.1144	15:56:37	21-Jul-09	24.9
575	26.4	48.4	45	0.127	15:57:37	21-Jul-09	25.0

DataRam 4 Dust Monitor, Serial Number D464

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
474	16.6	35.9	39	0.2346	14:18:54	21-Jul-09	22.1
475	16.2	35.8	39	0.2213	14:19:54	21-Jul-09	21.9
476	16.9	35.8	39	0.2137	14:20:54	21-Jul-09	21.7
477	41.3	35.8	39	0.3478	14:21:54	21-Jul-09	23.2
478	18.1	35.7	39	0.2902	14:22:54	21-Jul-09	20.6
479	16.6	35.7	39	0.2265	14:23:54	21-Jul-09	20.4
480	15.5	35.7	39	0.2018	14:24:54	21-Jul-09	20.2
481	16.1	35.6	39	0.2203	14:25:54	21-Jul-09	20.1
482	61.9	35.6	39	0.4051	14:26:54	21-Jul-09	22.9
483	19	35.5	39	0.3157	14:27:54	21-Jul-09	23.0
484	17.2	35.5	39	0.2173	14:28:54	21-Jul-09	22.9
485	45.1	35.5	39	0.3519	14:29:54	21-Jul-09	24.7
486	15.3	35.5	39	0.2016	14:30:54	21-Jul-09	24.6
487	16.1	35.5	39	0.2026	14:31:54	21-Jul-09	22.9
488	15.8	35.5	39	0.2063	14:32:54	21-Jul-09	22.8
489	15.3	35.4	39	0.1878	14:33:54	21-Jul-09	22.7
490	15.6	35.4	39	0.2034	14:34:54	21-Jul-09	22.6
491	15.8	35.4	39	0.2188	14:35:54	21-Jul-09	22.6
492	16.7	35.4	39	0.2176	14:36:54	21-Jul-09	22.6
493	15.8	35.4	39	0.2067	14:37:54	21-Jul-09	21.0
494	15.9	35.4	39	0.1944	14:38:54	21-Jul-09	20.9
495	16.4	35.4	39	0.2042	14:39:54	21-Jul-09	20.8
496	15.5	35.3	39	0.1948	14:40:54	21-Jul-09	20.8
497	15.1	35.3	39	0.1867	14:41:54	21-Jul-09	20.8
498	14.8	35.3	39	0.1722	14:42:54	21-Jul-09	17.8
499	15.3	35.3	39	0.1747	14:43:54	21-Jul-09	17.6
500	14.2	35.4	39	0.1833	14:44:54	21-Jul-09	17.4
501	12.9	35.3	39	0.1587	14:45:54	21-Jul-09	15.4
502	13.3	35.4	39	0.158	14:46:54	21-Jul-09	15.3
503	13.8	35.4	39	0.1433	14:47:54	21-Jul-09	15.1
504	13.4	35.4	38	0.1572	14:48:54	21-Jul-09	15.0
505	13.9	35.4	38	0.1745	14:49:54	21-Jul-09	14.9
506	13	35.4	38	0.1673	14:50:54	21-Jul-09	14.7
507	12.3	35.4	38	0.1335	14:51:54	21-Jul-09	14.5
508	13.3	35.5	37	0.1562	14:52:54	21-Jul-09	14.3
509	14	35.5	37	0.1865	14:53:54	21-Jul-09	14.2
510	13.1	35.5	38	0.1571	14:54:54	21-Jul-09	14.0
511	13.9	35.4	37	0.1793	14:55:54	21-Jul-09	13.9
512	13.7	35.5	38	0.1741	14:56:54	21-Jul-09	13.8
513	13	35.5	37	0.1441	14:57:54	21-Jul-09	13.6
514	13.9	35.5	37	0.1849	14:58:54	21-Jul-09	13.6
515	16.9	35.5	37	0.1997	14:59:54	21-Jul-09	13.7
516	15	35.5	37	0.2181	15:00:54	21-Jul-09	13.7
517	13	35.5	37	0.1887	15:01:54	21-Jul-09	13.7
518	12.6	35.5	37	0.1668	15:02:54	21-Jul-09	13.7
519	12	35.5	37	0.1326	15:03:54	21-Jul-09	13.6
520	13.1	35.5	36	0.1681	15:04:54	21-Jul-09	13.5
521	12.9	35.5	36	0.1732	15:05:54	21-Jul-09	13.5
522	12.7	35.6	36	0.1597	15:06:54	21-Jul-09	13.5
523	12.7	35.6	36	0.1465	15:07:54	21-Jul-09	13.5
524	13.2	35.5	36	0.1749	15:08:54	21-Jul-09	13.5
525	13.3	35.6	36	0.1655	15:09:54	21-Jul-09	13.4
526	13.5	35.6	36	0.1661	15:10:54	21-Jul-09	13.5
527	13.5	35.6	35	0.1644	15:11:54	21-Jul-09	13.4
528	14.6	35.6	35	0.1817	15:12:54	21-Jul-09	13.5
529	14.2	35.6	36	0.161	15:13:54	21-Jul-09	13.6
530	13.8	35.6	35	0.1779	15:14:54	21-Jul-09	13.6
531	14.1	35.6	35	0.18	15:15:54	21-Jul-09	13.4
532	13.9	35.5	35	0.1757	15:16:54	21-Jul-09	13.3
533	13.9	35.5	36	0.1691	15:17:54	21-Jul-09	13.4
534	13.7	35.5	36	0.1516	15:18:54	21-Jul-09	13.4
535	14	35.5	36	0.1676	15:19:54	21-Jul-09	13.6
536	14.6	35.5	36	0.1611	15:20:54	21-Jul-09	13.7
537	15	35.5	36	0.1769	15:21:54	21-Jul-09	13.8
538	16.3	35.5	36	0.19	15:22:54	21-Jul-09	14.0
539	16.3	35.5	37	0.186	15:23:54	21-Jul-09	14.2
540	16.9	35.5	37	0.2162	15:24:54	21-Jul-09	14.5
541	15.9	35.5	37	0.2001	15:25:54	21-Jul-09	14.6
542	14.9	35.5	36	0.1758	15:26:54	21-Jul-09	14.7
543	15.8	35.5	36	0.1843	15:27:54	21-Jul-09	14.9
544	16.6	35.5	36	0.1915	15:28:54	21-Jul-09	15.0
545	15	35.5	36	0.1842	15:29:54	21-Jul-09	15.0
546	14.2	35.5	36	0.1674	15:30:54	21-Jul-09	15.1
547	13.7	35.5	36	0.1533	15:31:54	21-Jul-09	15.0
548	14.5	35.5	36	0.1664	15:32:54	21-Jul-09	15.1
549	13.4	35.6	36	0.1552	15:33:54	21-Jul-09	15.1
550	13.8	35.6	36	0.1662	15:34:54	21-Jul-09	15.1
551	14.8	35.6	36	0.1738	15:35:54	21-Jul-09	15.1
552	14.8	35.7	36	0.1693	15:36:54	21-Jul-09	15.1
553	17.1	35.7	36	0.1884	15:37:54	21-Jul-09	15.3
554	15.8	35.7	36	0.1881	15:38:54	21-Jul-09	15.2
555	16.4	35.8	36	0.1871	15:39:54	21-Jul-09	15.2
556	17.6	35.8	37	0.1952	15:40:54	21-Jul-09	15.3
557	17.5	35.8	37	0.2054	15:41:54	21-Jul-09	15.4
558	16.4	35.9	37	0.1771	15:42:54	21-Jul-09	15.5
559	17.3	35.9	37	0.1774	15:43:54	21-Jul-09	15.6
560	17	35.9	36	0.1934	15:44:54	21-Jul-09	15.6
561	17.2	36	36	0.1896	15:45:54	21-Jul-09	15.7
562	17.9	36	36	0.1868	15:46:54	21-Jul-09	16.0
563	18.2	36	36	0.1981	15:47:54	21-Jul-09	16.2
564	18.2	36	36	0.1973	15:48:54	21-Jul-09	16.5
565	17.7	36	36	0.1898	15:49:54	21-Jul-09	16.7
566	17.4	36	36	0.1973	15:50:54	21-Jul-09	17.0
567	17.8	36	37	0.1923	15:51:54	21-Jul-09	17.1
568	18	36	37	0.2084	15:52:54	21-Jul-09	17.3
569	18.2	36.1	37	0.1888	15:53:54	21-Jul-09	17.4
570	17.8	36	37	0.1987	15:54:54	21-Jul-09	17.5
571	20.2	36	37	0.2409	15:55:54	21-Jul-09	17.8
572	19.4	36	37	0.2227	15:56:54	21-Jul-09	17.9
573	19.8	36	37	0.2187	15:57:54	21-Jul-09	18.0

Appendix I
Ambient Air Dust Monitoring Results - SEAD-12 Removal Action

Seneca Army Depot Activity
Romulus, NY

DataRam 4 Dust Monitor, Serial Number D454

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
576	27	48.2	46	0.1318	15:58:37	21-Jul-09	25.1
1	29.6	24.9	61	0.2002	6:23:38	28-Jul-09	
2	27.8	24.9	62	0.2208	6:24:38	28-Jul-09	
3	29.6	24.9	63	0.2053	6:25:38	28-Jul-09	
4	29.3	24.9	64	0.208	6:26:38	28-Jul-09	
5	30.3	24.8	64	0.2118	6:27:38	28-Jul-09	
6	30.7	24.8	65	0.2348	6:28:38	28-Jul-09	
7	30.4	24.7	66	0.2156	6:29:38	28-Jul-09	
8	31.4	24.7	66	0.2311	6:30:38	28-Jul-09	
9	29.2	24.7	67	0.2124	6:31:38	28-Jul-09	
10	31	24.7	67	0.2317	6:32:38	28-Jul-09	
11	30.5	24.6	67	0.2142	6:33:38	28-Jul-09	
12	29.5	24.6	67	0.2075	6:34:38	28-Jul-09	
13	30.3	24.6	67	0.2276	6:35:38	28-Jul-09	
14	30.7	24.6	68	0.2338	6:36:38	28-Jul-09	
15	29.8	24.5	68	0.229	6:37:38	28-Jul-09	
16	29.5	24.5	68	0.2021	6:38:38	28-Jul-09	30.0
17	31.1	24.5	68	0.2277	6:39:38	28-Jul-09	30.1
18	31.2	24.4	69	0.2218	6:40:38	28-Jul-09	30.3
19	30.5	24.4	69	0.2319	6:41:38	28-Jul-09	30.3
20	30.7	24.3	69	0.2142	6:42:38	28-Jul-09	30.4
21	31	24.3	69	0.216	6:43:38	28-Jul-09	30.5
22	31.6	24.3	69	0.2253	6:44:38	28-Jul-09	30.5
23	31.4	24.2	70	0.2235	6:45:38	28-Jul-09	30.6
24	31.8	24.2	70	0.2214	6:46:38	28-Jul-09	30.6
25	31.8	24.2	70	0.2166	6:47:38	28-Jul-09	30.8
26	31.2	24.2	70	0.2307	6:48:38	28-Jul-09	30.8
27	32.2	24.1	70	0.2205	6:49:38	28-Jul-09	30.9
28	32	24.1	71	0.2328	6:50:38	28-Jul-09	31.1
29	32	24.1	71	0.2308	6:51:38	28-Jul-09	31.2
30	31.6	24.1	71	0.2301	6:52:38	28-Jul-09	31.2
31	31.2	24.1	71	0.2211	6:53:38	28-Jul-09	31.3
32	31.9	24	71	0.2162	6:54:38	28-Jul-09	31.5
33	32.3	24	71	0.2308	6:55:38	28-Jul-09	31.5
34	31.3	24	71	0.218	6:56:38	28-Jul-09	31.5
35	31.7	24	72	0.2391	6:57:38	28-Jul-09	31.6
36	33.2	24	72	0.2336	6:58:38	28-Jul-09	31.8
37	31.5	24	72	0.2279	6:59:38	28-Jul-09	31.8
38	31.2	24	72	0.2206	7:00:38	28-Jul-09	31.8
39	32	23.9	72	0.2203	7:01:38	28-Jul-09	31.8
40	32.9	24	72	0.2357	7:02:38	28-Jul-09	31.9
41	31.8	23.9	73	0.2182	7:03:38	28-Jul-09	31.9
42	31.6	23.9	73	0.218	7:04:38	28-Jul-09	31.9
43	34.1	23.9	73	0.2274	7:05:38	28-Jul-09	32.0
44	33.4	23.9	73	0.2193	7:06:38	28-Jul-09	32.1
45	34	23.9	73	0.2242	7:07:38	28-Jul-09	32.2
46	32.8	23.9	74	0.2186	7:08:38	28-Jul-09	32.3
47	33.1	23.9	74	0.2217	7:09:38	28-Jul-09	32.4
48	34.2	23.9	74	0.23	7:10:38	28-Jul-09	32.6
49	33.1	23.9	74	0.226	7:11:38	28-Jul-09	32.6
50	33.9	23.9	74	0.2209	7:12:38	28-Jul-09	32.8
51	34.4	23.9	74	0.2341	7:13:38	28-Jul-09	33.0
52	34.5	23.9	74	0.2306	7:14:38	28-Jul-09	33.0
53	34.1	23.9	74	0.2389	7:15:38	28-Jul-09	33.2
54	33.8	23.9	74	0.2303	7:16:38	28-Jul-09	33.4
55	32.6	23.9	75	0.2267	7:17:38	28-Jul-09	33.4
56	33.4	23.9	75	0.2268	7:18:38	28-Jul-09	33.4
57	34.2	23.9	75	0.2461	7:19:38	28-Jul-09	33.6
58	34	24.1	75	0.2403	7:20:38	28-Jul-09	33.7
59	33	24.1	75	0.2255	7:21:38	28-Jul-09	33.7
60	33.3	24.2	75	0.2316	7:22:38	28-Jul-09	33.7
61	32.9	24.2	75	0.2301	7:23:38	28-Jul-09	33.6
62	32.9	24.2	75	0.2227	7:24:38	28-Jul-09	33.6
63	33.8	24.2	75	0.2246	7:25:38	28-Jul-09	33.6
64	33.5	24.2	75	0.2346	7:26:38	28-Jul-09	33.6
65	32.8	24.2	75	0.2289	7:27:38	28-Jul-09	33.6
66	34.5	24.2	75	0.2319	7:28:38	28-Jul-09	33.6
67	33.6	24.3	75	0.2422	7:29:38	28-Jul-09	33.6
68	34.5	24.3	75	0.2383	7:30:38	28-Jul-09	33.6
69	33.4	24.3	76	0.2151	7:31:38	28-Jul-09	33.5
70	32.9	24.3	76	0.2245	7:32:38	28-Jul-09	33.5
71	33.1	24.3	76	0.2134	7:33:38	28-Jul-09	33.5
72	32.5	24.4	76	0.2189	7:34:38	28-Jul-09	33.4
73	33.1	24.4	76	0.2371	7:35:38	28-Jul-09	33.4
74	33.2	24.4	76	0.2424	7:36:38	28-Jul-09	33.3
75	32.5	24.4	76	0.2194	7:37:38	28-Jul-09	33.3
76	33.1	24.5	76	0.2294	7:38:38	28-Jul-09	33.3
77	32.9	24.5	76	0.2377	7:39:38	28-Jul-09	33.3
78	33.7	24.5	76	0.2308	7:40:38	28-Jul-09	33.3
79	32.4	24.5	76	0.2188	7:41:38	28-Jul-09	33.2
80	32.6	24.5	76	0.2389	7:42:38	28-Jul-09	33.2
81	33.1	24.6	76	0.2324	7:43:38	28-Jul-09	33.2
82	33.1	24.6	76	0.2331	7:44:38	28-Jul-09	33.1
83	32.1	24.6	76	0.2281	7:45:38	28-Jul-09	33.0
84	32.1	24.7	76	0.2158	7:46:38	28-Jul-09	32.9
85	31.8	24.7	76	0.2234	7:47:38	28-Jul-09	32.8
86	32.2	24.7	76	0.2253	7:48:38	28-Jul-09	32.7
87	32.2	24.8	76	0.2235	7:49:38	28-Jul-09	32.7
88	32.5	24.8	76	0.2391	7:50:38	28-Jul-09	32.7
89	31.1	24.9	76	0.2197	7:51:38	28-Jul-09	32.5
90	31.7	24.9	76	0.2195	7:52:38	28-Jul-09	32.4
91	32	25.6	77	0.2221	7:53:38	28-Jul-09	32.4
92	31	28	79	0.2303	7:54:38	28-Jul-09	32.3
93	29.9	30.8	81	0.2167	7:55:38	28-Jul-09	32.1
94	30	30.9	81	0.2119	7:56:38	28-Jul-09	31.9
95	30.1	31	80	0.213	7:57:38	28-Jul-09	31.7

DataRam 4 Dust Monitor, Serial Number D464

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
574	23.7	36	37	0.2577	15:58:54	21-Jul-09	18.5
575	23.4	35.9	37	0.2976	15:59:54	21-Jul-09	18.9
1	21.2	23.8	61	0.2931	6:26:26	28-Jul-09	
2	21.9	23.8	62	0.3181	6:27:26	28-Jul-09	
3	21	23.8	62	0.308	6:28:26	28-Jul-09	
4	21.6	23.7	63	0.3195	6:29:26	28-Jul-09	
5	20.2	23.7	63	0.277	6:30:26	28-Jul-09	
6	22.3	23.7	63	0.3196	6:31:26	28-Jul-09	
7	23.2	23.7	64	0.3233	6:32:26	28-Jul-09	
8	22.3	23.6	64	0.3572	6:33:26	28-Jul-09	
9	20.8	23.6	64	0.2966	6:34:26	28-Jul-09	
10	20.6	23.6	65	0.2701	6:35:26	28-Jul-09	
11	21.2	23.6	65	0.2722	6:36:26	28-Jul-09	
12	20.5	23.5	65	0.2778	6:37:26	28-Jul-09	
13	21.4	23.5	65	0.2668	6:38:26	28-Jul-09	
14	20.8	23.5	66	0.2734	6:39:26	28-Jul-09	
15	20.9	23.5	66	0.3088	6:40:26	28-Jul-09	
16	20.4	23.4	66	0.2617	6:41:26	28-Jul-09	21.3
17	21.4	23.4	66	0.2982	6:42:26	28-Jul-09	21.3
18	21	23.4	66	0.304	6:43:26	28-Jul-09	21.2
19	20.1	23.4	66	0.2734	6:44:26	28-Jul-09	21.2
20	19.7	23.3	66	0.2537	6:45:26	28-Jul-09	21.1
21	20.1	23.3	67	0.2629	6:46:26	28-Jul-09	21.0
22	20.5	23.3	67	0.2705	6:47:26	28-Jul-09	20.9
23	19.7	23.3	67	0.2747	6:48:26	28-Jul-09	20.7
24	20.9	23.2	67	0.2674	6:49:26	28-Jul-09	20.6
25	19.6	23.2	67	0.2583	6:50:26	28-Jul-09	20.6
26	19.9	23.2	67	0.2526	6:51:26	28-Jul-09	20.5
27	21.2	23.2	67	0.2637	6:52:26	28-Jul-09	20.5
28	21	23.2	68	0.2953	6:53:26	28-Jul-09	20.5
29	20.5	23.2	68	0.2783	6:54:26	28-Jul-09	20.5
30	20.4	23.2	68	0.2696	6:55:26	28-Jul-09	20.5
31	21	23.2	68	0.2717	6:56:26	28-Jul-09	20.5
32	20.6	23.2	68	0.2671	6:57:26	28-Jul-09	20.5
33	20.5	23.2	68	0.264	6:58:26	28-Jul-09	20.4
34	20.6	23.2	68	0.2729	6:59:26	28-Jul-09	20.4
35	20.7	23.2	68	0.2712	7:00:26	28-Jul-09	20.4
36	21	23.2	68	0.2793	7:01:26	28-Jul-09	20.5
37	20.5	23.2	68	0.2645	7:02:26	28-Jul-09	20.5
38	20.2	23.1	68	0.258	7:03:26	28-Jul-09	20.5
39	21.7	23.1	68	0.2687	7:04:26	28-Jul-09	20.6
40	20.1	23.1	69	0.2336	7:05:26	28-Jul-09	20.6
41	19.9	23.1	69	0.2589	7:06:26	28-Jul-09	20.6
42	20.6	23.2	69	0.2545	7:07:26	28-Jul-09	20.7
43	21.2	23.2	69	0.2792	7:08:26	28-Jul-09	20.7
44	21.1	23.1	69	0.2722	7:09:26	28-Jul-09	20.7
45	22.2	23.2	69	0.2632	7:10:26	28-Jul-09	20.8
46	19.8	23.2	69	0.2646	7:11:26	28-Jul-09	20.7
47	19.5	23.2	69	0.2427	7:12:26	28-Jul-09	20.6
48	20.3	23.2	69	0.2544	7:13:26	28-Jul-09	20.6
49	21	23.2	69	0.2685	7:14:26	28-Jul-09	20.7
50	21	23.2	69	0.2716	7:15:26	28-Jul-09	20.7
51	20.5	23.2	69	0.2615	7:16:26	28-Jul-09	20.7
52	23.1	23.2	69	0.2756	7:17:26	28-Jul-09	20.8
53	20	23.2	70	0.2713	7:18:26	28-Jul-09	20.8
54	20.7	23.2	70	0.2772	7:19:26	28-Jul-09	20.8
55	20.1	23.2	70	0.2607	7:20:26	28-Jul-09	20.7
56	19.3	23.3	70	0.2217	7:21:26	28-Jul-09	20.6
57	19.4	23.2	70	0.2378	7:22:26	28-Jul-09	20.6
58	21	23.3	70	0.2395	7:23:26	28-Jul-09	20.6
59	19.9	23.3	70	0.2327	7:24:26	28-Jul-09	20.6
60	20	23.3	70	0.2398	7:25:26	28-Jul-09	20.5
61	19	23.3	70	0.237	7:26:26	28-Jul-09	20.3
62	19.2	23.4	70	0.2259	7:27:26	28-Jul-09	20.3
63	19.7	23.4	70	0.2372	7:28:26	28-Jul-09	20.3
64	20	23.4	70	0.2518	7:29:26	28-Jul-09	20.2
65	19.6	23.4	70	0.2381	7:30:26	28-Jul-09	20.2
66	19.7	23.4	70	0.2358	7:31:26	28-Jul-09	20.1
67	20.1	23.4	70	0.2627	7:32:26	28-Jul-09	20.1
68	18.8	23.5	70	0.246	7:33:26	28-Jul-09	19.8
69	18.3	23.5	70	0.2252	7:34:26	28-Jul-09	19.7
70	18.5	23.5	70	0.2096	7:35:26	28-Jul-09	19.5
71	18.6	23.5	70	0.2181	7:36:26	28-Jul-09	19.4
72	19.3	23.6	70	0.2495	7:37:26	28-Jul-09	19.4
73	19	23.6	70	0.2264	7:38:26	28-Jul-09	19.4
74	19.7	23.6	70	0.2359	7:39:26	28-Jul-09	19.3
75	19.3	23.6	70	0.2334	7:40:26	28-Jul-09	19.3
76	18.5	23.7	70	0.2189	7:41:26	28-Jul-09	19.2
77	18.7	23.7	70	0.2269	7:42:26	28-Jul-09	19.2
78	18.2	23.7	70	0.2459	7:43:26	28-Jul-09	19.1
79	18.2	23.7	70	0.2188	7:44:26	28-Jul-09	19.0
80	18.2	23.8	70	0.2346	7:45:26	28-Jul-09	18.9
81	19.8	23.8	70	0.2511	7:46:26	28-Jul-09	18.9
82	19.1	23.9	70	0.2569	7:47:26	28-Jul-09	18.9
83	18.8	23.9	70	0.2269	7:48:26	28-Jul-09	18.8
84	18.1	23.9	70	0.217	7:49:26	28-Jul-09	18.8
85	18.5	24	70	0.233	7:50:26	28-Jul-09	18.8
86	17.6	24	70	0.2171	7:51:26	28-Jul-09	18.7
87	17.8	24	70	0.2182	7:52:26	28-Jul-09	18.7
88	18	24	70	0.2159	7:53:26	28-Jul-09	18.6
89	17.5	24.1	70	0.2342	7:54:26	28-Jul-09	18.5
90	18.3	24.1	70	0.2306	7:55:26	28-Jul-09	18.4
91	17.6	24.2	70	0.2233	7:56:26	28-Jul-09	18.3
92	17.5	24.2	70	0.2252	7:57:26	28-Jul-09	18.2

Appendix I
Ambient Air Dust Monitoring Results - SEAD-12 Removal Action

Seneca Army Depot Activity
Romulus, NY

DataRam 4 Dust Monitor, Serial Number D454

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
96	30	31.1	81	0.2288	7:58:38	28-Jul-09	31.6
97	28.6	31.2	81	0.2082	7:59:38	28-Jul-09	31.3
98	28.5	31.2	80	0.2155	8:00:38	28-Jul-09	31.0
99	28.3	28.6	78	0.2145	8:01:38	28-Jul-09	30.8
100	28.8	27.6	77	0.2169	8:02:38	28-Jul-09	30.5
101	28.9	28	78	0.2126	8:03:38	28-Jul-09	30.4
102	28.6	28.7	78	0.2139	8:04:38	28-Jul-09	30.1
103	28.5	30.2	79	0.2329	8:05:38	28-Jul-09	29.9
104	26.6	30.6	79	0.2177	8:06:38	28-Jul-09	29.5
105	28.1	25.8	75	0.2195	8:07:38	28-Jul-09	29.4
106	27.1	25.9	75	0.2259	8:08:38	28-Jul-09	29.1
107	27	26	75	0.2188	8:09:38	28-Jul-09	28.8
108	25.4	26	75	0.2044	8:10:38	28-Jul-09	28.4
109	25.4	26.1	74	0.193	8:11:38	28-Jul-09	28.1
110	25.3	26.2	74	0.2015	8:12:38	28-Jul-09	27.8
111	25.8	26.6	74	0.2135	8:13:38	28-Jul-09	27.6
112	25	26.5	74	0.2108	8:14:38	28-Jul-09	27.2
113	25.9	26.7	74	0.2243	8:15:38	28-Jul-09	27.1
114	25.2	27.1	74	0.213	8:16:38	28-Jul-09	26.9
115	25.2	27.7	74	0.2217	8:17:38	28-Jul-09	26.7
116	25.2	28.8	75	0.2194	8:18:38	28-Jul-09	26.5
117	25.6	28.7	74	0.2114	8:19:38	28-Jul-09	26.2
118	24.7	26.6	73	0.2192	8:20:38	28-Jul-09	26.0
119	24.6	26.7	72	0.2071	8:21:38	28-Jul-09	25.8
120	23.8	26.7	72	0.2063	8:22:38	28-Jul-09	25.6
121	23.9	26.8	72	0.1989	8:23:38	28-Jul-09	25.3
122	22.7	26.9	72	0.2011	8:24:38	28-Jul-09	25.0
123	22.4	26.9	71	0.1793	8:25:38	28-Jul-09	24.8
124	22.9	27	71	0.1954	8:26:38	28-Jul-09	24.6
125	22.1	27	71	0.1839	8:27:38	28-Jul-09	24.4
126	23.1	27.1	71	0.2075	8:28:38	28-Jul-09	24.3
127	23.4	27.1	71	0.2058	8:29:38	28-Jul-09	24.1
128	22.2	27.2	71	0.1949	8:30:38	28-Jul-09	23.9
129	21.9	27.2	71	0.1826	8:31:38	28-Jul-09	23.7
130	22.3	27.3	70	0.1888	8:32:38	28-Jul-09	23.5
131	22.5	27.4	70	0.2199	8:33:38	28-Jul-09	23.3
132	22.1	27.4	70	0.1971	8:34:38	28-Jul-09	23.1
133	21.3	27.8	70	0.1806	8:35:38	28-Jul-09	22.9
134	22.1	28	70	0.1976	8:36:38	28-Jul-09	22.7
135	21.5	27.9	70	0.1999	8:37:38	28-Jul-09	22.5
136	21.9	28	70	0.2138	8:38:38	28-Jul-09	22.4
137	21.4	28.3	70	0.1918	8:39:38	28-Jul-09	22.2
138	20.9	28.7	70	0.1809	8:40:38	28-Jul-09	22.1
139	20.1	29.3	70	0.1829	8:41:38	28-Jul-09	22.0
140	21	29.8	70	0.2009	8:42:38	28-Jul-09	21.9
141	21.4	29	69	0.1943	8:43:38	28-Jul-09	21.8
142	21	29.9	70	0.191	8:44:38	28-Jul-09	21.7
143	20.1	32.3	72	0.1889	8:45:38	28-Jul-09	21.5
144	20	28.9	69	0.1839	8:46:38	28-Jul-09	21.3
145	20.2	29.1	69	0.1996	8:47:38	28-Jul-09	21.2
146	19.4	29.3	69	0.1866	8:48:38	28-Jul-09	21.1
147	19.3	29.5	68	0.17	8:49:38	28-Jul-09	20.9
148	19.5	29.8	69	0.181	8:50:38	28-Jul-09	20.7
149	19.7	29.9	69	0.1893	8:51:38	28-Jul-09	20.6
150	18.8	30.3	69	0.1707	8:52:38	28-Jul-09	20.4
151	21	30.9	68	0.1901	8:53:38	28-Jul-09	20.4
152	21.1	31	68	0.1957	8:54:38	28-Jul-09	20.3
153	20.2	32	69	0.1836	8:55:38	28-Jul-09	20.2
154	19.6	33.3	69	0.1763	8:56:38	28-Jul-09	20.2
155	20.2	33.6	69	0.1782	8:57:38	28-Jul-09	20.2
156	20.4	32.1	68	0.1929	8:58:38	28-Jul-09	20.1
157	19.6	32.4	68	0.1908	8:59:38	28-Jul-09	20.0
158	19	32.5	68	0.1843	9:00:38	28-Jul-09	19.9
159	19.2	33	68	0.1899	9:01:38	28-Jul-09	19.8
160	18.4	34	69	0.169	9:02:38	28-Jul-09	19.7
161	18.4	35.5	69	0.1904	9:03:38	28-Jul-09	19.6
162	17.9	35.9	69	0.1707	9:04:38	28-Jul-09	19.5
163	18.8	36.1	69	0.1788	9:05:38	28-Jul-09	19.5
164	18	36.2	69	0.1767	9:06:38	28-Jul-09	19.4
165	18.5	34.3	67	0.1964	9:07:38	28-Jul-09	19.3
166	18.1	32.5	66	0.1727	9:08:38	28-Jul-09	19.3
167	17.9	32.9	66	0.1656	9:09:38	28-Jul-09	19.1
168	18.4	32	65	0.1837	9:10:38	28-Jul-09	18.9
169	19.5	30.8	63	0.201	9:11:38	28-Jul-09	18.9
170	19.1	30.7	63	0.1816	9:12:38	28-Jul-09	18.8
171	18.8	30.6	63	0.1691	9:13:38	28-Jul-09	18.8
172	19.6	30.4	63	0.1781	9:14:38	28-Jul-09	18.7
173	20	30.9	63	0.1956	9:15:38	28-Jul-09	18.7
174	18.9	30.7	63	0.1871	9:16:38	28-Jul-09	18.7
175	19.7	31	63	0.1926	9:17:38	28-Jul-09	18.8
176	19.6	30.7	63	0.2052	9:18:38	28-Jul-09	18.8
177	19.1	30.6	62	0.1831	9:19:38	28-Jul-09	18.9
178	17.4	30.8	62	0.1667	9:20:38	28-Jul-09	18.8
179	17.2	30.9	62	0.1616	9:21:38	28-Jul-09	18.7
180	18	30.8	61	0.1611	9:22:38	28-Jul-09	18.7
181	18.5	30.9	61	0.1683	9:23:38	28-Jul-09	18.7
182	18.8	30.9	61	0.1789	9:24:38	28-Jul-09	18.8
183	18.8	31	61	0.1642	9:25:38	28-Jul-09	18.8
184	18.5	31.1	60	0.174	9:26:38	28-Jul-09	18.8
185	18.3	31.1	60	0.1826	9:27:38	28-Jul-09	18.8
186	18	31.2	60	0.1712	9:28:38	28-Jul-09	18.7
187	17.1	31.3	60	0.1675	9:29:38	28-Jul-09	18.6
188	17.8	31.4	60	0.1615	9:30:38	28-Jul-09	18.5
189	18.4	31.5	59	0.1742	9:31:38	28-Jul-09	18.4
190	18	31.5	59	0.1829	9:32:38	28-Jul-09	18.3
191	17.6	31.6	59	0.1847	9:33:38	28-Jul-09	18.2
192	18.5	31.7	59	0.1847	9:34:38	28-Jul-09	18.1
193	18.9	31.8	59	0.1959	9:35:38	28-Jul-09	18.1
194	17.6	31.8	59	0.1707	9:36:38	28-Jul-09	18.1
195	17.8	31.9	58	0.1702	9:37:38	28-Jul-09	18.2

DataRam 4 Dust Monitor, Serial Number D464

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
93	16.3	24.2	70	0.205	7:58:26	28-Jul-09	18.1
94	16	24.3	70	0.1915	7:59:26	28-Jul-09	18.0
95	17.9	24.3	70	0.2136	8:00:26	28-Jul-09	17.9
96	16.6	24.4	70	0.2257	8:01:26	28-Jul-09	17.8
97	16.9	24.4	70	0.2133	8:02:26	28-Jul-09	17.7
98	17.2	24.5	70	0.2107	8:03:26	28-Jul-09	17.5
99	16.6	24.5	70	0.2264	8:04:26	28-Jul-09	17.4
100	17.2	24.5	70	0.2338	8:05:26	28-Jul-09	17.3
101	15.8	24.6	69	0.2347	8:06:26	28-Jul-09	17.2
102	15.1	24.6	69	0.1911	8:07:26	28-Jul-09	17.0
103	15.2	24.7	69	0.2074	8:08:26	28-Jul-09	16.9
104	15.4	24.7	69	0.2168	8:09:26	28-Jul-09	16.7
105	15.3	24.8	69	0.2019	8:10:26	28-Jul-09	16.6
106	15.6	24.8	69	0.2244	8:11:26	28-Jul-09	16.4
107	15.3	24.9	69	0.2137	8:12:26	28-Jul-09	16.2
108	14.8	25	69	0.1848	8:13:26	28-Jul-09	16.1
109	15.3	25	69	0.1976	8:14:26	28-Jul-09	16.0
110	14.6	25.1	68	0.2216	8:15:26	28-Jul-09	15.9
111	14.4	25.1	68	0.1839	8:16:26	28-Jul-09	15.7
112	14.1	25.1	68	0.194	8:17:26	28-Jul-09	15.6
113	14.3	25.2	68	0.2086	8:18:26	28-Jul-09	15.4
114	14.3	25.2	68	0.2188	8:19:26	28-Jul-09	15.2
115	14.3	25.3	68	0.2067	8:20:26	28-Jul-09	15.1
116	14.1	25.3	67	0.2062	8:21:26	28-Jul-09	14.9
117	14.5	25.4	67	0.2168	8:22:26	28-Jul-09	14.8
118	15	25.4	67	0.2113	8:23:26	28-Jul-09	14.8
119	15.5	25.5	67	0.2155	8:24:26	28-Jul-09	14.8
120	14.4	25.5	67	0.2146	8:25:26	28-Jul-09	14.7
121	14.2	25.6	67	0.1891	8:26:26	28-Jul-09	14.7
122	13.4	25.6	67	0.1694	8:27:26	28-Jul-09	14.5
123	13.8	25.7	67	0.1969	8:28:26	28-Jul-09	14.4
124	13.5	25.7	67	0.2162	8:29:26	28-Jul-09	14.4
125	13.5	25.8	67	0.1841	8:30:26	28-Jul-09	14.2
126	13.7	25.8	66	0.1968	8:31:26	28-Jul-09	14.2
127	12.9	25.9	66	0.2122	8:32:26	28-Jul-09	14.1
128	13	26	66	0.173	8:33:26	28-Jul-09	14.0
129	13.2	26	66	0.2152	8:34:26	28-Jul-09	14.0
130	13.5	26.1	66	0.197	8:35:26	28-Jul-09	13.9
131	13.4	26.2	66	0.2493	8:36:26	28-Jul-09	13.9
132	12.7	26.2	65	0.229	8:37:26	28-Jul-09	13.8
133	12.2	26.3	65	0.2225	8:38:26	28-Jul-09	13.6
134	13.8	26.3	65	0.2288	8:39:26	28-Jul-09	13.5
135	13	26.4	65	0.2589	8:40:26	28-Jul-09	13.4
136	12.5	26.5	64	0.2061	8:41:26	28-Jul-09	13.3
137	12.6	26.5	64	0.2273	8:42:26	28-Jul-09	13.2
138	12.2	26.6	64	0.2041	8:43:26	28-Jul-09	13.1
139	12	26.6	64	0.1908	8:44:26	28-Jul-09	13.0
140	12.1	26.7	64	0.1774	8:45:26	28-Jul-09	12.9
141	12.2	26.7	64	0.2101	8:46:26	28-Jul-09	12.8
142	11.6	26.8	63	0.1895	8:47:26	28-Jul-09	12.7
143	11.9	26.9	63	0.2105	8:48:26	28-Jul-09	12.6
144	12.7	26.9	63	0.1993	8:49:26	28-Jul-09	12.6
145	12.5	27	63	0.222	8:50:26	28-Jul-09	12.6
146	11.6	27	63	0.2025	8:51:26	28-Jul-09	12.4
147	11.6	27.1	63	0.203	8:52:26	28-Jul-09	12.3
148	13.4	27.1	62	0.2444	8:53:26	28-Jul-09	12.4
149	11.5	27.2	62	0.227	8:54:26	28-Jul-09	12.3
150	10.5	27.3	62	0.1903	8:55:26	28-Jul-09	12.1
151	9.9	27.4	62	0.1658	8:56:26	28-Jul-09	11.9
152	11.2	27.4	62	0.1943	8:57:26	28-Jul-09	11.8
153	11.6	27.5	62	0.2428	8:58:26	28-Jul-09	11.8
154	10	27.5	61	0.2052	8:59:26	28-Jul-09	11.6
155	10.5	27.6	61	0.2087	9:00:26	28-Jul-09	11.6
156	11	27.6	60	0.1969	9:01:26	28-Jul-09	11.5
157	10.6	27.7	60	0.2039	9:02:26	28-Jul-09	11.4
158	11.4	27.7	60	0.2159	9:03:26	28-Jul-09	11.4
159	10.9	27.8	60	0.1992	9:04:26	28-Jul-09	11.3
160	11.4	27.8	60	0.2256	9:05:26	28-Jul-09	11.2
161	14.5	27.9	60	0.2716	9:06:26	28-Jul-09	11.4
162	10.9	28	60	0.2341	9:07:26	28-Jul-09	11.3
163	11.5	28	60	0.1945	9:08:26	28-Jul-09	11.3
164	10.7	28	60	0.1909	9:09:26	28-Jul-09	11.1
165	10.2	28.1	59	0.2044	9:10:26	28-Jul-09	11.1
166	9.7	28.1	59	0.1907	9:11:26	28-Jul-09	11.0
167	10.5	28.2	59	0.1952	9:12:26	28-Jul-09	11.0
168	12.7	28.2	59	0.2628	9:13:26	28-Jul-09	11.1
169	9.9	28.3	58	0.2145	9:14:26	28-Jul-09	11.0
170	9.9	28.4	58	0.1998	9:15:26	28-Jul-09	11.0
171	10.3	28.4	58	0.1955	9:16:26	28-Jul-09	11.0
172	10.3	28.5	58	0.19	9:17:26	28-Jul-09	11.0
173	10.4	28.5	58	0.1956	9:18:26	28-Jul-09	11.0
174	10.7	28.6	57	0.1885	9:19:26	28-Jul-09	10.9
175	9.7	28.6	57	0.1977	9:20:26	28-Jul-09	10.8
176	10.3	28.7	57	0.1991	9:21:26	28-Jul-09	10.8
177	10.5	28.7	57	0.2009	9:22:26	28-Jul-09	10.5
178	10.3	28.7	57	0.1999	9:23:26	28-Jul-09	10.5
179	10.3	28.8	57	0.1922	9:24:26	28-Jul-09	10.4
180	12.1	28.9	57	0.1993	9:25:26	28-Jul-09	10.5
181	11.5	28.9	57	0.2364	9:26:26	28-Jul-09	10.6
182	10.5	29	56	0.2167	9:27:26	28-Jul-09	10.6
183	11	29	56	0.1968	9:28:26	28-Jul-09	10.7
184	10.1	29.1	56	0.2009	9:29:26	28-Jul-09	10.5
185	10	29.1	56	0.1943	9:30:26	28-Jul-09	10.5
186	11.7	29.1	56	0.2203	9:31:26	28-Jul-09	10.6
187	19	29.2	56	0.3343	9:32:26	28-Jul-09	11.2
188	12.4	29.2	56	0.3061	9:33:26	28-Jul-09	11.3
189	10	29.3	56	0.2268	9:34:26	28-Jul-09	11.3
190	9.6	29.4	55	0.2027	9:35:26	28-Jul-09	11.2
191	11	29.4	55	0.2229	9:36:26	28-Jul-09	11.3
192	10	29.5	55	0.212	9:37:26	28-Jul-09	11.3

Appendix I
Ambient Air Dust Monitoring Results - SEAD-12 Removal Action

Seneca Army Depot Activity
Romulus, NY

DataRam 4 Dust Monitor, Serial Number D454

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
196	17.1	32	58	0.1718	9:38:38	28-Jul-09	18.1
197	16.6	33	58	0.16	9:39:38	28-Jul-09	18.0
198	18.4	33.5	59	0.1969	9:40:38	28-Jul-09	18.0
199	17.5	33.8	59	0.1663	9:41:38	28-Jul-09	17.9
200	16.9	34.3	59	0.1511	9:42:38	28-Jul-09	17.8
201	17.3	35	59	0.1739	9:43:38	28-Jul-09	17.7
202	18.5	35.7	60	0.1706	9:44:38	28-Jul-09	17.8
203	18.1	36.3	60	0.1719	9:45:38	28-Jul-09	17.8
204	18.3	37.3	60	0.1684	9:46:38	28-Jul-09	17.8
205	18.1	37.6	61	0.1559	9:47:38	28-Jul-09	17.8
206	18.4	38.1	61	0.1588	9:48:38	28-Jul-09	17.9
207	18.2	39	61	0.1631	9:49:38	28-Jul-09	17.9
208	19.2	40.3	62	0.1834	9:50:38	28-Jul-09	17.9
209	19.9	42.2	63	0.1864	9:51:38	28-Jul-09	18.0
210	19.7	43.9	64	0.1765	9:52:38	28-Jul-09	18.1
211	19	44.4	64	0.1624	9:53:38	28-Jul-09	18.2
212	18.9	44.8	64	0.1728	9:54:38	28-Jul-09	18.3
213	19.9	45	64	0.1638	9:55:38	28-Jul-09	18.5
214	19.6	45.1	64	0.1872	9:56:38	28-Jul-09	18.6
215	18.8	45.7	64	0.1558	9:57:38	28-Jul-09	18.7
216	19.3	47.3	66	0.1589	9:58:38	28-Jul-09	18.8
217	19.2	46.4	65	0.1651	9:59:38	28-Jul-09	18.9
218	19.5	42.9	62	0.1794	10:00:38	28-Jul-09	19.0
219	19.7	42	62	0.173	10:01:38	28-Jul-09	19.1
220	19	41.9	61	0.1553	10:02:38	28-Jul-09	19.2
221	19.2	41.9	61	0.1691	10:03:38	28-Jul-09	19.2
222	20.4	42.2	62	0.1647	10:04:38	28-Jul-09	19.3
223	20.4	42.6	62	0.1739	10:05:38	28-Jul-09	19.5
224	19.7	42.6	62	0.178	10:06:38	28-Jul-09	19.5
225	21.2	42.8	62	0.177	10:07:38	28-Jul-09	19.6
226	18.9	42.7	62	0.1805	10:08:38	28-Jul-09	19.5
227	19.2	42.8	61	0.1571	10:09:38	28-Jul-09	19.6
228	18.6	42.7	61	0.1537	10:10:38	28-Jul-09	19.5
229	19.8	42.9	61	0.1684	10:11:38	28-Jul-09	19.5
230	19.9	42.8	61	0.1725	10:12:38	28-Jul-09	19.6
231	19.6	42.5	61	0.1692	10:13:38	28-Jul-09	19.6
232	19.3	42.8	61	0.1595	10:14:38	28-Jul-09	19.6
233	20.2	42.9	61	0.1727	10:15:38	28-Jul-09	19.7
234	19.9	42.7	60	0.1707	10:16:38	28-Jul-09	19.7
235	20.6	43	60	0.1657	10:17:38	28-Jul-09	19.7
236	20.3	42.8	60	0.1752	10:18:38	28-Jul-09	19.8
237	20.1	43	60	0.1715	10:19:38	28-Jul-09	19.9
238	20.5	42.8	60	0.1681	10:20:38	28-Jul-09	19.9
239	21.8	43.3	60	0.1777	10:21:38	28-Jul-09	20.0
240	21	43.2	59	0.1746	10:22:38	28-Jul-09	20.1
241	21.4	43.3	60	0.1792	10:23:38	28-Jul-09	20.1
242	21.7	43.4	60	0.1842	10:24:38	28-Jul-09	20.2
243	20.5	43.3	59	0.1816	10:25:38	28-Jul-09	20.3
244	21	43.2	59	0.1766	10:26:38	28-Jul-09	20.5
245	20.9	43.6	59	0.1778	10:27:38	28-Jul-09	20.5
246	20.6	43.5	59	0.184	10:28:38	28-Jul-09	20.6
247	20.4	43.3	59	0.1858	10:29:38	28-Jul-09	20.6
248	20.2	43.9	59	0.1749	10:30:38	28-Jul-09	20.7
249	20.9	43.7	59	0.1819	10:31:38	28-Jul-09	20.7
250	21.3	43.5	58	0.1936	10:32:38	28-Jul-09	20.8
251	20.6	43.3	58	0.1917	10:33:38	28-Jul-09	20.8
252	21.5	43.3	57	0.1896	10:34:38	28-Jul-09	20.9
253	20.3	43.4	57	0.1706	10:35:38	28-Jul-09	20.9
254	20	43.2	57	0.1829	10:36:38	28-Jul-09	20.9
255	20.2	43.5	57	0.1802	10:37:38	28-Jul-09	20.8
256	19.8	42.9	57	0.1784	10:38:38	28-Jul-09	20.7
257	20.5	43.6	57	0.1795	10:39:38	28-Jul-09	20.7
258	20.2	43	56	0.194	10:40:38	28-Jul-09	20.6
259	19.8	43.1	57	0.1945	10:41:38	28-Jul-09	20.5
260	19.4	42.9	56	0.1855	10:42:38	28-Jul-09	20.4
261	20.6	43.1	56	0.2039	10:43:38	28-Jul-09	20.4
262	20.1	43.9	56	0.1829	10:44:38	28-Jul-09	20.4
263	20.4	43.1	56	0.1907	10:45:38	28-Jul-09	20.4
264	19.9	43.1	55	0.1859	10:46:38	28-Jul-09	20.3
265	19.5	43.3	55	0.1697	10:47:38	28-Jul-09	20.3
266	20.2	43.5	55	0.1689	10:48:38	28-Jul-09	20.2
267	20.5	43.3	55	0.1997	10:49:38	28-Jul-09	20.2
268	20.1	43.4	55	0.1865	10:50:38	28-Jul-09	20.1
269	20.8	43.4	55	0.1882	10:51:38	28-Jul-09	20.1
270	20.5	43	54	0.1814	10:52:38	28-Jul-09	20.2
271	20.2	43.3	55	0.1837	10:53:38	28-Jul-09	20.2
272	20.7	43.7	55	0.1881	10:54:38	28-Jul-09	20.2
273	20.1	42.9	55	0.1646	10:55:38	28-Jul-09	20.2
274	20.4	43.2	55	0.1878	10:56:38	28-Jul-09	20.2
275	20.3	43.6	55	0.1852	10:57:38	28-Jul-09	20.2
276	19.5	43.3	54	0.1829	10:58:38	28-Jul-09	20.2
277	19.3	43.2	54	0.1872	10:59:38	28-Jul-09	20.2
278	20	43.5	54	0.1835	11:00:38	28-Jul-09	20.2
279	19.6	43.4	54	0.175	11:01:38	28-Jul-09	20.1
280	19.8	43.2	54	0.1779	11:02:38	28-Jul-09	20.1
281	20.2	43.8	54	0.1837	11:03:38	28-Jul-09	20.1
282	20.2	43.3	53	0.1756	11:04:38	28-Jul-09	20.1
283	19.8	43.7	53	0.1833	11:05:38	28-Jul-09	20.1
284	20.6	43.5	53	0.2019	11:06:38	28-Jul-09	20.1
285	20	43.7	53	0.1944	11:07:38	28-Jul-09	20.1
286	20.3	44	53	0.1778	11:08:38	28-Jul-09	20.1
287	19.8	44	53	0.1779	11:09:38	28-Jul-09	20.0
288	19.7	44	53	0.1711	11:10:38	28-Jul-09	20.0
289	20.5	44	53	0.1805	11:11:38	28-Jul-09	20.0
290	21.6	44.2	53	0.1966	11:12:38	28-Jul-09	20.1
291	20.5	44.6	53	0.1771	11:13:38	28-Jul-09	20.1
292	20.1	43.8	52	0.1886	11:14:38	28-Jul-09	20.1
293	20.3	44.5	52	0.186	11:15:38	28-Jul-09	20.2
294	21	44.6	53	0.1778	11:16:38	28-Jul-09	20.3
295	21.6	44.8	53	0.1956	11:17:38	28-Jul-09	20.4

DataRam 4 Dust Monitor, Serial Number D464

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
193	9.8	29.6	55	0.1929	9:38:26	28-Jul-09	11.2
194	11.5	29.6	55	0.2001	9:39:26	28-Jul-09	11.3
195	12.4	29.6	55	0.2519	9:40:26	28-Jul-09	11.4
196	11	29.7	54	0.2161	9:41:26	28-Jul-09	11.3
197	10.7	29.7	54	0.2041	9:42:26	28-Jul-09	11.3
198	10.6	29.8	54	0.2061	9:43:26	28-Jul-09	11.3
199	10	29.8	54	0.1972	9:44:26	28-Jul-09	11.2
200	9.9	29.9	54	0.1903	9:45:26	28-Jul-09	11.2
201	9	30	54	0.1729	9:46:26	28-Jul-09	11.2
202	10	30	54	0.1872	9:47:26	28-Jul-09	11.1
203	10.5	30	53	0.1869	9:48:26	28-Jul-09	10.5
204	10.4	30.1	53	0.1984	9:49:26	28-Jul-09	10.4
205	12.3	30.1	53	0.1598	9:50:26	28-Jul-09	10.5
206	8.8	30.1	53	0.1656	9:51:26	28-Jul-09	10.5
207	9.7	30.1	53	0.1743	9:52:26	28-Jul-09	10.4
208	10	30.2	53	0.1847	9:53:26	28-Jul-09	10.4
209	10.7	30.2	53	0.2024	9:54:26	28-Jul-09	10.5
210	10.6	30.2	53	0.2075	9:55:26	28-Jul-09	10.4
211	10.2	30.3	52	0.1802	9:56:26	28-Jul-09	10.3
212	10	30.3	52	0.1835	9:57:26	28-Jul-09	10.2
213	10.1	30.4	52	0.1955	9:58:26	28-Jul-09	10.2
214	9.3	30.4	52	0.1896	9:59:26	28-Jul-09	10.1
215	9.8	30.5	52	0.1745	10:00:26	28-Jul-09	10.1
216	11.1	30.5	52	0.218	10:01:26	28-Jul-09	10.2
217	10.6	30.5	52	0.2016	10:02:26	28-Jul-09	10.3
218	10.6	30.6	52	0.1831	10:03:26	28-Jul-09	10.3
219	10.1	30.6	52	0.1852	10:04:26	28-Jul-09	10.3
220	14.3	30.7	52	0.2274	10:05:26	28-Jul-09	10.5
221	9.6	30.7	52	0.1759	10:06:26	28-Jul-09	10.3
222	9.7	30.7	52	0.169	10:07:26	28-Jul-09	10.4
223	10.6	30.8	52	0.1965	10:08:26	28-Jul-09	10.5
224	10.4	30.8	52	0.2133	10:09:26	28-Jul-09	10.5
225	10.6	30.8	51	0.2031	10:10:26	28-Jul-09	10.5
226	9.7	30.9	51	0.18	10:11:26	28-Jul-09	10.4
227	10.2	31	51	0.1861	10:12:26	28-Jul-09	10.4
228	10.2	31	51	0.1623	10:13:26	28-Jul-09	10.4
229	10.6	31	51	0.1822	10:14:26	28-Jul-09	10.5
230	10.5	31	51	0.1833	10:15:26	28-Jul-09	10.5
231	9.8	31.1	51	0.17	10:16:26	28-Jul-09	10.5
232	11.7	31.1	51	0.1958	10:17:26	28-Jul-09	10.6
233	10.1	31.1	51	0.2022	10:18:26	28-Jul-09	10.5
234	10.2	31.2	51	0.1683	10:19:26	28-Jul-09	10.5
235	9.7	31.2	50	0.1658	10:20:26	28-Jul-09	10.5
236	10.7	31.3	51	0.1755	10:21:26	28-Jul-09	10.3
237	10.7	31.3	50	0.1886	10:22:26	28-Jul-09	10.3
238	10.5	31.3	50	0.1887	10:23:26	28-Jul-09	10.4
239	10.7	31.4	50	0.1724	10:24:26	28-Jul-09	10.4
240	10	31.4	50	0.1732	10:25:26	28-Jul-09	10.4
241	10.5	31.4	50	0.1754	10:26:26	28-Jul-09	10.4
242	10.7	31.5	50	0.1755	10:27:26	28-Jul-09	10.4
243	9.8	31.5	50	0.1729	10:28:26	28-Jul-09	10.4
244	13.5	31.6	50	0.1779	10:29:26	28-Jul-09	10.6
245	9.5	31.6	50	0.1792	10:30:26	28-Jul-09	10.5
246	9.8	31.6	50	0.1702	10:31:26	28-Jul-09	10.5
247	9.6	31.6	50	0.1697	10:32:26	28-Jul-09	10.5
248	9.8	31.7	50	0.1759	10:33:26	28-Jul-09	10.4
249	98.2	31.7	50	0.3135	10:34:26	28-Jul-09	15.9
250	20.4	31.8	50	0.2594	10:35:26	28-Jul-09	16.5
251	10.9	31.8	50	0.227	10:36:26	28-Jul-09	16.6
252	9.5	31.9	50	0.178	10:37:26	28-Jul-09	16.5
253	9.3	31.9	49	0.177	10:38:26	28-Jul-09	16.4
254	9.4	32	49	0.1828	10:39:26	28-Jul-09	16.4
255	10.1	32	49	0.1638	10:40:26	28-Jul-09	16.3
256	9.9	32	49	0.1754	10:41:26	28-Jul-09	16.3
257	9.3	32.1	49	0.1803	10:42:26	28-Jul-09	16.2
258	11.5	32.1	49	0.1759	10:43:26	28-Jul-09	16.3
259	10.2	32.2	49	0.2064	10:44:26	28-Jul-09	16.3
260	11.8	32.2	49	0.1914	10:45:26	28-Jul-09	16.2
261	13.8	32.2	48	0.2653	10:46:26	28-Jul-09	16.5
262	9.1	32.3	48	0.1715	10:47:26	28-Jul-09	16.4
263	9.2	32.3	48	0.1409	10:48:26	28-Jul-09	16.4
264	10	32.3	48	0.1497	10:49:26	28-Jul-09	16.4
265	10	32.4	48	0.1547	10:50:26	28-Jul-09	10.9
266	10.4	32.4	48	0.173	10:51:26	28-Jul-09	10.3
267	9.9	32.5	48	0.1349	10:52:26	28-Jul-09	10.2
268	13.7	32.5	48	0.1738	10:53:26	28-Jul-09	10.5
269	10.2	32.5	48	0.1766	10:54:26	28-Jul-09	10.5
270	9.6	32.6	48	0.1564	10:55:26	28-Jul-09	10.5
271	9.3	32.6	48	0.1544	10:56:26	28-Jul-09	10.5
272	10	32.6	48	0.1462	10:57:26	28-Jul-09	10.5
273	10.1	32.7	47	0.1821	10:58:26	28-Jul-09	10.6
274	11.7	32.7	47	0.1897	10:59:26	28-Jul-09	10.6
275	11.7	32.7	47	0.2306	11:00:26	28-Jul-09	10.7
276	9.6	32.8	47	0.1548	11:01:26	28-Jul-09	10.5
277	10.3	32.8	47	0.1757	11:02:26	28-Jul-09	10.3
278	9.3	32.9	47	0.1544	11:03:26	28-Jul-09	10.3
279	12.9	32.9	47	0.2117	11:04:26	28-Jul-09	10.5
280	10.2	32.9	47	0.1702	11:05:26	28-Jul-09	10.6
281	10.7	33	46	0.1545	11:06:26	28-Jul-09	10.6
282	9.1	33	47	0.1479	11:07:26	28-Jul-09	10.5
283	9.7	33	46	0.1421	11:08:26	28-Jul-09	10.5
284	9.7	33.1	46	0.155	11:09:26	28-Jul-09	10.3
285	9.2	33.1	46	0.1357	11:10:26	28-Jul-09	10.2
286	9.5	33.1	46	0.1374	11:11:26	28-Jul-09	10.2
287	9.4	33.1	46	0.1517	11:12:26	28-Jul-09	10.2
288	9.9	33.2	46	0.1577	11:13:26	28-Jul-09	10.2
289	10	33.2	46	0.1521	11:14:26	28-Jul-09	10.2
290	10.1	33.3	46	0.1496	11:15:26	28-Jul-09	10.1
291	10.3	33.3	46	0.1654	11:16:26	28-Jul-09	10.0
292	9.8	33.3	45	0.1479	11:17:26	28-Jul-09	10.0

Appendix I
Ambient Air Dust Monitoring Results - SEAD-12 Removal Action

Seneca Army Depot Activity
Romulus, NY

DataRam 4 Dust Monitor, Serial Number D454

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
296	20.7	45	53	0.1812	11:18:38	28-Jul-09	20.4
297	20.5	45	53	0.1891	11:19:38	28-Jul-09	20.5
298	21.9	45.4	53	0.1974	11:20:38	28-Jul-09	20.6
299	22.4	46.3	53	0.2143	11:21:38	28-Jul-09	20.7
300	23.2	48.2	54	0.2291	11:22:38	28-Jul-09	20.9
301	23.2	49.2	55	0.1993	11:23:38	28-Jul-09	21.1
302	23.1	49.2	54	0.206	11:24:38	28-Jul-09	21.3
303	23.7	49.2	54	0.2046	11:25:38	28-Jul-09	21.5
304	23.1	49.3	54	0.1962	11:26:38	28-Jul-09	21.7
305	22.3	49.4	54	0.1918	11:27:38	28-Jul-09	21.8
306	24.1	49.2	54	0.1953	11:28:38	28-Jul-09	22.0
307	23.3	43.5	49	0.2578	11:29:38	28-Jul-09	22.2
308	22.4	41.3	48	0.3184	11:30:38	28-Jul-09	22.3
309	18.6	41.3	48	0.3808	11:31:38	28-Jul-09	22.2
310	16.2	41.4	48	0.5292	11:32:38	28-Jul-09	21.9
311	22.4	41.3	47	0.5292	11:33:38	28-Jul-09	21.9
312	22.3	41.4	47	0.3579	11:34:38	28-Jul-09	22.0
313	21.8	41.3	47	0.3524	11:35:38	28-Jul-09	22.1
314	19.6	41.4	47	0.3583	11:36:38	28-Jul-09	22.0
315	26.6	41.9	47	0.3629	11:37:38	28-Jul-09	22.2
316	25.8	41.5	47	0.4601	11:38:38	28-Jul-09	22.4
317	21.4	40.6	46	0.3933	11:39:38	28-Jul-09	22.3
318	21	40.1	46	0.3558	11:40:38	28-Jul-09	22.2
319	22.6	39.7	46	0.37	11:41:38	28-Jul-09	22.1
320	21.6	38.9	45	0.3289	11:42:38	28-Jul-09	22.0
321	12.9	38.4	44	0.4146	11:43:38	28-Jul-09	21.4
322	12.7	38	44	1.6367	11:44:38	28-Jul-09	20.7
323	14.2	37.9	44	1.2296	11:45:38	28-Jul-09	20.1
324	7.5	38.3	44	0.6305	11:46:38	28-Jul-09	19.2
325	15.6	38.6	44	0.8853	11:47:38	28-Jul-09	19.0
326	20.2	38.8	44	0.5397	11:48:38	28-Jul-09	19.3
327	15.3	38.2	43	0.3826	11:49:38	28-Jul-09	18.8
328	15.2	38.2	43	0.4218	11:50:38	28-Jul-09	18.4
329	3.6	38.2	43	0.3599	11:51:38	28-Jul-09	17.2
330	16.7	38.1	43	0.4234	11:52:38	28-Jul-09	17.1
331	14.6	38.2	43	0.3996	11:53:38	28-Jul-09	16.3
332	14.1	38.4	43	0.5762	11:54:38	28-Jul-09	15.6
333	15.8	38.3	43	0.5894	11:55:38	28-Jul-09	15.2
334	16.3	38.4	43	0.5624	11:56:38	28-Jul-09	14.9
335	13.6	38.4	43	0.9222	11:57:38	28-Jul-09	14.4
336	14.8	38.4	42	1.6215	11:58:38	28-Jul-09	13.9
337	13.5	38.3	42	0.722	11:59:38	28-Jul-09	14.0
338	14.3	38.4	42	0.7017	12:00:38	28-Jul-09	14.1
339	17.4	38.4	42	0.7182	12:01:38	28-Jul-09	14.3
340	16.5	38.5	42	0.6351	12:02:38	28-Jul-09	14.8
341	20.5	38.6	42	0.7118	12:03:38	28-Jul-09	15.2
342	20.7	38.7	42	1.4267	12:04:38	28-Jul-09	15.2
343	23.5	38.7	42	0.8179	12:05:38	28-Jul-09	15.7
344	27.5	38.8	42	0.7285	12:06:38	28-Jul-09	16.5
345	20.2	38.7	41	2.0017	12:07:38	28-Jul-09	17.5
346	21.7	38.8	41	3.8209	12:08:38	28-Jul-09	17.8
347	19.1	38.8	41	3.9832	12:09:38	28-Jul-09	18.1
348	18.9	38.8	41	3.8161	12:10:38	28-Jul-09	18.4
349	21.9	38.9	41	4.127	12:11:38	28-Jul-09	18.8
350	10.8	39	41	2.3388	12:12:38	28-Jul-09	18.4
351	6.8	38.9	41	1.3252	12:13:38	28-Jul-09	18.0
352	11.3	38.7	41	0.9159	12:14:38	28-Jul-09	17.8
353	13.1	38.9	41	3.0705	12:15:38	28-Jul-09	17.8
354	1	38.6	40	0.4882	12:16:38	28-Jul-09	16.9
355	10.3	38.9	40	1.7994	12:17:38	28-Jul-09	16.5
356	2.9	39	40	0.9254	12:18:38	28-Jul-09	15.6
357	9.9	39.2	40	0.3968	12:19:38	28-Jul-09	15.0
358	18.4	39.4	40	0.4894	12:20:38	28-Jul-09	14.8
359	9.5	39.2	40	0.3336	12:21:38	28-Jul-09	14.0
360	13.6	38.8	39	0.7198	12:22:38	28-Jul-09	13.1
361	11.7	39.5	40	1.1852	12:23:38	28-Jul-09	12.6
362	24.6	40	40	1.4496	12:24:38	28-Jul-09	12.7
363	15.3	39.1	40	1.7317	12:25:38	28-Jul-09	12.5
364	12.1	39.8	40	0.5183	12:26:38	28-Jul-09	12.1
365	9.4	39.8	40	0.4668	12:27:38	28-Jul-09	11.3
366	6.7	39.8	40	0.5627	12:28:38	28-Jul-09	11.0
367	1.3	40	40	0.3426	12:29:38	28-Jul-09	10.7
368	10.7	40	40	0.7257	12:30:38	28-Jul-09	10.7
369	9.4	39.9	40	0.3152	12:31:38	28-Jul-09	10.4
370	13.1	39.9	40	0.1934	12:32:38	28-Jul-09	11.2
371	17.9	39.9	40	0.6103	12:33:38	28-Jul-09	11.7
372	17.2	39.8	40	3.4302	12:34:38	28-Jul-09	12.6
373	16.8	39.8	40	3.7229	12:35:38	28-Jul-09	13.0
374	6.2	39.8	40	2.5813	12:36:38	28-Jul-09	12.2
375	16.8	39.8	40	3.2956	12:37:38	28-Jul-09	12.7
376	16.6	40	40	2.6488	12:38:38	28-Jul-09	12.9
377	19.2	39.7	39	3.6254	12:39:38	28-Jul-09	13.3
378	17.4	39.7	39	3.3944	12:40:38	28-Jul-09	12.9
379	19.7	39.6	39	3.2226	12:41:38	28-Jul-09	13.2
380	14.9	39.8	39	2.7201	12:42:38	28-Jul-09	13.3
381	7.8	40.9	40	2.2477	12:43:38	28-Jul-09	13.2
382	27.6	43.7	42	2.3837	12:44:38	28-Jul-09	14.5
383	33.1	45.4	43	0.4972	12:45:38	28-Jul-09	16.5
384	30.6	46	44	0.3498	12:46:38	28-Jul-09	17.8
385	26.8	47.2	44	0.2949	12:47:38	28-Jul-09	18.9
386	30	45.7	43	0.3937	12:48:38	28-Jul-09	19.9
387	36.4	45.1	43	0.6163	12:49:38	28-Jul-09	21.1
388	31	45	43	0.5718	12:50:38	28-Jul-09	21.9
389	26.6	44.2	42	0.4036	12:51:38	28-Jul-09	22.5
390	25	44.2	42	0.3601	12:52:38	28-Jul-09	23.7
391	25	44.2	42	0.3033	12:53:38	28-Jul-09	24.2
392	25.3	44.3	42	0.2623	12:54:38	28-Jul-09	24.8
393	24.7	44.4	42	0.2706	12:55:38	28-Jul-09	25.1
394	25.3	44.5	42	0.2809	12:56:38	28-Jul-09	25.6
395	27.3	44.5	42	0.2445	12:57:38	28-Jul-09	26.1

DataRam 4 Dust Monitor, Serial Number D464

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
293	9.8	33.4	45	0.1322	11:18:26	28-Jul-09	10.0
294	20.3	33.4	45	0.1822	11:19:26	28-Jul-09	10.7
295	13	33.4	45	0.2129	11:20:26	28-Jul-09	10.7
296	9.7	33.5	45	0.1413	11:21:26	28-Jul-09	10.6
297	9.8	33.5	45	0.1548	11:22:26	28-Jul-09	10.6
298	10.3	33.5	45	0.1486	11:23:26	28-Jul-09	10.7
299	10	33.6	45	0.1683	11:24:26	28-Jul-09	10.7
300	10.3	33.6	45	0.1573	11:25:26	28-Jul-09	10.7
301	10	33.6	45	0.1476	11:26:26	28-Jul-09	10.8
302	9.9	33.6	45	0.1499	11:27:26	28-Jul-09	10.8
303	10.1	33.7	45	0.1348	11:28:26	28-Jul-09	10.8
304	9.6	33.7	45	0.1394	11:29:26	28-Jul-09	10.8
305	10.3	33.7	45	0.1552	11:30:26	28-Jul-09	10.8
306	9.8	33.7	45	0.1437	11:31:26	28-Jul-09	10.8
307	9.9	33.8	45	0.1326	11:32:26	28-Jul-09	10.8
308	9.3	33.8	45	0.1449	11:33:26	28-Jul-09	10.8
309	9.4	33.9	45	0.1325	11:34:26	28-Jul-09	10.7
310	9.6	33.9	44	0.1351	11:35:26	28-Jul-09	10.1
311	23.5	33.9	44	0.3191	11:36:26	28-Jul-09	10.7
312	10.4	34	44	0.1932	11:37:26	28-Jul-09	10.8
313	13.1	34	44	0.1344	11:38:26	28-Jul-09	11.0
314	14.5	34	44	0.2425	11:39:26	28-Jul-09	11.2
315	10	34.1	44	0.1523	11:40:26	28-Jul-09	11.2
316	9.9	34.1	44	0.1267	11:41:26	28-Jul-09	11.2
317	10	34.1	44	0.1445	11:42:26	28-Jul-09	11.2
318	9.6	34.2	44	0.1344	11:43:26	28-Jul-09	11.2
319	9.8	34.2	44	0.1337	11:44:26	28-Jul-09	11.2
320	9.7	34.2	44	0.1301	11:45:26	28-Jul-09	11.2
321	9.8	34.3	44	0.1436	11:46:26	28-Jul-09	11.1
322	11	34.3	44	0.1692	11:47:26	28-Jul-09	11.2
323	10.2	34.3	44	0.1418	11:48:26	28-Jul-09	11.2
324	9.5	34.4	44	0.1319	11:49:26	28-Jul-09	11.3
325	10.6	34.4	43	0.1445	11:50:26	28-Jul-09	11.3
326	10.6	34.4	43	0.1554	11:51:26	28-Jul-09	11.4
327	10.8	34.5	43	0.1595	11:52:26	28-Jul-09	10.6
328	9.9	34.5	43	0.1521	11:53:26	28-Jul-09	10.6
329	10.2	34.5	43	0.1436	11:54:26	28-Jul-09	10.4
330	10.2	34.5	43	0.1602	11:55:26	28-Jul-09	10.1
331	9.5	34.6	43	0.139	11:56:26	28-Jul-09	10.1
332	10.8	34.6	43	0.1396	11:57:26	28-Jul-09	10.1
333	14.7	34.6	43	0.2256	11:58:26	28-Jul-09	10.4
334	10.6	34.6	43	0.1632	11:59:26	28-Jul-09	10.5
335	10.1	34.7	43	0.1493	12:00:26	28-Jul-09	10.5
336	14	34.7	42	0.1366	12:01:26	28-Jul-09	10.8
337	21.7	34.7	42	0.301	12:02:26	28-Jul-09	11.5
338	11	34.7	42	0.15	12:03:26	28-Jul-09	11.5
339	10.8	34.8	42	0.1366	12:04:26	28-Jul-09	11.6
340	10.7	34.8	42	0.1401	12:05:26	28-Jul-09	11.6
341	10.5	34.8	42	0.1371	12:06:26	28-Jul-09	11.6
342	11	34.8	42	0.1419	12:07:26	28-Jul-09	11.7
343	10.7	34.9	42	0.1519	12:08:26	28-Jul-09	11.7
344	10.5	34.9	42	0.1301	12:09:26	28-Jul-09	11.7
345	10.8	34.9	42	0.1508	12:10:26	28-Jul-09	11.7
346	10.6	34.9	42	0.1358	12:11:26	28-Jul-09	11.8
347	11.1	35	42	0.1419	12:12:26	28-Jul-09	11.9
348	11.1	35	42	0.171	12:13:26	28-Jul-09	11.9
349	11.2	35	42	0.1501	12:14:26	28-Jul-09	11.7
350	10.9	35	42	0.1509	12:15:26	28-Jul-09	11.7
351	10.8	35.1	41	0.1505	12:16:26	28-Jul-09	11.7
352	9.7	35.1	41	0.1513	12:17:26	28-Jul-09	11.4
353	10.4	35.1	41	0.1399	12:18:26	28-Jul-09	10.7
354	10.2	35.1	41	0.1486	12:19:26	28-Jul-09	10.7
355	10.7	35.1	41	0.1491	12:20:26	28-Jul-09	10.7
356	10.1	35.2	41	0.1247	12:21:26	28-Jul-09	10.6
357	10.4	35.2	41	0.1393	12:22:26	28-Jul-09	10.6
358	9.9	35.2	41	0.1326	12:23:26	28-Jul-09	10.6
359	9.7	35.2	41	0.1252	12:24:26	28-Jul-09	10.5
360	10.2	35.3	41	0.1352	12:25:26	28-Jul-09	10.5
361	10.2	35.3	41	0.1481	12:26:26	28-Jul-09	10.5
362	10.6	35.3	41	0.1625	12:27:26	28-Jul-09	10.5
363	9.6	35.3	41	0.1297	12:28:26	28-Jul-09	10.4
364	9.5	35.4	40	0.1421	12:29:26	28-Jul-09	10.3
365	9.8	35.4	40	0.1375	12:30:26	28-Jul-09	10.2
366	9.8	35.4	40	0.1397	12:31:26	28-Jul-09	10.1
367	9.7	35.4	40	0.1377	12:32:26	28-Jul-09	10.0
368	10.3	35.5	40	0.1419	12:33:26	28-Jul-09	10.1
369	10.1	35.5	40	0.1376	12:34:26	28-Jul-09	10.1
370	10.6	35.5	40	0.1486	12:35:26	28-Jul-09	10.1
371	10.1	35.5	40	0.147	12:36:26	28-Jul-09	10.0
372	10.7	35.5	40	0.1721	12:37:26	28-Jul-09	10.1
373	10.2	35.5	40	0.1502	12:38:26	28-Jul-09	10.1
374	10.4	35.6	40	0.1639	12:39:26	28-Jul-09	10.1
375	10	35.5	40	0.1579	12:40:26	28-Jul-09	10.1
376	10.2	35.6	40	0.1594	12:41:26	28-Jul-09	10.1
377	9.9	35.6	40	0.1472	12:42:26	28-Jul-09	10.1
378	10.2	35.6	39	0.1419	12:43:26	28-Jul-09	10.1
379	9.7	35.6	39	0.1328	12:44:26	28-Jul-09	10.1
380	11.5	35.7	39	0.1632	12:45:26	28-Jul-09	10.2
381	9.9	35.6	39	0.1548	12:46:26	28-Jul-09	10.2
382	10.2	35.7	39	0.1362	12:47:26	28-Jul-09	10.2
383	9	35.7	39	0.1258	12:48:26	28-Jul-09	10.2
384	9.8	35.7	39	0.1264	12:49:26	28-Jul-09	10.2
385	9.5	35.7	39	0.1516	12:50:26	28-Jul-09	10.1
386	90.6	35.7	39	0.2175	12:51:26	28-Jul-09	15.1
387	13.3	35.7	39	0.2796	12:52:26	28-Jul-09	15.3
388	9.6	35.8	39	0.1398	12:53:26	28-Jul-09	15.3
389	9.3	35.7	39	0.1448	12:54:26	28-Jul-09	15.2
390	9.1	35.8	39	0.1344	12:55:26	28-Jul-09	15.1
391	9.2	35.8	39	0.125	12:56:26	28-Jul-09	15.1
392	9.7	35.8	39	0.1378	12:57:26	28-Jul-09	15.0

Appendix I
Ambient Air Dust Monitoring Results - SEAD-12 Removal Action

Seneca Army Depot Activity
Romulus, NY

DataRam 4 Dust Monitor, Serial Number D454

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
396	29.2	44.6	42	0.2799	12:58:38	28-Jul-09	27.0
397	27.6	44.7	42	0.3245	12:59:38	28-Jul-09	28.2
398	27.4	44.7	42	0.3196	13:00:38	28-Jul-09	28.2
399	27.2	44.8	42	0.3742	13:01:38	28-Jul-09	27.8
400	28.2	44.8	42	0.4265	13:02:38	28-Jul-09	27.7
401	28.7	44.9	42	0.4025	13:03:38	28-Jul-09	27.8
402	28.5	45	42	0.4123	13:04:38	28-Jul-09	27.7
403	28.9	45.1	42	0.3845	13:05:38	28-Jul-09	27.2
404	30.2	45.1	42	0.457	13:06:38	28-Jul-09	27.2
405	30	45.2	42	0.4331	13:07:38	28-Jul-09	27.4
406	31.5	45.2	42	0.4827	13:08:38	28-Jul-09	27.8
407	31.3	45.1	42	0.5075	13:09:38	28-Jul-09	28.2
408	30.9	45.1	42	0.4892	13:10:38	28-Jul-09	28.6
409	31.3	45.1	42	0.524	13:11:38	28-Jul-09	29.0
410	30.8	45.2	42	0.5387	13:12:38	28-Jul-09	29.3
411	33.5	45.3	41	0.6662	13:13:38	28-Jul-09	29.7
412	36.9	45.4	41	0.9363	13:14:38	28-Jul-09	30.2
413	35.3	45.5	41	1.19	13:15:38	28-Jul-09	30.7
414	37.9	45.5	41	3.8373	13:16:38	28-Jul-09	31.3
415	38.3	45.7	41	2.8817	13:17:38	28-Jul-09	32.0
416	38.9	45.7	41	4.127	13:18:38	28-Jul-09	32.7
417	38.6	45.9	41	1.4838	13:19:38	28-Jul-09	33.3
418	35.5	45.8	41	0.6478	13:20:38	28-Jul-09	33.7
419	31.1	46	40	0.5869	13:21:38	28-Jul-09	33.9
420	27.3	46.2	41	0.3238	13:22:38	28-Jul-09	33.7
421	22.8	46.3	41	0.1591	13:23:38	28-Jul-09	33.2
422	19.5	47	41	0.5696	13:24:38	28-Jul-09	32.5
423	1.2	47.7	42	0.669	13:25:38	28-Jul-09	30.6
424	18	47.7	42	2.2053	13:26:38	28-Jul-09	29.8
425	10.3	47.8	42	0.9834	13:27:38	28-Jul-09	28.5
426	31.7	47.3	41	0.7748	13:28:38	28-Jul-09	28.6
427	23.8	47.2	41	0.2363	13:29:38	28-Jul-09	27.9
428	20.4	47.3	42	1.59	13:30:38	28-Jul-09	26.9
429	13.1	46.9	41	0.1424	13:31:38	28-Jul-09	25.5
430	10.5	47.6	42	0.3731	13:32:38	28-Jul-09	23.8
431	13.6	47.7	41	0.9754	13:33:38	28-Jul-09	22.3
432	17.6	47.4	41	0.8689	13:34:38	28-Jul-09	20.9
433	21.3	48.3	41	3.5162	13:35:38	28-Jul-09	19.9
434	26.9	47.3	40	2.9972	13:36:38	28-Jul-09	19.3
435	19.4	46.2	39	0.1456	13:37:38	28-Jul-09	18.6
436	25.3	46.1	39	0.183	13:38:38	28-Jul-09	18.5
437	21.8	46.2	39	0.1236	13:39:38	28-Jul-09	18.4
438	17.7	46.4	39	0.0428	13:40:38	28-Jul-09	18.3
439	20.4	46.3	39	0.0652	13:41:38	28-Jul-09	19.5
440	27.2	46.4	39	0.1237	13:42:38	28-Jul-09	20.1
441	24.6	46.7	40	0.1557	13:43:38	28-Jul-09	21.0
442	23.3	46.7	40	0.2694	13:44:38	28-Jul-09	20.4
443	24.6	46.8	40	0.59	13:45:38	28-Jul-09	20.5
444	22.8	46.9	40	0.4727	13:46:38	28-Jul-09	20.6
445	22.2	46.8	40	0.4079	13:47:38	28-Jul-09	21.2
446	22.3	46.9	40	0.5	13:48:38	28-Jul-09	21.9
447	21.5	46.8	40	0.3254	13:49:38	28-Jul-09	22.4
448	17.6	47	39	0.5245	13:50:38	28-Jul-09	22.4
449	13.3	47.1	39	0.5865	13:51:38	28-Jul-09	21.9
450	16.5	47.1	39	0.3379	13:52:38	28-Jul-09	21.3
451	15	47.2	39	0.3608	13:53:38	28-Jul-09	21.0
452	10.6	47.4	40	0.4076	13:54:38	28-Jul-09	20.1
453	17.3	47.6	40	0.3422	13:55:38	28-Jul-09	19.8
454	21.8	48.2	40	0.4452	13:56:38	28-Jul-09	20.1
455	21.9	47.5	39	0.3624	13:57:38	28-Jul-09	20.2
456	24.4	48.1	40	0.4788	13:58:38	28-Jul-09	20.0
457	27	49.2	40	0.7607	13:59:38	28-Jul-09	20.1
458	25	48.2	40	0.4371	14:00:38	28-Jul-09	20.2
459	23.9	48	39	0.3962	14:01:38	28-Jul-09	20.2
460	24.1	47.2	39	0.5019	14:02:38	28-Jul-09	20.3
461	22.1	47	39	0.4535	14:03:38	28-Jul-09	20.3
462	22.7	47.1	39	0.4947	14:04:38	28-Jul-09	20.3
463	22.7	47.2	39	0.5776	14:05:38	28-Jul-09	20.4
464	21.8	47.2	38	0.4727	14:06:38	28-Jul-09	20.6
465	19.7	47.1	38	0.7025	14:07:38	28-Jul-09	21.0
466	23	47.2	38	0.6621	14:08:38	28-Jul-09	21.4
467	20	47.3	38	0.6451	14:09:38	28-Jul-09	21.8
468	16.2	47.2	38	2.4146	14:10:38	28-Jul-09	22.1
469	13.9	47.2	38	2.8245	14:11:38	28-Jul-09	21.9
470	20.1	47.3	38	0.6922	14:12:38	28-Jul-09	21.8
471	19.1	47.4	38	0.5734	14:13:38	28-Jul-09	21.6
472	13.9	47.4	38	0.7884	14:14:38	28-Jul-09	21.0
473	20.6	47.4	37	3.5364	14:15:38	28-Jul-09	20.6
474	17.6	47.4	37	3.6559	14:16:38	28-Jul-09	20.1
475	18.3	47.5	37	2.3642	14:17:38	28-Jul-09	19.7
476	20.1	47.4	37	2.6779	14:18:38	28-Jul-09	19.5
477	19.5	47.2	37	0.5616	14:19:38	28-Jul-09	19.3
478	19.7	47.2	38	0.6155	14:20:38	28-Jul-09	19.1
479	18.3	47.1	38	0.7884	14:21:38	28-Jul-09	18.9
480	19.9	47.1	38	0.4521	14:22:38	28-Jul-09	18.7
481	22	47.1	39	0.4906	14:23:38	28-Jul-09	18.9
482	21.8	47.2	39	0.3876	14:24:38	28-Jul-09	18.8
483	22.2	47.4	39	0.4168	14:25:38	28-Jul-09	19.0
484	22	47.2	39	0.4247	14:26:38	28-Jul-09	19.3
485	23.4	47	39	0.486	14:27:38	28-Jul-09	19.9
486	21.9	47	39	0.4008	14:28:38	28-Jul-09	20.0
487	22.9	47	39	0.3875	14:29:38	28-Jul-09	20.3
488	23.4	47	39	0.4012	14:30:38	28-Jul-09	20.9
489	21	47.1	39	0.4224	14:31:38	28-Jul-09	20.9
490	22.2	47.1	39	0.4754	14:32:38	28-Jul-09	21.2
491	22.3	46.8	39	0.4205	14:33:38	28-Jul-09	21.4
492	22.7	46.9	39	0.3662	14:34:38	28-Jul-09	21.6
493	23.5	47.8	39	0.375	14:35:38	28-Jul-09	21.8
494	25.5	48.9	39	0.4089	14:36:38	28-Jul-09	22.2
495	23.7	49	40	0.5672	14:37:38	28-Jul-09	22.5

DataRam 4 Dust Monitor, Serial Number D464

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
393	9.3	35.8	39	0.1423	12:58:26	28-Jul-09	15.0
394	10.1	35.9	38	0.1488	12:59:26	28-Jul-09	15.0
395	10.7	35.9	39	0.1475	13:00:26	28-Jul-09	15.1
396	10.6	35.8	38	0.1302	13:01:26	28-Jul-09	15.0
397	9.9	35.8	39	0.16	13:02:26	28-Jul-09	15.0
398	9.2	35.9	38	0.1617	13:03:26	28-Jul-09	14.9
399	9	35.9	38	0.1483	13:04:26	28-Jul-09	14.9
400	9.2	35.9	38	0.142	13:05:26	28-Jul-09	14.9
401	38.5	35.9	38	0.2386	13:06:26	28-Jul-09	16.7
402	10.7	35.9	38	0.1704	13:07:26	28-Jul-09	11.7
403	9.5	36	38	0.1441	13:08:26	28-Jul-09	11.5
404	16.8	36	38	0.2837	13:09:26	28-Jul-09	11.9
405	9.7	36	38	0.1633	13:10:26	28-Jul-09	12.0
406	8.5	36	38	0.1315	13:11:26	28-Jul-09	11.9
407	8.5	36	38	0.1385	13:12:26	28-Jul-09	11.9
408	9.3	36	38	0.1565	13:13:26	28-Jul-09	11.8
409	9.2	36	38	0.1621	13:14:26	28-Jul-09	11.8
410	9.1	36.1	38	0.1486	13:15:26	28-Jul-09	11.8
411	9.5	36.1	38	0.1425	13:16:26	28-Jul-09	11.7
412	9.2	36.1	37	0.1613	13:17:26	28-Jul-09	11.6
413	8.6	36.1	38	0.1644	13:18:26	28-Jul-09	11.5
414	7.8	36.1	37	0.1449	13:19:26	28-Jul-09	11.4
415	8.2	36.1	37	0.1321	13:20:26	28-Jul-09	11.4
416	8	36.1	37	0.1475	13:21:26	28-Jul-09	11.3
417	7.9	36.1	37	0.1516	13:22:26	28-Jul-09	9.4
418	9.7	36.1	37	0.1556	13:23:26	28-Jul-09	9.3
419	14.6	36.1	37	0.1887	13:24:26	28-Jul-09	9.7
420	9.3	36.2	37	0.1669	13:25:26	28-Jul-09	9.2
421	8.6	36.2	37	0.1393	13:26:26	28-Jul-09	9.1
422	10.5	36.2	37	0.1546	13:27:26	28-Jul-09	9.3
423	10	36.2	37	0.1654	13:28:26	28-Jul-09	9.3
424	9.3	36.2	37	0.1462	13:29:26	28-Jul-09	9.3
425	8.3	36.2	37	0.1381	13:30:26	28-Jul-09	9.3
426	8.3	36.2	37	0.1502	13:31:26	28-Jul-09	9.2
427	8.3	36.3	37	0.1418	13:32:26	28-Jul-09	9.2
428	7.8	36.3	37	0.1516	13:33:26	28-Jul-09	9.1
429	7.5	36.3	37	0.154	13:34:26	28-Jul-09	9.0
430	24.9	36.3	37	0.3171	13:35:26	28-Jul-09	10.1
431	30.5	36.3	37	0.4829	13:36:26	28-Jul-09	11.5
432	7.9	36.4	36	0.1501	13:37:26	28-Jul-09	11.5
433	8.1	36.4	36	0.144	13:38:26	28-Jul-09	11.5
434	7.8	36.4	36	0.1464	13:39:26	28-Jul-09	11.4
435	8.7	36.4	36	0.1644	13:40:26	28-Jul-09	11.0
436	8.1	36.4	37	0.1315	13:41:26	28-Jul-09	10.9
437	8.1	36.4	37	0.1351	13:42:26	28-Jul-09	10.9
438	8	36.4	37	0.1333	13:43:26	28-Jul-09	10.7
439	8.9	36.4	37	0.1369	13:44:26	28-Jul-09	10.7
440	8.7	36.4	37	0.1395	13:45:26	28-Jul-09	10.6
441	20.8	36.4	37	0.275	13:46:26	28-Jul-09	11.4
442	15.6	36.4	37	0.2114	13:47:26	28-Jul-09	11.9
443	8.8	36.5	37	0.1649	13:48:26	28-Jul-09	11.9
444	29.1	36.5	37	0.158	13:49:26	28-Jul-09	13.2
445	23.9	36.5	37	0.3235	13:50:26	28-Jul-09	14.2
446	8.2	36.5	37	0.1797	13:51:26	28-Jul-09	13.2
447	8.8	36.5	36	0.1355	13:52:26	28-Jul-09	11.8
448	9.7	36.6	37	0.1484	13:53:26	28-Jul-09	12.0
449	8.9	36.6	37	0.1491	13:54:26	28-Jul-09	12.0
450	7.7	36.6	37	0.1471	13:55:26	28-Jul-09	12.0
451	7.7	36.6	36	0.1297	13:56:26	28-Jul-09	11.9
452	9.8	36.6	36	0.1726	13:57:26	28-Jul-09	12.0
453	8.8	36.6	36	0.1571	13:58:26	28-Jul-09	12.1
454	7.8	36.7	36	0.1453	13:59:26	28-Jul-09	12.1
455	7.2	36.7	36	0.1365	14:00:26	28-Jul-09	12.0
456	8.9	36.7	36	0.1379	14:01:26	28-Jul-09	12.0
457	9.6	36.7	36	0.1727	14:02:26	28-Jul-09	11.3
458	58.3	36.7	36	0.3451	14:03:26	28-Jul-09	14.0
459	13.6	36.7	36	0.3821	14:04:26	28-Jul-09	14.3
460	99.2	36.7	36	0.2233	14:05:26	28-Jul-09	18.6
461	68.7	36.7	36	0.9784	14:06:26	28-Jul-09	21.4
462	62.1	36.7	36	0.5272	14:07:26	28-Jul-09	24.8
463	16.7	36.7	36	0.4447	14:08:26	28-Jul-09	25.3
464	9.2	36.8	36	0.1468	14:09:26	28-Jul-09	25.3
465	9.5	36.8	37	0.1594	14:10:26	28-Jul-09	25.3
466	9.5	36.8	36	0.1811	14:11:26	28-Jul-09	25.4
467	8.1	36.8	36	0.1598	14:12:26	28-Jul-09	25.4
468	18.7	36.9	36	0.2122	14:13:26	28-Jul-09	26.0
469	8.4	36.9	36	0.1467	14:14:26	28-Jul-09	26.0
470	8	36.9	36	0.1393	14:15:26	28-Jul-09	26.0
471	7.9	36.9	36	0.1487	14:16:26	28-Jul-09	26.0
472	8	37	35	0.1323	14:17:26	28-Jul-09	26.0
473	11.9	37	35	0.144	14:18:26	28-Jul-09	26.1
474	13.4	37	35	0.2404	14:19:26	28-Jul-09	23.3
475	10.5	37	35	0.1887	14:20:26	28-Jul-09	23.1
476	20.2	37	35	0.2717	14:21:26	28-Jul-09	18.2
477	12.9	37	35	0.3053	14:22:26	28-Jul-09	14.7
478	8.8	37	36	0.1449	14:23:26	28-Jul-09	11.4
479	9.7	37	35	0.1645	14:24:26	28-Jul-09	10.9
480	8.6	37	36	0.1364	14:25:26	28-Jul-09	10.9
481	9.5	36.9	36	0.1183	14:26:26	28-Jul-09	10.9
482	114.9	36.9	36	0.3053	14:27:26	28-Jul-09	17.5
483	46.7	36.9	36	0.3904	14:28:26	28-Jul-09	19.9
484	20.7	37	36	0.3146	14:29:26	28-Jul-09	20.0
485	108.5	36.9	36	0.2961	14:30:26	28-Jul-09	26.3
486	32.8	36.9	36	0.372	14:31:26	28-Jul-09	27.8
487	13	37	36	0.1886	14:32:26	28-Jul-09	28.1
488	16.7	37	36	0.2473	14:33:26	28-Jul-09	28.7
489	8.9	37	36	0.1512	14:34:26	28-Jul-09	28.5
490	9	37	36	0.1344	14:35:26	28-Jul-09	28.2
491	265.2	37	36	0.3082	14:36:26	28-Jul-09	44.1
492	14.4	37	36	0.3664	14:37:26	28-Jul-09	43.8

Appendix I
Ambient Air Dust Monitoring Results - SEAD-12 Removal Action

Seneca Army Depot Activity
Romulus, NY

DataRam 4 Dust Monitor, Serial Number D454

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
496	21.7	48.3	39	0.4379	14:38:38	28-Jul-09	22.6
497	19.8	47.1	39	0.9787	14:39:38	28-Jul-09	22.5
498	20.7	47.1	39	1.5739	14:40:38	28-Jul-09	22.4
499	22.5	47.2	39	0.8074	14:41:38	28-Jul-09	22.5
500	22.7	47.1	38	0.5619	14:42:38	28-Jul-09	22.5
501	23	46.9	38	0.3849	14:43:38	28-Jul-09	22.5
502	21.6	47	38	0.4475	14:44:38	28-Jul-09	22.5
503	21.6	47	38	0.6133	14:45:38	28-Jul-09	22.4
504	20.7	46.8	38	0.6639	14:46:38	28-Jul-09	22.2
505	20	46.8	37	0.6838	14:47:38	28-Jul-09	22.1
506	22.1	46.8	37	0.4932	14:48:38	28-Jul-09	22.1
507	19.2	46.8	38	0.7372	14:49:38	28-Jul-09	21.9
508	20.5	46.7	38	0.6437	14:50:38	28-Jul-09	21.8
509	21	46.7	38	0.6675	14:51:38	28-Jul-09	21.6
510	20.9	46.7	37	0.4867	14:52:38	28-Jul-09	21.4
511	18.6	46.7	37	0.6072	14:53:38	28-Jul-09	21.0
512	22.8	47	37	0.6166	14:54:38	28-Jul-09	21.1
513	18.4	47.2	37	2.679	14:55:38	28-Jul-09	21.0
514	23.7	47.1	37	3.3772	14:56:38	28-Jul-09	21.2
515	25.8	47	37	4.1101	14:57:38	28-Jul-09	21.4
516	25.2	47.1	37	0.965	14:58:38	28-Jul-09	21.6
517	22.9	47.2	37	0.4126	14:59:38	28-Jul-09	21.6
518	22.2	47.2	38	0.5362	15:00:38	28-Jul-09	21.6
519	22	47.2	38	0.8228	15:01:38	28-Jul-09	21.6
520	20.5	47	38	1.2117	15:02:38	28-Jul-09	21.6
521	22.2	47	38	0.523	15:03:38	28-Jul-09	21.8
522	20.7	46.8	38	0.663	15:04:38	28-Jul-09	21.7
523	22.9	46.7	37	1.2737	15:05:38	28-Jul-09	21.9
524	20.3	46.7	38	3.3224	15:06:38	28-Jul-09	21.9
525	22.7	46.7	38	0.9401	15:07:38	28-Jul-09	22.0
526	24.4	46.6	38	0.6805	15:08:38	28-Jul-09	22.2
527	21.3	46.5	38	0.5792	15:09:38	28-Jul-09	22.4
528	24.1	46.6	38	0.4525	15:10:38	28-Jul-09	22.5
529	22.7	46.6	38	0.4414	15:11:38	28-Jul-09	22.7
530	22.6	46.6	38	0.4264	15:12:38	28-Jul-09	22.7
531	22.7	46.5	38	1.1072	15:13:38	28-Jul-09	22.5
532	23.7	46.5	38	0.455	15:14:38	28-Jul-09	22.4
533	21.6	46.6	38	0.3511	15:15:38	28-Jul-09	22.3
534	22.3	46.5	38	0.2782	15:16:38	28-Jul-09	22.3
535	24.2	46.4	38	0.2973	15:17:38	28-Jul-09	22.4
536	26.6	46.3	38	0.3688	15:18:38	28-Jul-09	22.8
537	25.9	46.4	38	0.2812	15:19:38	28-Jul-09	23.0
538	24.7	46.3	38	0.2901	15:20:38	28-Jul-09	23.3
539	24.6	46.2	38	0.2379	15:21:38	28-Jul-09	23.4
540	26.7	46.2	38	0.2389	15:22:38	28-Jul-09	23.8
541	27	46.2	38	0.2628	15:23:38	28-Jul-09	24.1
542	25.8	46.2	38	0.2562	15:24:38	28-Jul-09	24.2
543	25.3	46.1	38	0.2765	15:25:38	28-Jul-09	24.4
544	24.4	46.1	38	0.2373	15:26:38	28-Jul-09	24.4
545	25.2	46.1	38	0.2486	15:27:38	28-Jul-09	24.6
546	26.1	46.1	38	0.2441	15:28:38	28-Jul-09	24.8
547	30.5	46.1	38	0.2926	15:29:38	28-Jul-09	25.3
548	27.3	46.1	38	0.3066	15:30:38	28-Jul-09	25.5
549	27.8	46.1	39	0.2873	15:31:38	28-Jul-09	25.9
550	27.2	46.1	39	0.2714	15:32:38	28-Jul-09	26.2
551	27.4	46.2	39	0.262	15:33:38	28-Jul-09	26.4
552	26.8	46.2	39	0.2582	15:34:38	28-Jul-09	26.4
553	27.5	46.2	39	0.2609	15:35:38	28-Jul-09	26.5
554	27.2	46.2	38	0.268	15:36:38	28-Jul-09	26.7
555	26.5	46.3	38	0.2129	15:37:38	28-Jul-09	26.8
556	27.8	46.4	38	0.2348	15:38:38	28-Jul-09	26.9
557	27.2	46.4	38	0.2174	15:39:38	28-Jul-09	26.9
558	27.7	46.3	38	0.2249	15:40:38	28-Jul-09	27.0
559	27.5	46.4	38	0.2385	15:41:38	28-Jul-09	27.1
560	27.2	46.3	38	0.2261	15:42:38	28-Jul-09	27.3
561	27.9	46.3	38	0.2514	15:43:38	28-Jul-09	27.5
562	29.6	46.4	38	0.2659	15:44:38	28-Jul-09	27.7
563	29.7	46.5	38	0.2632	15:45:38	28-Jul-09	27.6
564	29.9	46.6	38	0.2634	15:46:38	28-Jul-09	27.8
565	30.3	46.6	38	0.2909	15:47:38	28-Jul-09	28.0
566	30	46.8	38	0.2819	15:48:38	28-Jul-09	28.1
567	28.8	47.1	38	0.2582	15:49:38	28-Jul-09	28.2
568	29.5	46.9	38	0.2855	15:50:38	28-Jul-09	28.4
569	30	46.5	38	0.307	15:51:38	28-Jul-09	28.6
570	31	46.6	37	0.2903	15:52:38	28-Jul-09	28.8
571	29.6	46.6	37	0.2734	15:53:38	28-Jul-09	29.0
572	28.4	46.7	37	0.2311	15:54:38	28-Jul-09	29.0
573	29.3	47	37	0.2322	15:55:38	28-Jul-09	29.2
574	31	47	37	0.2629	15:56:38	28-Jul-09	29.4
575	31.7	47.2	37	0.2789	15:57:38	28-Jul-09	29.6
576	31	46.9	37	0.289	15:58:38	28-Jul-09	29.9
577	30.5	46.7	37	0.2975	15:59:38	28-Jul-09	30.0
578	30.9	46.8	37	0.2936	16:00:38	28-Jul-09	30.1
579	30.2	47	37	0.2786	16:01:38	28-Jul-09	30.1
580	28.3	47	37	0.3213	16:02:38	28-Jul-09	30.0
581	28.8	47.1	37	0.3704	16:03:38	28-Jul-09	29.9
582	29.5	46.8	37	0.3549	16:04:38	28-Jul-09	29.9
583	28.6	46.8	37	0.4462	16:05:38	28-Jul-09	29.9
584	31.4	46.8	37	0.3196	16:06:38	28-Jul-09	30.0
585	28.4	46.8	37	0.3421	16:07:38	28-Jul-09	29.9
586	31.1	46.6	37	0.266	16:08:38	28-Jul-09	29.9
587	30.1	46.7	37	0.2759	16:09:38	28-Jul-09	30.0
588	31.3	46.7	37	0.3314	16:10:38	28-Jul-09	30.1
589	31.1	46.6	36	0.3142	16:11:38	28-Jul-09	30.2
590	30.5	46.6	36	0.2701	16:12:38	28-Jul-09	30.2
591	29.3	46.5	36	0.3403	16:13:38	28-Jul-09	30.1
592	31.6	46.7	36	0.3455	16:14:38	28-Jul-09	30.1
593	32.6	46.7	36	0.2998	16:15:38	28-Jul-09	30.2
594	31.7	46.7	37	0.2749	16:16:38	28-Jul-09	30.3
595	31.8	46.5	37	0.2544	16:17:38	28-Jul-09	30.4

DataRam 4 Dust Monitor, Serial Number D464

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
493	10.5	37	36	0.186	14:38:26	28-Jul-09	43.6
494	8.8	37	36	0.1579	14:39:26	28-Jul-09	43.6
495	11.3	37	36	0.1645	14:40:26	28-Jul-09	43.7
496	11	37.1	36	0.1827	14:41:26	28-Jul-09	43.9
497	9.5	37.1	36	0.1441	14:42:26	28-Jul-09	43.9
498	36	37.1	35	0.297	14:43:26	28-Jul-09	38.9
499	26.4	37.1	35	0.6053	14:44:26	28-Jul-09	37.7
500	8.5	37.1	35	0.1818	14:45:26	28-Jul-09	36.9
501	7.4	37.1	35	0.1387	14:46:26	28-Jul-09	30.6
502	11	37.2	35	0.167	14:47:26	28-Jul-09	29.2
503	10.4	37.2	35	0.1857	14:48:26	28-Jul-09	29.1
504	10	37.2	35	0.1589	14:49:26	28-Jul-09	28.6
505	8.2	37.2	35	0.1663	14:50:26	28-Jul-09	28.6
506	7.6	37.2	35	0.1426	14:51:26	28-Jul-09	28.5
507	7.4	37.2	35	0.1423	14:52:26	28-Jul-09	12.4
508	20.8	37.2	35	0.264	14:53:26	28-Jul-09	12.8
509	16	37.2	35	0.3487	14:54:26	28-Jul-09	13.1
510	7.7	37.2	34	0.1655	14:55:26	28-Jul-09	13.1
511	9.8	37.2	34	0.1531	14:56:26	28-Jul-09	13.0
512	9	37.3	35	0.1498	14:57:26	28-Jul-09	12.9
513	8.6	37.3	34	0.1493	14:58:26	28-Jul-09	12.8
514	13.6	37.3	34	0.1432	14:59:26	28-Jul-09	11.4
515	18.8	37.3	35	0.2904	15:00:26	28-Jul-09	10.9
516	8.8	37.4	35	0.1645	15:01:26	28-Jul-09	10.9
517	11.8	37.4	35	0.1325	15:02:26	28-Jul-09	11.2
518	15.7	37.4	35	0.1908	15:03:26	28-Jul-09	11.5
519	31.5	37.4	35	0.2956	15:04:26	28-Jul-09	12.8
520	13.8	37.4	35	0.3429	15:05:26	28-Jul-09	13.1
521	8.8	37.4	35	0.1473	15:06:26	28-Jul-09	13.1
522	9.6	37.4	35	0.1261	15:07:26	28-Jul-09	13.2
523	8.7	37.5	35	0.129	15:08:26	28-Jul-09	13.3
524	10	37.4	35	0.1393	15:09:26	28-Jul-09	12.6
525	10.2	37.5	35	0.1566	15:10:26	28-Jul-09	12.3
526	9.6	37.5	35	0.1371	15:11:26	28-Jul-09	12.4
527	9.6	37.5	35	0.124	15:12:26	28-Jul-09	12.4
528	9.4	37.5	35	0.1266	15:13:26	28-Jul-09	12.4
529	9.3	37.5	35	0.1481	15:14:26	28-Jul-09	12.5
530	10	37.5	35	0.1327	15:15:26	28-Jul-09	12.2
531	60.9	37.5	35	0.3055	15:16:26	28-Jul-09	14.9
532	53.3	37.5	35	0.6605	15:17:26	28-Jul-09	17.6
533	11.1	37.6	35	0.1899	15:18:26	28-Jul-09	17.6
534	10.5	37.5	35	0.1274	15:19:26	28-Jul-09	17.3
535	10.8	37.6	34	0.1128	15:20:26	28-Jul-09	16.0
536	11.5	37.6	34	0.1329	15:21:26	28-Jul-09	15.8
537	11.3	37.6	34	0.1338	15:22:26	28-Jul-09	16.0
538	39.1	37.6	34	0.4758	15:23:26	28-Jul-09	17.8
539	14	37.6	34	0.2602	15:24:26	28-Jul-09	18.2
540	12.5	37.6	34	0.1505	15:25:26	28-Jul-09	18.3
541	14.5	37.6	34	0.1629	15:26:26	28-Jul-09	18.6
542	11.5	37.6	34	0.1131	15:27:26	28-Jul-09	18.7
543	11.5	37.6	34	0.1188	15:28:26	28-Jul-09	18.8
544	12.3	37.6	34	0.1456	15:29:26	28-Jul-09	19.0
545	11.9	37.6	34	0.1482	15:30:26	28-Jul-09	19.2
546	30.7	37.7	34	0.2435	15:31:26	28-Jul-09	20.5
547	14.1	37.7	34	0.2159	15:32:26	28-Jul-09	17.5
548	12.5	37.7	34	0.1206	15:33:26	28-Jul-09	15.0
549	12.1	37.7	34	0.1232	15:34:26	28-Jul-09	15.1
550	11	37.7	34	0.1126	15:35:26	28-Jul-09	15.1
551	52.5	37.7	35	0.4204	15:36:26	28-Jul-09	17.7
552	22.4	37.7	34	0.4689	15:37:26	28-Jul-09	18.4
553	17.4	37.7	34	0.2173	15:38:26	28-Jul-09	18.8
554	11.7	37.7	34	0.1336	15:39:26	28-Jul-09	17.0
555	34	37.7	34	0.1893	15:40:26	28-Jul-09	18.3
556	26.9	37.7	34	0.3782	15:41:26	28-Jul-09	19.2
557	19.2	37.8	34	0.2484	15:42:26	28-Jul-09	19.5
558	13.3	37.8	34	0.1568	15:43:26	28-Jul-09	19.6
559	11.6	37.8	34	0.1201	15:44:26	28-Jul-09	19.6
560	17.5	37.8	34	0.2027	15:45:26	28-Jul-09	19.9
561	12.6	37.8	34	0.1417	15:46:26	28-Jul-09	20.0
562	12.6	37.8	34	0.1368	15:47:26	28-Jul-09	18.8
563	37.2	37.8	34	0.1766	15:48:26	28-Jul-09	20.3
564	46.9	37.9	34	0.401	15:49:26	28-Jul-09	22.4
565	26.8	37.9	34	0.3613	15:50:26	28-Jul-09	23.4
566	60.5	37.9	34	0.2045	15:51:26	28-Jul-09	26.4
567	32.7	37.9	34	0.5321	15:52:26	28-Jul-09	25.2
568	15.9	37.9	34	0.231	15:53:26	28-Jul-09	24.8
569	14.1	37.9	34	0.1427	15:54:26	28-Jul-09	24.6
570	13.5	37.9	34	0.1269	15:55:26	28-Jul-09	24.7
571	13.2	37.9	34	0.1255	15:56:26	28-Jul-09	23.4
572	14.4	37.9	34	0.1287	15:57:26	28-Jul-09	22.6
573	14.1	38	34	0.1356	15:58:26	28-Jul-09	22.3
574	14.6	38	34	0.1335	15:59:26	28-Jul-09	22.4
575	16.3	38	34	0.1768	16:00:26	28-Jul-09	22.7
576	13.4	38	34	0.1294	16:01:26	28-Jul-09	22.4
577	31.4	38	33	0.2268	16:02:26	28-Jul-09	23.6
578	14.4	38	33	0.1834	16:03:26	28-Jul-09	23.7
579	13.7	38	33	0.1187	16:04:26	28-Jul-09	22.2
580	15.1	38	33	0.1329	16:05:26	28-Jul-09	20.3
581	15	38	33	0.1517	16:06:26	28-Jul-09	19.5
582	13.8	38	33	0.1269	16:07:26	28-Jul-09	16.6
583	13.7	38	33	0.1279	16:08:26	28-Jul-09	15.4
584	14.2	38	33	0.1379	16:09:26	28-Jul-09	15.3
585	31.3	38	33	0.2671	16:10:26	28-Jul-09	16.4
586	21.7	38	33	0.2841	16:11:26	28-Jul-09	16.9
587	14.2	37.9	33	0.1507	16:12:26	28-Jul-09	17.0
588	14.4	37.9	33	0.1335	16:13:26	28-Jul-09	17.0
589	16.1	37.9	33	0.1272	16:14:26	28-Jul-09	17.1
590	28.3	37.9	33	0.2689	16:15:26	28-Jul-09	17.9
591	14.7	37.8	33	0.1514	16:16:26	28-Jul-09	17.8
592	14.2	37.8	33	0.1327	16:17:26	28-Jul-09	17.9

Appendix I
Ambient Air Dust Monitoring Results - SEAD-12 Removal Action

Seneca Army Depot Activity
Romulus, NY

DataRam 4 Dust Monitor, Serial Number D454

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
596	31.4	46.5	37	0.2427	16:18:38	28-Jul-09	30.6
597	32.5	46.5	37	0.31	16:19:38	28-Jul-09	30.8
598	32.2	46.5	37	0.3241	16:20:38	28-Jul-09	31.0
599	30.9	46.3	37	0.2938	16:21:38	28-Jul-09	31.1
600	30.6	46.3	37	0.2993	16:22:38	28-Jul-09	31.1
601	30.1	46.3	37	0.2904	16:23:38	28-Jul-09	31.2
602	31.1	46.3	37	0.3108	16:24:38	28-Jul-09	31.2
603	30.8	46.3	37	0.3168	16:25:38	28-Jul-09	31.2
604	26.7	46.1	37	0.4423	16:26:38	28-Jul-09	30.9
605	30	46.2	37	0.4602	16:27:38	28-Jul-09	30.9
606	28.9	46.1	37	0.4357	16:28:38	28-Jul-09	30.8
607	32.3	46.1	37	0.4839	16:29:38	28-Jul-09	31.0
608	26.4	46	38	0.4148	16:30:38	28-Jul-09	30.6
609	26.6	46	37	0.436	16:31:38	28-Jul-09	30.3
610	26.6	45.9	38	0.5514	16:32:38	28-Jul-09	29.9
611	26	46	38	0.4823	16:33:38	28-Jul-09	29.6
612	14.8	46	38	0.6153	16:34:38	28-Jul-09	28.5
613	27.5	45.9	38	0.4592	16:35:38	28-Jul-09	28.2
614	27.8	45.9	38	0.4776	16:36:38	28-Jul-09	27.9
615	25.2	45.9	38	0.8124	16:37:38	28-Jul-09	27.6
616	24.1	46.1	38	0.9767	16:38:38	28-Jul-09	27.2
617	28	46.2	39	0.537	16:39:38	28-Jul-09	27.1
618	27.1	46.1	38	0.4068	16:40:38	28-Jul-09	26.8
619	27.7	46.1	38	0.3633	16:41:38	28-Jul-09	26.6
620	27.7	45.7	38	0.3316	16:42:38	28-Jul-09	26.7
621	28.1	45.7	38	0.4102	16:43:38	28-Jul-09	26.6
622	25.6	45.8	38	0.5903	16:44:38	28-Jul-09	26.3
623	18.3	45.8	39	1.2274	16:45:38	28-Jul-09	25.5
624	17.7	45.8	38	2.8052	16:46:38	28-Jul-09	24.9
625	8.8	45.9	38	2.8815	16:47:38	28-Jul-09	23.8
626	15.5	46.1	38	1.7698	16:48:38	28-Jul-09	23.1
627	15.8	46.2	38	1.5926	16:49:38	28-Jul-09	22.5
628	20.3	46.1	38	2.2639	16:50:38	28-Jul-09	22.8
629	11.8	46	38	1.2897	16:51:38	28-Jul-09	21.8
630	28.8	46.2	38	1.3407	16:52:38	28-Jul-09	21.9
631	22.9	46.3	38	0.5194	16:53:38	28-Jul-09	21.8
632	22.4	46.3	38	0.5718	16:54:38	28-Jul-09	21.7
633	24.6	46.5	38	0.6072	16:55:38	28-Jul-09	21.4
634	26.2	46.9	38	2.5368	16:56:38	28-Jul-09	21.4
635	19.4	46.7	38	3.3478	16:57:38	28-Jul-09	20.9
636	28.8	47.9	39	3.8697	16:58:38	28-Jul-09	20.9
637	26.9	46.3	38	1.094	16:59:38	28-Jul-09	20.9
638	21.9	46.2	38	0.8469	17:00:38	28-Jul-09	20.6
639	17.3	46.1	38	0.8064	17:01:38	28-Jul-09	20.6
640	21.3	46	38	1.2036	17:02:38	28-Jul-09	20.8
641	24.6	46	38	1.5382	17:03:38	28-Jul-09	21.8
642	19	46	38	0.9345	17:04:38	28-Jul-09	22.0
643	7.7	46	38	2.0668	17:05:38	28-Jul-09	21.5
644	22.4	46	38	2.0303	17:06:38	28-Jul-09	21.6
645	19.2	46.1	38	1.1365	17:07:38	28-Jul-09	22.1
646	15.2	46.2	38	2.3048	17:08:38	28-Jul-09	21.2
647	12.5	46.2	38	2.8811	17:09:38	28-Jul-09	20.6
648	9.4	46.3	38	1.664	17:10:38	28-Jul-09	19.8
649	9.5	46.3	38	2.4562	17:11:38	28-Jul-09	18.8
650	7.3	46.3	38	1.8798	17:12:38	28-Jul-09	17.7
651	9.9	46.4	38	2.5761	17:13:38	28-Jul-09	17.1
652	4.3	46.5	37	1.6951	17:14:38	28-Jul-09	15.5
653	7.8	46.5	37	1.5372	17:15:38	28-Jul-09	14.3
654	3.6	46.5	37	1.1168	17:16:38	28-Jul-09	13.2
655	17.7	46.5	37	3.2227	17:17:38	28-Jul-09	13.2
656	16	46.6	37	3.3641	17:18:38	28-Jul-09	12.9
657	11.1	46.6	37	2.5074	17:19:38	28-Jul-09	12.0
658	16.7	46.6	38	3.6648	17:20:38	28-Jul-09	11.9
659	9.3	46.6	37	2.146	17:21:38	28-Jul-09	12.0
660	4.6	46.6	38	1.7232	17:22:38	28-Jul-09	10.9
661	9.9	46.6	38	2.2603	17:23:38	28-Jul-09	10.3
662	2.3	46.7	38	1.1143	17:24:38	28-Jul-09	9.5
663	1	46.7	38	0.6469	17:25:38	28-Jul-09	8.8
664	0	46.6	37	0.3388	17:26:38	28-Jul-09	8.2
665	0.6	46.7	37	0.3921	17:27:38	28-Jul-09	7.6
666	2.5	46.7	38	1.0849	17:28:38	28-Jul-09	7.3
667	8.3	46.7	37	2.0035	17:29:38	28-Jul-09	7.2
668	16.3	46.7	38	2.869	17:30:38	28-Jul-09	8.0
669	12.6	46.7	37	2.502	17:31:38	28-Jul-09	8.3
670	1.7	46.8	37	0.9046	17:32:38	28-Jul-09	8.2
671	0.2	46.8	37	0.4567	17:33:38	28-Jul-09	7.1
672	5.6	46.9	37	1.8339	17:34:38	28-Jul-09	6.4
673	0.5	47	38	0.5018	17:35:38	28-Jul-09	5.8
674	0	47.1	37	0.3375	17:36:38	28-Jul-09	4.7
675	1.1	47.5	37	0.7742	17:37:38	28-Jul-09	4.2
676	0.2	48.3	38	0.4654	17:38:38	28-Jul-09	3.9
677	0.1	47.3	37	0.424	17:39:38	28-Jul-09	3.3
678	0	47.2	37	0.3375	17:40:38	28-Jul-09	3.2
679	0.2	47.6	37	0.4236	17:41:38	28-Jul-09	3.1
680	0	48.6	37	0.3382	17:42:38	28-Jul-09	3.1
681	0	48.1	37	0.3375	17:43:38	28-Jul-09	3.1
682	0.2	48.9	37	0.3932	17:44:38	28-Jul-09	2.9
683	1.2	48.9	37	0.6365	17:45:38	28-Jul-09	2.5
684	4.7	48.9	37	1.6415	17:46:38	28-Jul-09	1.8
685	1.8	47	36	0.7501	17:47:38	28-Jul-09	1.1
686	0	46.9	36	0.3439	17:48:38	28-Jul-09	1.0
687	3.7	46.8	37	1.2855	17:49:38	28-Jul-09	1.2
688	0	46.9	37	0.3375	17:50:38	28-Jul-09	0.9
689	0.2	46.9	36	0.4768	17:51:38	28-Jul-09	0.8
690	4.4	46.8	36	1.478	17:52:38	28-Jul-09	1.1
691	1.5	46.8	36	0.8695	17:53:38	28-Jul-09	1.1
692	13.4	46.7	36	3.0452	17:54:38	28-Jul-09	2.0
693	0.7	46.7	36	0.684	17:55:38	28-Jul-09	2.0
694	0.9	46.7	36	0.6542	17:56:38	28-Jul-09	2.1
695	2.5	46.6	36	1.1125	17:57:38	28-Jul-09	2.2

DataRam 4 Dust Monitor, Serial Number D464

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
593	25.5	37.8	34	0.2057	16:18:26	28-Jul-09	17.5
594	19.2	37.8	34	0.2237	16:19:26	28-Jul-09	17.8
595	15.9	37.7	34	0.1452	16:20:26	28-Jul-09	18.0
596	39	37.7	34	0.291	16:21:26	28-Jul-09	19.5
597	18.1	37.7	34	0.2177	16:22:26	28-Jul-09	19.6
598	16.5	37.7	34	0.1534	16:23:26	28-Jul-09	19.8
599	23.3	37.6	34	0.2287	16:24:26	28-Jul-09	20.4
600	22.9	37.6	34	0.368	16:25:26	28-Jul-09	21.0
601	15.9	37.6	34	0.1699	16:26:26	28-Jul-09	20.0
602	13.7	37.5	34	0.1373	16:27:26	28-Jul-09	19.5
603	13.5	37.5	34	0.1355	16:28:26	28-Jul-09	19.5
604	13.1	37.5	34	0.1286	16:29:26	28-Jul-09	19.4
605	13.4	37.4	34	0.1267	16:30:26	28-Jul-09	19.2
606	13.4	37.4	34	0.1314	16:31:26	28-Jul-09	18.3
607	14.4	37.4	34	0.1513	16:32:26	28-Jul-09	18.3
608	14.4	37.3	34	0.1358	16:33:26	28-Jul-09	18.3
609	14.4	37.3	35	0.1401	16:34:26	28-Jul-09	17.6
610	13.8	37.3	35	0.1396	16:35:26	28-Jul-09	17.2
611	14.6	37.2	35	0.143	16:36:26	28-Jul-09	17.2
612	13.4	37.2	35	0.1167	16:37:26	28-Jul-09	15.6
613	12.8	37.2	35	0.1261	16:38:26	28-Jul-09	15.2
614	12.9	37.2	35	0.1317	16:39:26	28-Jul-09	15.0
615	12.8	37.2	35	0.1285	16:40:26	28-Jul-09	14.3
616	12.5	37.1	35	0.1374	16:41:26	28-Jul-09	13.7
617	13.1	37.1	35	0.1351	16:42:26	28-Jul-09	13.5
618	12.4	37.1	35	0.1248	16:43:26	28-Jul-09	13.4
619	12.5	37.1	35	0.1343	16:44:26	28-Jul-09	13.4
620	12	37.1	35	0.1276	16:45:26	28-Jul-09	13.3
621	12.3	37.1	35	0.1287	16:46:26	28-Jul-09	13.2
622	13.2	37.1	35	0.1336	16:47:26	28-Jul-09	13.2
623	12.3	37.1	35	0.1171	16:48:26	28-Jul-09	13.1
624	12.8	37	35	0.1365	16:49:26	28-Jul-09	13.0
625	13.1	37	35	0.124	16:50:26	28-Jul-09	12.9
626	13.5	37.1	35	0.139	16:51:26	28-Jul-09	12.9
627	13.8	37	35	0.1494	16:52:26	28-Jul-09	12.8
628	12.7	37	35	0.123	16:53:26	28-Jul-09	12.8
629	12.8	37	35	0.1238	16:54:26	28-Jul-09	12.8
630	13.1	37	35	0.1292	16:55:26	28-Jul-09	12.8
631	13.2	37	35	0.129	16:56:26	28-Jul-09	12.8
632	12.7	37	35	0.1329	16:57:26	28-Jul-09	12.8
633	12.2	37	35	0.1226	16:58:26	28-Jul-09	12.8
634	12.9	37	35	0.1299	16:59:26	28-Jul-09	12.8
635	12.3	37	35	0.1144	17:00:26	28-Jul-09	12.8
636	13.4	37	35	0.1313	17:01:26	28-Jul-09	12.9
637	13.2	37	36	0.1345	17:02:26	28-Jul-09	13.0
638	12.7	37	36	0.1205	17:03:26	28-Jul-09	12.9
639	13	37	36	0.1212	17:04:26	28-Jul-09	13.0
640	13.1	37	36	0.1284	17:05:26	28-Jul-09	13.0
641	13.1	37	36	0.1263	17:06:26	28-Jul-09	13.0
642	13.3	37	36	0.1372	17:07:26	28-Jul-09	13.0
643	12.5	37	36	0.1257	17:08:26	28-Jul-09	12.9
644	13.6	37	36	0.132	17:09:26	28-Jul-09	12.9
645	13	37	36	0.1353	17:10:26	28-Jul-09	13.0
646	12.8	37.1	36	0.1341	17:11:26	28-Jul-09	12.9
647	12.5	37	36	0.1163	17:12:26	28-Jul-09	12.9
648	13.1	37	36	0.1345	17:13:26	28-Jul-09	12.9
649	13.2	37	36	0.1256	17:14:26	28-Jul-09	13.0
650	13.8	37	36	0.1371	17:15:26	28-Jul-09	13.0
651	13.2	37.1	36	0.1375	17:16:26	28-Jul-09	13.1
652	12.6	37.1	36	0.1266	17:17:26	28-Jul-09	13.0
653	13.5	37	36	0.1282	17:18:26	28-Jul-09	13.1
654	13.3	37.1	36	0.1328	17:19:26	28-Jul-09	13.1
655	13.7	37.1	36	0.135	17:20:26	28-Jul-09	13.1
656	13.7	37.1	36	0.1404	17:21:26	28-Jul-09	13.2
657	13.7	37.1	36	0.1297	17:22:26	28-Jul-09	13.2
658	13.7	37.1	36	0.1316	17:23:26	28-Jul-09	13.2
659	13.8	37.1	36	0.1402	17:24:26	28-Jul-09	13.3
660	13.8	37.1	36	0.1414	17:25:26	28-Jul-09	13.3
661	13.2	37.1	36	0.1234	17:26:26	28-Jul-09	13.4
662	14.1	37.1	36	0.143	17:27:26	28-Jul-09	13.4
663	13.4	37	36	0.1322	17:28:26	28-Jul-09	13.5
664	13.4	37.1	36	0.1293	17:29:26	28-Jul-09	13.5
665	13.4	37.1	36	0.1193	17:30:26	28-Jul-09	13.5
666	13.6	37.1	36	0.1299	17:31:26	28-Jul-09	13.5
667	13.4	37	37	0.13	17:32:26	28-Jul-09	13.5
668	14.1	37.1	36	0.1355	17:33:26	28-Jul-09	13.6
669	13.3	37.1	36	0.1357	17:34:26	28-Jul-09	13.6
670	12.9	37.1	36	0.1142	17:35:26	28-Jul-09	13.6
671	13.1	37.1	36	0.1176	17:36:26	28-Jul-09	13.5
672	12.6	37.1	36	0.1282	17:37:26	28-Jul-09	13.5
673	13.7	37.1	36	0.1333	17:38:26	28-Jul-09	13.5
674	13.1	37.1	36	0.1199	17:39:26	28-Jul-09	13.4
675	12.9	37.1	36	0.1187	17:40:26	28-Jul-09	13.4
676	13.3	37.1	36	0.127	17:41:26	28-Jul-09	13.3
677	12.8	37.1	36	0.1234	17:42:26	28-Jul-09	13.3
678	13	37.1	36	0.1237	17:43:26	28-Jul-09	13.3
679	12.5	37.1	36	0.1112	17:44:26	28-Jul-09	13.2
680	12.3	37.1	36	0.1108	17:45:26	28-Jul-09	13.1
681	12.7	37.1	36	0.1168	17:46:26	28-Jul-09	13.1
682	12.8	37.1	36	0.117	17:47:26	28-Jul-09	13.0
683	13.1	37.1	36	0.1311	17:48:26	28-Jul-09	13.0
684	13.4	37.1	36	0.1454	17:49:26	28-Jul-09	13.0
685	13.3	37.1	36	0.1253	17:50:26	28-Jul-09	13.0
686	13.5	37.1	36	0.1359	17:51:26	28-Jul-09	13.0
687	13.1	37.1	36	0.1138	17:52:26	28-Jul-09	13.0
688	13.4	37	36	0.1232	17:53:26	28-Jul-09	13.1
689	13.9	37	36	0.1263	17:54:26	28-Jul-09	13.1
690	13.8	37	36	0.1247	17:55:26	28-Jul-09	13.1
691	13.8	37	36	0.1356	17:56:26	28-Jul-09	13.2
692	13.7	37	36	0.1282	17:57:26	28-Jul-09	13.2

Appendix I
Ambient Air Dust Monitoring Results - SEAD-12 Removal Action

Seneca Army Depot Activity
Romulus, NY

DataRam 4 Dust Monitor, Serial Number D454

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
696	0.2	46.6	36	0.4211	17:58:38	28-Jul-09	2.2
697	0	46.5	36	0.3375	17:59:38	28-Jul-09	2.2
698	0	46.5	36	0.3381	18:00:38	28-Jul-09	2.2
699	0	46.5	36	0.3375	18:01:38	28-Jul-09	2.1
700	0	46.5	37	0.3375	18:02:38	28-Jul-09	1.8
701	0	46.4	37	0.3375	18:03:38	28-Jul-09	1.7
702	0	46.4	37	0.3375	18:04:38	28-Jul-09	1.7
703	0	46.4	37	0.3375	18:05:38	28-Jul-09	1.5
704	0	46.3	37	0.3375	18:06:38	28-Jul-09	1.5
705	0	46.3	37	0.3375	18:07:38	28-Jul-09	1.5
706	0	46.3	37	0.3375	18:08:38	28-Jul-09	1.2
707	0	46.3	37	0.3375	18:09:38	28-Jul-09	1.1
708	0	46.2	37	0.3375	18:10:38	28-Jul-09	0.3
709	0	46.3	37	0.3375	18:11:38	28-Jul-09	0.2
710	0	46.2	37	0.3375	18:12:38	28-Jul-09	0.2
711	0	46.2	37	0.3375	18:13:38	28-Jul-09	0.0
712	0	46.2	37	0.3375	18:14:38	28-Jul-09	0.0
713	0	46.3	37	0.3375	18:15:38	28-Jul-09	0.0
714	0	46.2	37	0.3375	18:16:38	28-Jul-09	0.0
715	0	46.1	37	0.3375	18:17:38	28-Jul-09	0.0
716	0	46.1	37	0.3375	18:18:38	28-Jul-09	0.0
717	0	46.1	37	0.3375	18:19:38	28-Jul-09	0.0
718	0	46	37	0.3375	18:20:38	28-Jul-09	0.0
719	0	46	37	0.3375	18:21:38	28-Jul-09	0.0
720	0.1	45.9	37	0.3934	18:22:38	28-Jul-09	0.0
721	0	45.8	37	0.3375	18:23:38	28-Jul-09	0.0
722	0	45.8	37	0.3375	18:24:38	28-Jul-09	0.0
723	0	45.8	37	0.3375	18:25:38	28-Jul-09	0.0
724	0	45.9	37	0.3375	18:26:38	28-Jul-09	0.0
725	1.4	45.8	37	0.8717	18:27:38	28-Jul-09	0.1
726	1.3	46	37	0.644	18:28:38	28-Jul-09	0.2
727	0	45.8	38	0.3375	18:29:38	28-Jul-09	0.2
728	0	45.7	38	0.3375	18:30:38	28-Jul-09	0.2
729	0	45.6	38	0.3375	18:31:38	28-Jul-09	0.2
730	0	45.5	38	0.3375	18:32:38	28-Jul-09	0.2
731	0	45.4	38	0.3375	18:33:38	28-Jul-09	0.2
732	0	45.4	38	0.3375	18:34:38	28-Jul-09	0.2
733	0	45.3	38	0.3375	18:35:38	28-Jul-09	0.2
734	0	45.4	38	0.3375	18:36:38	28-Jul-09	0.2
735	0	45.3	39	0.3375	18:37:38	28-Jul-09	0.2
736	0	45.2	38	0.3375	18:38:38	28-Jul-09	0.2
737	0	45.3	38	0.3375	18:39:38	28-Jul-09	0.2
738	0	45.2	38	0.3375	18:40:38	28-Jul-09	0.2
739	0	45.2	39	0.3375	18:41:38	28-Jul-09	0.2
740	0	45.2	38	0.3375	18:42:38	28-Jul-09	0.2
741	0	45.1	38	0.3375	18:43:38	28-Jul-09	0.1
742	0	45.1	38	0.3375	18:44:38	28-Jul-09	0.0
743	0	45.1	38	0.3375	18:45:38	28-Jul-09	0.0
744	0	45	38	0.3375	18:46:38	28-Jul-09	0.0
745	0	45.1	38	0.3375	18:47:38	28-Jul-09	0.0
746	0	45.2	38	0.3375	18:48:38	28-Jul-09	0.0
747	0	44.9	38	0.3516	18:49:38	28-Jul-09	0.0
748	0	44.7	38	0.3375	18:50:38	28-Jul-09	0.0
749	0	44.6	38	0.3375	18:51:38	28-Jul-09	0.0
750	0	44.6	38	0.3375	18:52:38	28-Jul-09	0.0
751	0	44.5	38	0.3375	18:53:38	28-Jul-09	0.0
752	0	44.5	38	0.3375	18:54:38	28-Jul-09	0.0
753	0	44.4	38	0.3375	18:55:38	28-Jul-09	0.0
754	0	44.3	38	0.3375	18:56:38	28-Jul-09	0.0
755	0	44.3	38	0.3375	18:57:38	28-Jul-09	0.0
756	0	44.2	38	0.3375	18:58:38	28-Jul-09	0.0
757	0	44.2	38	0.3375	18:59:38	28-Jul-09	0.0
758	0	44.2	38	0.3375	19:00:38	28-Jul-09	0.0
759	0	44.2	38	0.3375	19:01:38	28-Jul-09	0.0
760	0	44.1	38	0.3375	19:02:38	28-Jul-09	0.0
761	0	44.1	38	0.3375	19:03:38	28-Jul-09	0.0
762	0	44	38	0.3375	19:04:38	28-Jul-09	0.0
763	0	44	38	0.3375	19:05:38	28-Jul-09	0.0
764	0	44	38	0.3375	19:06:38	28-Jul-09	0.0
765	0	43.9	38	0.3375	19:07:38	28-Jul-09	0.0
766	0	43.9	38	0.3375	19:08:38	28-Jul-09	0.0
767	0	43.8	38	0.3375	19:09:38	28-Jul-09	0.0
768	0	43.8	38	0.3375	19:10:38	28-Jul-09	0.0
769	0	43.8	38	0.3375	19:11:38	28-Jul-09	0.0
770	0	43.7	38	0.3375	19:12:38	28-Jul-09	0.0
771	0	43.7	38	0.3375	19:13:38	28-Jul-09	0.0
772	0	43.7	38	0.3375	19:14:38	28-Jul-09	0.0
773	0	43.6	38	0.3375	19:15:38	28-Jul-09	0.0
774	0	43.6	38	0.3375	19:16:38	28-Jul-09	0.0
775	0	43.6	38	0.3375	19:17:38	28-Jul-09	0.0
776	0	43.5	38	0.3375	19:18:38	28-Jul-09	0.0
777	0	43.5	38	0.3375	19:19:38	28-Jul-09	0.0
778	0	43.5	38	0.3375	19:20:38	28-Jul-09	0.0
779	0	43.4	38	0.3375	19:21:38	28-Jul-09	0.0
780	0	43.4	38	0.3375	19:22:38	28-Jul-09	0.0
781	0	43.3	38	0.3375	19:23:38	28-Jul-09	0.0
782	0	43.2	38	0.3375	19:24:38	28-Jul-09	0.0
783	0.3	43.2	38	0.4652	19:25:38	28-Jul-09	0.0
784	0	43.2	38	0.3375	19:26:38	28-Jul-09	0.0
785	0	43.1	38	0.3375	19:27:38	28-Jul-09	0.0
786	0	43.1	38	0.3375	19:28:38	28-Jul-09	0.0
787	0	43.1	38	0.3375	19:29:38	28-Jul-09	0.0
788	0	43.1	38	0.3375	19:30:38	28-Jul-09	0.0
789	0	43	38	0.3375	19:31:38	28-Jul-09	0.0
790	0	43	38	0.3375	19:32:38	28-Jul-09	0.0
791	0	42.9	38	0.3375	19:33:38	28-Jul-09	0.0
792	0	42.9	38	0.3375	19:34:38	28-Jul-09	0.0
793	0	42.8	39	0.3375	19:35:38	28-Jul-09	0.0
794	0	42.7	39	0.3375	19:36:38	28-Jul-09	0.0
795	0	42.7	38	0.3375	19:37:38	28-Jul-09	0.0

DataRam 4 Dust Monitor, Serial Number D464

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
693	13	37	36	0.1097	17:58:26	28-Jul-09	13.2
694	14.4	37	36	0.1345	17:59:26	28-Jul-09	13.3
695	14.6	37	36	0.1508	18:00:26	28-Jul-09	13.4
696	13.8	37	36	0.1285	18:01:26	28-Jul-09	13.5
697	13.2	36.9	36	0.1233	18:02:26	28-Jul-09	13.6
698	13.6	37	36	0.1182	18:03:26	28-Jul-09	13.6
699	14.3	36.9	36	0.1349	18:04:26	28-Jul-09	13.7
700	13.7	36.9	36	0.1224	18:05:26	28-Jul-09	13.7
701	14.4	36.9	36	0.133	18:06:26	28-Jul-09	13.8
702	14.5	36.9	36	0.1434	18:07:26	28-Jul-09	13.8
703	13.7	36.8	36	0.1223	18:08:26	28-Jul-09	13.9
704	13.6	36.9	37	0.1215	18:09:26	28-Jul-09	13.9
705	13.6	36.8	36	0.1319	18:10:26	28-Jul-09	13.9
706	13.3	36.8	36	0.1326	18:11:26	28-Jul-09	13.8
707	13.9	36.8	36	0.1172	18:12:26	28-Jul-09	13.8
708	13.3	36.8	36	0.1205	18:13:26	28-Jul-09	13.8
709	13	36.8	36	0.1259	18:14:26	28-Jul-09	13.8
710	13.1	36.7	36	0.1191	18:15:26	28-Jul-09	13.7
711	13.3	36.7	36	0.1203	18:16:26	28-Jul-09	13.6
712	13.2	36.7	36	0.1307	18:17:26	28-Jul-09	13.6
713	12.6	36.7	36	0.1107	18:18:26	28-Jul-09	13.6
714	13.7	36.7	36	0.126	18:19:26	28-Jul-09	13.6
715	14.1	36.6	36	0.1448	18:20:26	28-Jul-09	13.6
716	14.3	36.6	36	0.1359	18:21:26	28-Jul-09	13.6
717	14.6	36.6	37	0.1384	18:22:26	28-Jul-09	13.6
718	14.1	36.6	37	0.1431	18:23:26	28-Jul-09	13.6
719	13.2	36.6	37	0.1065	18:24:26	28-Jul-09	13.6
720	13.3	36.6	37	0.1122	18:25:26	28-Jul-09	13.5
721	13.3	36.6	37	0.1125	18:26:26	28-Jul-09	13.5
722	14	36.5	37	0.1312	18:27:26	28-Jul-09	13.6
723	14	36.5	37	0.1322	18:28:26	28-Jul-09	13.6
724	14.2	36.5	37	0.132	18:29:26	28-Jul-09	13.6
725	13.6	36.5	37	0.1333	18:30:26	28-Jul-09	13.7
726	14	36.4	37	0.1259	18:31:26	28-Jul-09	13.7
727	14.2	36.4	37	0.1245	18:32:26	28-Jul-09	13.8
728	13.4	36.4	37	0.1134	18:33:26	28-Jul-09	13.8
729	13.9	36.4	37	0.1245	18:34:26	28-Jul-09	13.9
730	14.5	36.3	37	0.1337	18:35:26	28-Jul-09	13.9
731	13.8	36.3	37	0.1371	18:36:26	28-Jul-09	13.9
732	14.9	36.3	37	0.1446	18:37:26	28-Jul-09	13.9
733	14.3	36.2	37	0.1369	18:38:26	28-Jul-09	13.9
734	14	36.2	38	0.1248	18:39:26	28-Jul-09	13.9
735	14.4	36.2	38	0.1338	18:40:26	28-Jul-09	14.0
736	14.6	36.2	38	0.1382	18:41:26	28-Jul-09	14.1
737	14.4	36.2	38	0.1363	18:42:26	28-Jul-09	14.1
738	14.1	36.1	38	0.1289	18:43:26	28-Jul-09	14.1
739	13.9	36.1	38	0.1267	18:44:26	28-Jul-09	14.1
740	14.2	36.1	38	0.1402	18:45:26	28-Jul-09	14.1
741	14.4	36.1	38	0.1433	18:46:26	28-Jul-09	14.2
742	14.7	36	38	0.1385	18:47:26	28-Jul-09	14.2
743	14.3	36	38	0.1293	18:48:26	28-Jul-09	14.2
744	14.8	36	38	0.134	18:49:26	28-Jul-09	14.3
745	14	36	38	0.135	18:50:26	28-Jul-09	14.3
746	14.1	36	38	0.1255	18:51:26	28-Jul-09	14.3
747	13.7	36	38	0.121	18:52:26	28-Jul-09	14.3
748	14.8	36	38	0.1343	18:53:26	28-Jul-09	14.3
749	14.4	35.9	38	0.139	18:54:26	28-Jul-09	14.3
750	14.4	35.9	38	0.127	18:55:26	28-Jul-09	14.3
751	14.3	35.8	38	0.133	18:56:26	28-Jul-09	14.3
752	14.4	35.9	38	0.1424	18:57:26	28-Jul-09	14.3
753	13.9	35.8	38	0.1175	18:58:26	28-Jul-09	14.3
754	14.8	35.8	38	0.133	18:59:26	28-Jul-09	14.3
755	14.5	35.8	38	0.1301	19:00:26	28-Jul-09	14.4
756	14.3	35.8	38	0.1248	19:01:26	28-Jul-09	14.4
757	14.7	35.7	38	0.1361	19:02:26	28-Jul-09	14.4
758	14.6	35.7	38	0.1378	19:03:26	28-Jul-09	14.4
759	14.3	35.7	39	0.1305	19:04:26	28-Jul-09	14.4
760	14.9	35.7	38	0.142	19:05:26	28-Jul-09	14.4
761	14.5	35.7	38	0.144	19:06:26	28-Jul-09	14.4
762	14.6	35.7	38	0.138	19:07:26	28-Jul-09	14.4
763	15.4	35.7	38	0.1571	19:08:26	28-Jul-09	14.6
764	14.7	35.6	38	0.1365	19:09:26	28-Jul-09	14.5
765	14.5	35.6	38	0.1407	19:10:26	28-Jul-09	14.6
766	14.8	35.6	38	0.1295	19:11:26	28-Jul-09	14.6
767	14.6	35.6	38	0.1315	19:12:26	28-Jul-09	14.6
768	15	35.6	38	0.1428	19:13:26	28-Jul-09	14.6
769	15	35.6	38	0.1363	19:14:26	28-Jul-09	14.7
770	15.4	35.6	38	0.1538	19:15:26	28-Jul-09	14.7
771	14.4	35.6	38	0.1338	19:16:26	28-Jul-09	14.7
772	14.2	35.5	38	0.1285	19:17:26	28-Jul-09	14.7
773	15.2	35.5	38	0.1428	19:18:26	28-Jul-09	14.8
774	14.5	35.5	38	0.1281	19:19:26	28-Jul-09	14.8
775	14.4	35.5	38	0.1363	19:20:26	28-Jul-09	14.8
776	15.2	35.5	38	0.1396	19:21:26	28-Jul-09	14.8
777	14.9	35.5	38	0.1292	19:22:26	28-Jul-09	14.8
778	14.9	35.5	38	0.1389	19:23:26	28-Jul-09	14.8
779	15.5	35.5	38	0.1526	19:24:26	28-Jul-09	14.8
780	15	35.4	38	0.13	19:25:26	28-Jul-09	14.8
781	15.3	35.4	38	0.1436	19:26:26	28-Jul-09	14.9
782	16	35.4	38	0.1433	19:27:26	28-Jul-09	15.0
783	15.5	35.4	38	0.1511	19:28:26	28-Jul-09	15.0
784	15.7	35.3	38	0.1398	19:29:26	28-Jul-09	15.1
785	15.9	35.3	38	0.1461	19:30:26	28-Jul-09	15.1
786	15.7	35.3	38	0.1364	19:31:26	28-Jul-09	15.1
787	16.9	35.2	38	0.1494	19:32:26	28-Jul-09	15.3
788	16.6	35.2	38	0.1436	19:33:26	28-Jul-09	15.5
789	16.4	35.2	38	0.1446	19:34:26	28-Jul-09	15.5
790	16.8	35.2	38	0.1529	19:35:26	28-Jul-09	15.7
791	17.1	35.2	38	0.1581	19:36:26	28-Jul-09	15.8
792	16.5	35.2	38	0.1403	19:37:26	28-Jul-09	15.9

Appendix I
Ambient Air Dust Monitoring Results - SEAD-12 Removal Action

Seneca Army Depot Activity
Romulus, NY

DataRam 4 Dust Monitor, Serial Number D454

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
796	0	42.7	39	0.3375	19:38:38	28-Jul-09	0.0
797	0	42.6	39	0.3375	19:39:38	28-Jul-09	0.0
798	0	42.6	39	0.3375	19:40:38	28-Jul-09	0.0
799	0	42.6	39	0.3375	19:41:38	28-Jul-09	0.0
800	0	42.6	39	0.3375	19:42:38	28-Jul-09	0.0
801	0	42.5	39	0.3375	19:43:38	28-Jul-09	0.0
802	0	42.5	39	0.3375	19:44:38	28-Jul-09	0.0
803	0	42.5	39	0.3375	19:45:38	28-Jul-09	0.0
804	0	42.4	39	0.3375	19:46:38	28-Jul-09	0.0
805	0	42.4	39	0.3375	19:47:38	28-Jul-09	0.0
806	0	42.3	39	0.3375	19:48:38	28-Jul-09	0.0
807	0	42.3	39	0.3375	19:49:38	28-Jul-09	0.0
808	0	42.2	39	0.3375	19:50:38	28-Jul-09	0.0
809	0	42.2	39	0.3375	19:51:38	28-Jul-09	0.0
810	0.2	42.1	39	0.377	19:52:38	28-Jul-09	0.0
811	0	42.1	39	0.3375	19:53:38	28-Jul-09	0.0
812	0	42.1	39	0.3375	19:54:38	28-Jul-09	0.0
813	0	42	39	0.3375	19:55:38	28-Jul-09	0.0
814	0	42	39	0.3375	19:56:38	28-Jul-09	0.0
815	0	41.9	39	0.3375	19:57:38	28-Jul-09	0.0
816	0	41.8	39	0.3375	19:58:38	28-Jul-09	0.0
817	0	41.8	39	0.3375	19:59:38	28-Jul-09	0.0
818	0	41.7	39	0.3375	20:00:38	28-Jul-09	0.0
819	0	41.7	39	0.3375	20:01:38	28-Jul-09	0.0
820	0	41.6	40	0.3375	20:02:38	28-Jul-09	0.0
821	0	41.6	40	0.3375	20:03:38	28-Jul-09	0.0
822	0	41.6	40	0.3375	20:04:38	28-Jul-09	0.0
823	0	41.5	40	0.3375	20:05:38	28-Jul-09	0.0
824	0	41.5	40	0.3375	20:06:38	28-Jul-09	0.0
825	0	41.4	40	0.3375	20:07:38	28-Jul-09	0.0
826	0	41.4	40	0.3375	20:08:38	28-Jul-09	0.0
827	0	41.3	40	0.3375	20:09:38	28-Jul-09	0.0
828	0	41.3	40	0.3375	20:10:38	28-Jul-09	0.0
829	0	41	40	0.3375	20:11:38	28-Jul-09	0.0
830	0	40.8	40	0.3375	20:12:38	28-Jul-09	0.0
831	0	40.6	41	0.3375	20:13:38	28-Jul-09	0.0
832	0	39.9	41	0.3375	20:14:38	28-Jul-09	0.0
833	0	39.8	41	0.3375	20:15:38	28-Jul-09	0.0
834	0	39.8	41	0.3375	20:16:38	28-Jul-09	0.0
835	0	39.5	41	0.3375	20:17:38	28-Jul-09	0.0
836	0	39.1	41	0.3375	20:18:38	28-Jul-09	0.0
837	0	38.3	42	0.3375	20:19:38	28-Jul-09	0.0
838	0	37.7	42	0.3375	20:20:38	28-Jul-09	0.0
839	0	37.5	42	0.3375	20:21:38	28-Jul-09	0.0
840	0	37.6	43	0.3375	20:22:38	28-Jul-09	0.0
841	0	36.8	42	0.3375	20:23:38	28-Jul-09	0.0
842	0	36.6	43	0.3375	20:24:38	28-Jul-09	0.0
843	0	36.5	43	0.3375	20:25:38	28-Jul-09	0.0
844	0	36.4	43	0.3375	20:26:38	28-Jul-09	0.0
845	0	36.4	43	0.3375	20:27:38	28-Jul-09	0.0
846	0	36.3	43	0.3375	20:28:38	28-Jul-09	0.0
847	0	36.2	43	0.3375	20:29:38	28-Jul-09	0.0
848	0	36.2	43	0.3375	20:30:38	28-Jul-09	0.0
849	0	36.1	43	0.3375	20:31:38	28-Jul-09	0.0
850	0	36.1	43	0.3375	20:32:38	28-Jul-09	0.0
851	0	36	43	0.3375	20:33:38	28-Jul-09	0.0
852	0	36	43	0.3375	20:34:38	28-Jul-09	0.0
853	0	35.9	43	0.3375	20:35:38	28-Jul-09	0.0
854	0	35.8	43	0.3375	20:36:38	28-Jul-09	0.0
855	0	35.7	43	0.3375	20:37:38	28-Jul-09	0.0
856	0	35.7	44	0.3375	20:38:38	28-Jul-09	0.0
857	0	35.6	44	0.3375	20:39:38	28-Jul-09	0.0
858	0	35.5	43	0.3375	20:40:38	28-Jul-09	0.0
859	0	35.5	44	0.3375	20:41:38	28-Jul-09	0.0
860	0.3	35.4	44	0.3483	20:42:38	28-Jul-09	0.0
861	0.1	35.3	44	0.3398	20:43:38	28-Jul-09	0.0
862	0.1	35.3	44	0.3416	20:44:38	28-Jul-09	0.0
863	0	35.2	44	0.3378	20:45:38	28-Jul-09	0.0
864	0	35.2	44	0.3375	20:46:38	28-Jul-09	0.0
865	0	35.1	44	0.3375	20:47:38	28-Jul-09	0.0
866	0.6	35	45	0.3358	20:48:38	28-Jul-09	0.1
867	5.2	35	45	0.1513	20:49:38	28-Jul-09	0.4
868	0.4	34.9	45	0.3163	20:50:38	28-Jul-09	0.4
869	0.2	34.8	45	0.3294	20:51:38	28-Jul-09	0.4
870	1.9	34.8	45	0.2522	20:52:38	28-Jul-09	0.6

DataRam 4 Dust Monitor, Serial Number D464

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
793	17	35.1	38	0.1423	19:38:26	28-Jul-09	16.1
794	17	35.1	38	0.1437	19:39:26	28-Jul-09	16.2
795	17	35.1	38	0.1415	19:40:26	28-Jul-09	16.3
796	16.7	35	38	0.1418	19:41:26	28-Jul-09	16.4
797	19.4	35	38	0.1743	19:42:26	28-Jul-09	16.6
798	17.5	35	38	0.1457	19:43:26	28-Jul-09	16.7
799	16.9	35	39	0.15	19:44:26	28-Jul-09	16.8
800	17.9	35	39	0.1581	19:45:26	28-Jul-09	17.0
801	17.7	34.9	39	0.1459	19:46:26	28-Jul-09	17.1
802	18	34.9	39	0.1593	19:47:26	28-Jul-09	17.2
803	17.7	34.9	39	0.1523	19:48:26	28-Jul-09	17.3
804	18.7	34.8	39	0.1544	19:49:26	28-Jul-09	17.4
805	18.1	34.8	39	0.1478	19:50:26	28-Jul-09	17.5
806	18.1	34.8	39	0.1494	19:51:26	28-Jul-09	17.6
807	18.2	34.7	39	0.1481	19:52:26	28-Jul-09	17.7
808	17.9	34.7	39	0.1436	19:53:26	28-Jul-09	17.7
809	18.9	34.7	39	0.1466	19:54:26	28-Jul-09	17.9
810	19.1	34.6	39	0.1638	19:55:26	28-Jul-09	18.0
811	19.7	34.6	39	0.1621	19:56:26	28-Jul-09	18.2
812	19.2	34.6	39	0.1509	19:57:26	28-Jul-09	18.3
813	18.5	34.5	39	0.1418	19:58:26	28-Jul-09	18.3
814	19.5	34.5	39	0.1504	19:59:26	28-Jul-09	18.4
815	19.6	34.5	39	0.1513	20:00:26	28-Jul-09	18.6
816	20	34.4	39	0.152	20:01:26	28-Jul-09	18.7
817	20.4	34.4	39	0.1649	20:02:26	28-Jul-09	18.9
818	19.6	34.3	39	0.1394	20:03:26	28-Jul-09	19.0
819	20.3	34.3	39	0.161	20:04:26	28-Jul-09	19.1
820	20.1	34.2	39	0.1553	20:05:26	28-Jul-09	19.2
821	20.2	34.2	39	0.1673	20:06:26	28-Jul-09	19.3
822	20	34.1	39	0.1677	20:07:26	28-Jul-09	19.5
823	21	34.1	39	0.1647	20:08:26	28-Jul-09	19.6
824	20.2	34.1	39	0.1649	20:09:26	28-Jul-09	19.8
825	21.2	34	39	0.1733	20:10:26	28-Jul-09	19.9
826	20.9	34	40	0.1675	20:11:26	28-Jul-09	20.0
827	21.1	33.9	40	0.1721	20:12:26	28-Jul-09	20.1
828	21.2	33.9	40	0.1674	20:13:26	28-Jul-09	20.2
829	20.5	33.8	40	0.1748	20:14:26	28-Jul-09	20.4
830	21.8	33.8	40	0.1756	20:15:26	28-Jul-09	20.5
831	20.4	33.7	40	0.1631	20:16:26	28-Jul-09	20.6
832	21	33.7	40	0.158	20:17:26	28-Jul-09	20.6
833	20.6	33.6	40	0.1556	20:18:26	28-Jul-09	20.6
834	21	33.6	40	0.164	20:19:26	28-Jul-09	20.7
835	21.7	33.5	40	0.1728	20:20:26	28-Jul-09	20.8
836	21.9	33.5	40	0.177	20:21:26	28-Jul-09	20.9
837	22.1	33.5	40	0.1822	20:22:26	28-Jul-09	21.0
838	21.2	33.4	40	0.1669	20:23:26	28-Jul-09	21.1
839	22.4	33.3	41	0.1664	20:24:26	28-Jul-09	21.2
840	22.1	33.3	41	0.173	20:25:26	28-Jul-09	21.3
841	22	33.2	41	0.1709	20:26:26	28-Jul-09	21.4
842	22.6	33.2	41	0.1706	20:27:26	28-Jul-09	21.5
843	23.2	33.1	41	0.1808	20:28:26	28-Jul-09	21.6
844	23.5	33.1	41	0.1766	20:29:26	28-Jul-09	21.8
845	22.3	33.1	41	0.1678	20:30:26	28-Jul-09	21.9
846	22.9	33	41	0.1651	20:31:26	28-Jul-09	21.9
847	22.6	33	41	0.1705	20:32:26	28-Jul-09	22.1
848	23.5	32.9	41	0.1753	20:33:26	28-Jul-09	22.2
849	24	32.8	42	0.1844	20:34:26	28-Jul-09	22.4
850	24	32.8	42	0.1894	20:35:26	28-Jul-09	22.6
851	24.6	32.7	42	0.1805	20:36:26	28-Jul-09	22.8
852	24.6	32.7	42	0.1721	20:37:26	28-Jul-09	23.0
853	24.3	32.6	42	0.1762	20:38:26	28-Jul-09	23.1
854	24.3	32.6	42	0.1769	20:39:26	28-Jul-09	23.3
855	24.7	32.5	42	0.1746	20:40:26	28-Jul-09	23.5
856	24.4	32.5	42	0.1659	20:41:26	28-Jul-09	23.6
857	25.9	32.5	42	0.1938	20:42:26	28-Jul-09	23.8
858	25.4	32.4	43	0.1852	20:43:26	28-Jul-09	24.0
859	25.9	32.3	42	0.19	20:44:26	28-Jul-09	24.2
860	26.1	32.3	43	0.194	20:45:26	28-Jul-09	24.3
861	25.7	32.2	43	0.189	20:46:26	28-Jul-09	24.6
862	25.2	32.2	43	0.1837	20:47:26	28-Jul-09	24.7
863	26.1	32.1	43	0.1832	20:48:26	28-Jul-09	24.9
864	26.5	32.1	43	0.1881	20:49:26	28-Jul-09	25.1
865	26.1	32	43	0.188	20:50:26	28-Jul-09	25.2
866	27	32	43	0.1997	20:51:26	28-Jul-09	25.4
867	27.4	32	43	0.1871	20:52:26	28-Jul-09	25.6
868	26.1	31.9	44	0.1786	20:53:26	28-Jul-09	25.7
869	26.4	31.8	44	0.1724	20:54:26	28-Jul-09	25.8
870	27.5	31.7	44	0.1877	20:55:26	28-Jul-09	26.0
871	27.2	31.7	44	0.1851	20:56:26	28-Jul-09	26.2
872	26.9	31.7	44	0.1842	20:57:26	28-Jul-09	26.3
873	27.2	31.6	44	0.1894	20:58:26	28-Jul-09	26.4
874	26.7	31.6	44	0.1817	20:59:26	28-Jul-09	26.5
875	26.9	31.5	45	0.1801	21:00:26	28-Jul-09	26.6
876	28	31.5	45	0.2122	21:01:26	28-Jul-09	26.7
877	28	31.4	45	0.2074	21:02:26	28-Jul-09	26.8
878	26.9	31.4	45	0.1878	21:03:26	28-Jul-09	26.9
879	28	31.3	45	0.1994	21:04:26	28-Jul-09	27.1
880	27.4	31.3	45	0.1845	21:05:26	28-Jul-09	27.1
881	28.5	31.2	45	0.1991	21:06:26	28-Jul-09	27.3
882	28.3	31.2	46	0.1896	21:07:26	28-Jul-09	27.3
883	27.7	31.1	46	0.1806	21:08:26	28-Jul-09	27.4
884	28.3	31.1	46	0.1891	21:09:26	28-Jul-09	27.5
885	27.8	31	46	0.1852	21:10:26	28-Jul-09	27.6
886	29.5	31	46	0.1939	21:11:26	28-Jul-09	27.7
887	28.9	31	46	0.1964	21:12:26	28-Jul-09	27.8
888	29.3	30.9	46	0.1948	21:13:26	28-Jul-09	28.0
889	29	30.8	46	0.2	21:14:26	28-Jul-09	28.1
890	30.2	30.8	46	0.2062	21:15:26	28-Jul-09	28.3
891	29.9	30.7	47	0.2033	21:16:26	28-Jul-09	28.5
892	30.2	30.7	47	0.1952	21:17:26	28-Jul-09	28.6

Appendix I
Ambient Air Dust Monitoring Results - SEAD-12 Removal Action

Seneca Army Depot Activity
Romulus, NY

DataRam 4 Dust Monitor, Serial Number D454

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^oC)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)

DataRam 4 Dust Monitor, Serial Number D464

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^oC)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
893	30.5	30.7	47	0.2083	21:18:26	28-Jul-09	28.8
894	30.6	30.6	47	0.2121	21:19:26	28-Jul-09	29.0
895	30.3	30.6	47	0.2011	21:20:26	28-Jul-09	29.2
896	30.6	30.5	47	0.1943	21:21:26	28-Jul-09	29.4
897	30.7	30.5	48	0.2043	21:22:26	28-Jul-09	29.5
898	30.4	30.5	47	0.2006	21:23:26	28-Jul-09	29.6
899	30.7	30.4	48	0.1971	21:24:26	28-Jul-09	29.8
900	31	30.3	48	0.1981	21:25:26	28-Jul-09	30.0
901	31.4	30.3	48	0.1975	21:26:26	28-Jul-09	30.2
902	32.7	30.2	48	0.2177	21:27:26	28-Jul-09	30.4
903	32.2	30.2	48	0.2155	21:28:26	28-Jul-09	30.6
904	32.5	30.2	48	0.2109	21:29:26	28-Jul-09	30.8
905	31.8	30.1	48	0.2001	21:30:26	28-Jul-09	31.0
906	32.4	30.1	49	0.2001	21:31:26	28-Jul-09	31.1
907	32.7	30	49	0.2055	21:32:26	28-Jul-09	31.3
908	32.8	30	49	0.207	21:33:26	28-Jul-09	31.5
909	33.2	30	49	0.199	21:34:26	28-Jul-09	31.6
910	33.3	29.9	49	0.2086	21:35:26	28-Jul-09	31.8
911	34.1	29.8	49	0.2218	21:36:26	28-Jul-09	32.0
912	33.2	29.8	49	0.221	21:37:26	28-Jul-09	32.2
913	34.4	29.8	49	0.2171	21:38:26	28-Jul-09	32.4
914	34.1	29.7	50	0.2098	21:39:26	28-Jul-09	32.7
915	34.2	29.7	50	0.2139	21:40:26	28-Jul-09	32.9
916	33.8	29.6	50	0.2048	21:41:26	28-Jul-09	33.1
917	34.6	29.6	50	0.2073	21:42:26	28-Jul-09	33.3
918	34.5	29.6	50	0.2047	21:43:26	28-Jul-09	33.4
919	34.9	29.5	50	0.2116	21:44:26	28-Jul-09	33.5
920	34.9	29.5	50	0.2109	21:45:26	28-Jul-09	33.7
921	35.6	29.4	51	0.2191	21:46:26	28-Jul-09	33.9
922	35.6	29.4	51	0.2183	21:47:26	28-Jul-09	34.1
923	35.1	29.3	51	0.2043	21:48:26	28-Jul-09	34.3
924	35.4	29.3	51	0.2075	21:49:26	28-Jul-09	34.4
925	35.7	29.2	51	0.2075	21:50:26	28-Jul-09	34.6
926	36.1	29.2	51	0.2111	21:51:26	28-Jul-09	34.8
927	35.5	29.2	51	0.2043	21:52:26	28-Jul-09	34.9
928	36.7	29.1	51	0.2129	21:53:26	28-Jul-09	35.1
929	36.6	29.1	52	0.2192	21:54:26	28-Jul-09	35.2
930	36.4	29.1	52	0.2179	21:55:26	28-Jul-09	35.4
931	36.5	29	52	0.2092	21:56:26	28-Jul-09	35.5
932	37.4	29	52	0.2175	21:57:26	28-Jul-09	35.7
933	37.1	28.9	52	0.2145	21:58:26	28-Jul-09	35.9
934	37.4	28.9	52	0.211	21:59:26	28-Jul-09	36.1
935	37.5	28.9	52	0.2091	22:00:26	28-Jul-09	36.2
936	38.3	28.8	53	0.217	22:01:26	28-Jul-09	36.4
937	38.2	28.8	53	0.2174	22:02:26	28-Jul-09	36.6
938	39.2	28.7	53	0.2167	22:03:26	28-Jul-09	36.8
939	39.4	28.7	53	0.2209	22:04:26	28-Jul-09	37.1
940	39.9	28.7	53	0.2229	22:05:26	28-Jul-09	37.4
941	40.5	28.6	53	0.225	22:06:26	28-Jul-09	37.7
942	41.2	28.6	53	0.2272	22:07:26	28-Jul-09	38.0
943	40.6	28.5	53	0.2225	22:08:26	28-Jul-09	38.3
944	41.1	28.5	53	0.2286	22:09:26	28-Jul-09	38.6
945	42.3	28.5	54	0.2349	22:10:26	28-Jul-09	38.9
946	42.5	28.5	54	0.2252	22:11:26	28-Jul-09	39.3
947	42.4	28.4	54	0.2267	22:12:26	28-Jul-09	39.7
948	42.5	28.3	54	0.2329	22:13:26	28-Jul-09	40.0
949	43.3	28.3	54	0.2319	22:14:26	28-Jul-09	40.4
950	43.5	28.3	54	0.2183	22:15:26	28-Jul-09	40.8
951	44.5	28.2	54	0.2368	22:16:26	28-Jul-09	41.2
952	44	28.2	54	0.242	22:17:26	28-Jul-09	41.6
953	44.3	28.2	55	0.2316	22:18:26	28-Jul-09	42.0
954	44.5	28.1	55	0.2288	22:19:26	28-Jul-09	42.3
955	44.9	28.1	55	0.2338	22:20:26	28-Jul-09	42.6
956	44.9	28.1	55	0.2312	22:21:26	28-Jul-09	42.9
957	45.3	28	55	0.2286	22:22:26	28-Jul-09	43.2
958	45.9	28	55	0.2299	22:23:26	28-Jul-09	43.5
959	46	28	55	0.2264	22:24:26	28-Jul-09	43.9
960	46.7	28	55	0.2317	22:25:26	28-Jul-09	44.2
961	47.5	27.9	55	0.2429	22:26:26	28-Jul-09	44.5
962	46.6	27.9	56	0.2357	22:27:26	28-Jul-09	44.8
963	47.7	27.8	56	0.2365	22:28:26	28-Jul-09	45.1
964	48.4	27.8	56	0.2444	22:29:26	28-Jul-09	45.5
965	48.4	27.7	56	0.2432	22:30:26	28-Jul-09	45.8
966	48.3	27.7	56	0.2417	22:31:26	28-Jul-09	46.1
967	49.3	27.7	56	0.2435	22:32:26	28-Jul-09	46.4
968	49.1	27.7	56	0.2413	22:33:26	28-Jul-09	46.7
969	49.6	27.6	56	0.245	22:34:26	28-Jul-09	47.1
970	50	27.6	56	0.2404	22:35:26	28-Jul-09	47.4
971	49.7	27.6	56	0.2404	22:36:26	28-Jul-09	47.7
972	50.4	27.6	57	0.2408	22:37:26	28-Jul-09	48.1
973	50.9	27.5	57	0.2463	22:38:26	28-Jul-09	48.4
974	50.9	27.5	57	0.244	22:39:26	28-Jul-09	48.7
975	51.3	27.5	57	0.2441	22:40:26	28-Jul-09	49.1
976	51.9	27.5	57	0.2541	22:41:26	28-Jul-09	49.4
977	51.5	27.4	57	0.2481	22:42:26	28-Jul-09	49.6
978	51.7	27.4	57	0.2445	22:43:26	28-Jul-09	49.9
979	51.5	27.3	57	0.2339	22:44:26	28-Jul-09	50.2
980	52.5	27.3	58	0.2445	22:45:26	28-Jul-09	50.4
981	52.2	27.3	57	0.2414	22:46:26	28-Jul-09	50.7
982	52.5	27.3	58	0.2466	22:47:26	28-Jul-09	50.9
983	52.6	27.2	58	0.246	22:48:26	28-Jul-09	51.1
984	53.5	27.2	58	0.2487	22:49:26	28-Jul-09	51.4
985	52.7	27.2	58	0.2469	22:50:26	28-Jul-09	51.6
986	53.4	27.2	58	0.2484	22:51:26	28-Jul-09	51.8
987	53.5	27.1	58	0.2556	22:52:26	28-Jul-09	52.1
988	53.4	27.1	58	0.2444	22:53:26	28-Jul-09	52.3
989	54	27.1	58	0.258	22:54:26	28-Jul-09	52.4
990	54.3	27.1	58	0.2575	22:55:26	28-Jul-09	52.7
991	54.5	27.1	58	0.2645	22:56:26	28-Jul-09	52.9
992	53.6	27	59	0.253	22:57:26	28-Jul-09	53.0

Appendix I
Ambient Air Dust Monitoring Results - SEAD-12 Removal Action

Seneca Army Depot Activity
Romulus, NY

DataRam 4 Dust Monitor, Serial Number D454

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^oC)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)

DataRam 4 Dust Monitor, Serial Number D464

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^oC)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
993	53.7	27	59	0.2517	22:58:26	28-Jul-09	53.1
994	54.2	27	59	0.2557	22:59:26	28-Jul-09	53.3
995	54.1	26.9	59	0.2536	23:00:26	28-Jul-09	53.4
996	53.7	26.9	59	0.2431	23:01:26	28-Jul-09	53.5
997	53.8	26.9	59	0.2476	23:02:26	28-Jul-09	53.6
998	54.1	26.9	59	0.2484	23:03:26	28-Jul-09	53.7
999	54.8	26.9	59	0.2565	23:04:26	28-Jul-09	53.8
1000	54.7	26.8	59	0.2555	23:05:26	28-Jul-09	53.9
1001	55.4	26.8	59	0.2601	23:06:26	28-Jul-09	54.1
1002	55	26.8	59	0.2569	23:07:26	28-Jul-09	54.2
1003	55.2	26.7	59	0.2564	23:08:26	28-Jul-09	54.3
1004	55	26.7	59	0.2523	23:09:26	28-Jul-09	54.4
1005	55.2	26.7	59	0.2472	23:10:26	28-Jul-09	54.5
1006	55.4	26.7	59	0.2526	23:11:26	28-Jul-09	54.5
1007	55.9	26.7	59	0.2554	23:12:26	28-Jul-09	54.6
1008	56.3	26.7	60	0.2599	23:13:26	28-Jul-09	54.8
1009	56	26.7	60	0.2624	23:14:26	28-Jul-09	54.9
1010	56.1	26.6	60	0.2532	23:15:26	28-Jul-09	55.0
1011	56	26.6	60	0.2543	23:16:26	28-Jul-09	55.2
1012	56.5	26.6	60	0.2554	23:17:26	28-Jul-09	55.3
1013	56.3	26.6	60	0.2579	23:18:26	28-Jul-09	55.5
1014	56.5	26.5	60	0.2624	23:19:26	28-Jul-09	55.6
1015	56.7	26.5	60	0.2663	23:20:26	28-Jul-09	55.8
1016	57	26.5	60	0.2594	23:21:26	28-Jul-09	55.9
1017	57.3	26.5	60	0.2611	23:22:26	28-Jul-09	56.0
1018	57	26.5	60	0.262	23:23:26	28-Jul-09	56.2
1019	58	26.5	60	0.2614	23:24:26	28-Jul-09	56.3
1020	57.7	26.5	60	0.2609	23:25:26	28-Jul-09	56.5
1021	57.3	26.5	60	0.256	23:26:26	28-Jul-09	56.6
1022	58.8	26.4	60	0.2657	23:27:26	28-Jul-09	56.8
1023	58.1	26.4	61	0.2641	23:28:26	28-Jul-09	57.0
1024	58.7	26.4	60	0.2675	23:29:26	28-Jul-09	57.1
1025	57.5	26.4	61	0.2574	23:30:26	28-Jul-09	57.2
1026	58.4	26.4	61	0.2656	23:31:26	28-Jul-09	57.4
1027	58.9	26.3	61	0.2719	23:32:26	28-Jul-09	57.5
1028	58.4	26.3	61	0.2675	23:33:26	28-Jul-09	57.7
1029	59.6	26.3	61	0.2712	23:34:26	28-Jul-09	57.9
1030	58.2	26.3	61	0.2575	23:35:26	28-Jul-09	58.0
1031	59.3	26.3	61	0.272	23:36:26	28-Jul-09	58.1
1032	59	26.2	61	0.2685	23:37:26	28-Jul-09	58.3
1033	59.1	26.2	61	0.2658	23:38:26	28-Jul-09	58.4
1034	58.5	26.2	61	0.2617	23:39:26	28-Jul-09	58.5
1035	58.6	26.2	61	0.2652	23:40:26	28-Jul-09	58.5
1036	58.7	26.2	61	0.276	23:41:26	28-Jul-09	58.6
1037	59	26.2	61	0.2698	23:42:26	28-Jul-09	58.7
1038	58.6	26.1	61	0.2694	23:43:26	28-Jul-09	58.7
1039	58.9	26.1	61	0.2705	23:44:26	28-Jul-09	58.7
1040	58.7	26.1	61	0.2726	23:45:26	28-Jul-09	58.7
1041	58.5	26.1	62	0.261	23:46:26	28-Jul-09	58.8
1042	59.5	26.1	62	0.2715	23:47:26	28-Jul-09	58.8
1043	59	26.1	62	0.2738	23:48:26	28-Jul-09	58.9
1044	57.9	26	62	0.2668	23:49:26	28-Jul-09	58.8
1045	58	26	62	0.265	23:50:26	28-Jul-09	58.7
1046	58.1	26	62	0.2679	23:51:26	28-Jul-09	58.7
1047	58.9	26	62	0.2719	23:52:26	28-Jul-09	58.7
1048	58.2	26	62	0.2644	23:53:26	28-Jul-09	58.6
1049	58.9	26	62	0.2707	23:54:26	28-Jul-09	58.6
1050	57.6	26	62	0.2682	23:55:26	28-Jul-09	58.6
1051	58.3	26	62	0.2701	23:56:26	28-Jul-09	58.6
1052	58.9	25.9	62	0.2748	23:57:26	28-Jul-09	58.6
1053	57.9	25.9	62	0.2703	23:58:26	28-Jul-09	58.5
1054	57.7	25.9	62	0.2649	23:59:26	28-Jul-09	58.4
1055	58.6	25.9	62	0.2715	0:00:26	29-Jul-09	58.4
1056	57.6	25.9	62	0.2681	0:01:26	29-Jul-09	58.4
1057	58.4	25.9	63	0.271	0:02:26	29-Jul-09	58.3
1058	58	25.8	63	0.2754	0:03:26	29-Jul-09	58.3
1059	57.2	25.8	63	0.263	0:04:26	29-Jul-09	58.1
1060	56.8	25.8	63	0.2643	0:05:26	29-Jul-09	58.1
1061	57.5	25.8	63	0.2706	0:06:26	29-Jul-09	58.0
1062	57.7	25.8	63	0.2717	0:07:26	29-Jul-09	58.0
1063	57.7	25.8	63	0.276	0:08:26	29-Jul-09	57.9
1064	57.6	25.7	63	0.2692	0:09:26	29-Jul-09	57.9
1065	57.3	25.7	63	0.2683	0:10:26	29-Jul-09	57.8
1066	57	25.7	63	0.2717	0:11:26	29-Jul-09	57.8
1067	56.7	25.7	63	0.2682	0:12:26	29-Jul-09	57.7
1068	57.1	25.7	63	0.2701	0:13:26	29-Jul-09	57.6
1069	57.3	25.7	63	0.272	0:14:26	29-Jul-09	57.5
1070	57.1	25.7	63	0.2677	0:15:26	29-Jul-09	57.5
1071	57.1	25.7	63	0.2727	0:16:26	29-Jul-09	57.4
1072	56.7	25.6	63	0.2699	0:17:26	29-Jul-09	57.3
1073	55.4	25.6	63	0.2557	0:18:26	29-Jul-09	57.1
1074	56.4	25.6	63	0.2491	0:19:26	29-Jul-09	57.0
1075	56.2	25.6	63	0.2568	0:20:26	29-Jul-09	57.0
1076	58	25.6	63	0.2633	0:21:26	29-Jul-09	57.1
1077	57.7	25.6	63	0.2714	0:22:26	29-Jul-09	57.1
1078	57.4	25.6	64	0.266	0:23:26	29-Jul-09	57.0
1079	58	25.6	64	0.2774	0:24:26	29-Jul-09	57.1
1080	57.3	25.6	64	0.2755	0:25:26	29-Jul-09	57.0
1081	57.1	25.5	64	0.2598	0:26:26	29-Jul-09	57.0
1082	56.9	25.5	64	0.2711	0:27:26	29-Jul-09	57.0
1083	56.4	25.5	64	0.2637	0:28:26	29-Jul-09	57.0
1084	57.4	25.5	64	0.2612	0:29:26	29-Jul-09	57.0
1085	57.2	25.5	64	0.2651	0:30:26	29-Jul-09	57.0
1086	57.7	25.5	64	0.2689	0:31:26	29-Jul-09	57.1
1087	56.3	25.5	64	0.2669	0:32:26	29-Jul-09	57.0
1088	57	25.5	64	0.2647	0:33:26	29-Jul-09	57.0
1089	56.9	25.5	64	0.2674	0:34:26	29-Jul-09	57.1
1090	57	25.5	64	0.2741	0:35:26	29-Jul-09	57.2
1091	56.5	25.4	64	0.2643	0:36:26	29-Jul-09	57.2
1092	56.7	25.4	64	0.2743	0:37:26	29-Jul-09	57.1

Appendix I
Ambient Air Dust Monitoring Results - SEAD-12 Removal Action

Seneca Army Depot Activity
Romulus, NY

DataRam 4 Dust Monitor, Serial Number D454

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^oC)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)

DataRam 4 Dust Monitor, Serial Number D464

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^oC)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
1093	55.9	25.4	64	0.2662	0:38:26	29-Jul-09	57.0
1094	55.6	25.4	64	0.2606	0:39:26	29-Jul-09	56.9
1095	56.5	25.4	64	0.2667	0:40:26	29-Jul-09	56.8
1096	55.6	25.4	64	0.2706	0:41:26	29-Jul-09	56.7
1097	55.3	25.4	64	0.2607	0:42:26	29-Jul-09	56.6
1098	55.3	25.3	64	0.2644	0:43:26	29-Jul-09	56.5
1099	55.6	25.3	65	0.2706	0:44:26	29-Jul-09	56.4
1100	54.7	25.3	64	0.267	0:45:26	29-Jul-09	56.2
1101	54.2	25.3	65	0.26	0:46:26	29-Jul-09	56.1
1102	55.1	25.3	65	0.2661	0:47:26	29-Jul-09	55.9
1103	55.4	25.2	65	0.272	0:48:26	29-Jul-09	55.8
1104	54.6	25.3	65	0.2651	0:49:26	29-Jul-09	55.7
1105	55.4	25.2	65	0.2678	0:50:26	29-Jul-09	55.6
1106	54.5	25.2	65	0.2664	0:51:26	29-Jul-09	55.4
1107	54.5	25.2	65	0.2625	0:52:26	29-Jul-09	55.3
1108	54.1	25.2	65	0.267	0:53:26	29-Jul-09	55.1
1109	54.3	25.2	65	0.2684	0:54:26	29-Jul-09	55.0
1110	54	25.2	65	0.2622	0:55:26	29-Jul-09	54.9
1111	54.2	25.2	65	0.2612	0:56:26	29-Jul-09	54.8
1112	53.9	25.2	65	0.2635	0:57:26	29-Jul-09	54.7
1113	54.8	25.2	65	0.2694	0:58:26	29-Jul-09	54.7
1114	54.1	25.1	65	0.2619	0:59:26	29-Jul-09	54.6
1115	54.2	25.1	65	0.2591	1:00:26	29-Jul-09	54.5
1116	53.7	25.1	65	0.2562	1:01:26	29-Jul-09	54.4
1117	54.1	25.1	65	0.2689	1:02:26	29-Jul-09	54.4
1118	54.1	25.1	65	0.265	1:03:26	29-Jul-09	54.4
1119	53.9	25.1	65	0.2605	1:04:26	29-Jul-09	54.3
1120	54.4	25.1	65	0.2582	1:05:26	29-Jul-09	54.3
1121	55.8	25.1	65	0.2658	1:06:26	29-Jul-09	54.3
1122	55	25.1	65	0.2736	1:07:26	29-Jul-09	54.3
1123	55.5	25	65	0.2679	1:08:26	29-Jul-09	54.4
1124	55.6	25	65	0.2712	1:09:26	29-Jul-09	54.5
1125	55	25	65	0.2711	1:10:26	29-Jul-09	54.5
1126	54.6	25	65	0.2585	1:11:26	29-Jul-09	54.6
1127	55.3	25	65	0.2682	1:12:26	29-Jul-09	54.6
1128	54.9	25	66	0.2633	1:13:26	29-Jul-09	54.7
1129	55	25	65	0.2582	1:14:26	29-Jul-09	54.7
1130	55.6	25	65	0.2659	1:15:26	29-Jul-09	54.8
1131	55	25	65	0.2756	1:16:26	29-Jul-09	54.8
1132	54.9	25	66	0.2654	1:17:26	29-Jul-09	54.9
1133	55.3	24.9	66	0.2685	1:18:26	29-Jul-09	55.0
1134	55.1	24.9	66	0.2653	1:19:26	29-Jul-09	55.1
1135	55.9	24.9	66	0.2726	1:20:26	29-Jul-09	55.2
1136	54.7	24.9	66	0.2705	1:21:26	29-Jul-09	55.2
1137	55.3	24.9	66	0.265	1:22:26	29-Jul-09	55.2
1138	56.3	24.9	66	0.2764	1:23:26	29-Jul-09	55.3
1139	55.6	24.8	66	0.2734	1:24:26	29-Jul-09	55.3
1140	54.6	24.8	66	0.2636	1:25:26	29-Jul-09	55.2
1141	55.9	24.8	66	0.267	1:26:26	29-Jul-09	55.3
1142	55.9	24.8	66	0.269	1:27:26	29-Jul-09	55.3
1143	55.7	24.8	66	0.269	1:28:26	29-Jul-09	55.4
1144	55.9	24.8	66	0.2673	1:29:26	29-Jul-09	55.4
1145	56.4	24.8	66	0.2745	1:30:26	29-Jul-09	55.5
1146	55.8	24.7	66	0.269	1:31:26	29-Jul-09	55.5
1147	56.2	24.7	66	0.2729	1:32:26	29-Jul-09	55.6
1148	56.7	24.7	66	0.2737	1:33:26	29-Jul-09	55.7
1149	56.2	24.7	66	0.2732	1:34:26	29-Jul-09	55.8
1150	56.3	24.7	66	0.2695	1:35:26	29-Jul-09	55.8
1151	55.7	24.7	66	0.2645	1:36:26	29-Jul-09	55.8
1152	56.8	24.7	66	0.2733	1:37:26	29-Jul-09	56.0
1153	56.2	24.7	66	0.2724	1:38:26	29-Jul-09	56.0
1154	56.8	24.7	66	0.2755	1:39:26	29-Jul-09	56.0
1155	58.2	24.7	67	0.2792	1:40:26	29-Jul-09	56.2
1156	57.3	24.7	67	0.273	1:41:26	29-Jul-09	56.4
1157	57	24.6	67	0.2747	1:42:26	29-Jul-09	56.4
1158	57.3	24.6	67	0.2796	1:43:26	29-Jul-09	56.5
1159	57.2	24.6	67	0.2803	1:44:26	29-Jul-09	56.6
1160	57.1	24.6	67	0.2686	1:45:26	29-Jul-09	56.7
1161	58.8	24.6	67	0.2731	1:46:26	29-Jul-09	56.9
1162	58.4	24.6	67	0.2671	1:47:26	29-Jul-09	57.0
1163	57.6	24.6	67	0.2692	1:48:26	29-Jul-09	57.1
1164	58.9	24.5	67	0.2786	1:49:26	29-Jul-09	57.2
1165	60.3	24.5	67	0.279	1:50:26	29-Jul-09	57.5
1166	60.1	24.5	67	0.2727	1:51:26	29-Jul-09	57.7
1167	60.6	24.5	67	0.2826	1:52:26	29-Jul-09	58.0
1168	61	24.5	67	0.2839	1:53:26	29-Jul-09	58.3
1169	60.9	24.5	67	0.2857	1:54:26	29-Jul-09	58.6
1170	59.8	24.4	67	0.2728	1:55:26	29-Jul-09	58.8
1171	61	24.4	68	0.279	1:56:26	29-Jul-09	59.0
1172	61	24.4	67	0.2862	1:57:26	29-Jul-09	59.2
1173	61.7	24.4	67	0.285	1:58:26	29-Jul-09	59.5
1174	61.1	24.4	68	0.289	1:59:26	29-Jul-09	59.7
1175	61.2	24.4	68	0.2819	2:00:26	29-Jul-09	60.0
1176	61.8	24.3	68	0.2921	2:01:26	29-Jul-09	60.3
1177	60.3	24.3	68	0.2755	2:02:26	29-Jul-09	60.4
1178	60.8	24.3	68	0.2749	2:03:26	29-Jul-09	60.5
1179	61.1	24.3	68	0.2809	2:04:26	29-Jul-09	60.7
1180	60.8	24.3	68	0.2829	2:05:26	29-Jul-09	60.8
1181	61.9	24.2	68	0.2935	2:06:26	29-Jul-09	60.9
1182	60.7	24.2	68	0.2829	2:07:26	29-Jul-09	61.0
1183	61.7	24.2	68	0.2851	2:08:26	29-Jul-09	61.1
1184	61.7	24.2	68	0.2845	2:09:26	29-Jul-09	61.1
1185	62.9	24.1	68	0.2886	2:10:26	29-Jul-09	61.2
1186	61.8	24.1	68	0.2831	2:11:26	29-Jul-09	61.3
1187	62.9	24.1	68	0.2834	2:12:26	29-Jul-09	61.5
1188	62.3	24.1	68	0.2857	2:13:26	29-Jul-09	61.5
1189	62.4	24.1	69	0.2834	2:14:26	29-Jul-09	61.6
1190	64.3	24.1	68	0.2836	2:15:26	29-Jul-09	61.8
1191	64.2	24	68	0.2897	2:16:26	29-Jul-09	62.0
1192	64.7	24	69	0.2927	2:17:26	29-Jul-09	62.2

Appendix I
Ambient Air Dust Monitoring Results - SEAD-12 Removal Action

Seneca Army Depot Activity
Romulus, NY

DataRam 4 Dust Monitor, Serial Number D454

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^oC)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)

DataRam 4 Dust Monitor, Serial Number D464

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^oC)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
1193	65.6	24	69	0.2925	2:18:26	29-Jul-09	62.5
1194	68.1	24	69	0.3049	2:19:26	29-Jul-09	62.9
1195	66.3	24	69	0.3016	2:20:26	29-Jul-09	63.3
1196	67.5	24	69	0.2979	2:21:26	29-Jul-09	63.7
1197	66.2	23.9	69	0.3034	2:22:26	29-Jul-09	64.0
1198	66.8	23.9	69	0.2996	2:23:26	29-Jul-09	64.3
1199	67.3	23.9	69	0.303	2:24:26	29-Jul-09	64.7
1200	66.9	23.9	69	0.3082	2:25:26	29-Jul-09	65.0
1201	66.2	23.8	69	0.2946	2:26:26	29-Jul-09	65.2
1202	66.8	23.8	69	0.2969	2:27:26	29-Jul-09	65.5
1203	66.6	23.8	69	0.2978	2:28:26	29-Jul-09	65.8
1204	66.9	23.7	69	0.2975	2:29:26	29-Jul-09	66.1
1205	66.5	23.7	69	0.2952	2:30:26	29-Jul-09	66.3
1206	67.9	23.7	70	0.2937	2:31:26	29-Jul-09	66.5
1207	66.4	23.7	70	0.2975	2:32:26	29-Jul-09	66.7
1208	66.3	23.7	70	0.289	2:33:26	29-Jul-09	66.8
1209	65.8	23.7	70	0.2978	2:34:26	29-Jul-09	66.8
1210	65.8	23.7	70	0.2931	2:35:26	29-Jul-09	66.6
1211	66.9	23.6	70	0.2992	2:36:26	29-Jul-09	66.7
1212	67.2	23.6	70	0.3007	2:37:26	29-Jul-09	66.7
1213	66.1	23.6	70	0.2911	2:38:26	29-Jul-09	66.7
1214	68.8	23.6	70	0.2992	2:39:26	29-Jul-09	66.8
1215	69.2	23.6	70	0.3107	2:40:26	29-Jul-09	66.9
1216	69.2	23.6	70	0.3057	2:41:26	29-Jul-09	67.0
1217	68.1	23.5	70	0.3035	2:42:26	29-Jul-09	67.2
1218	68.2	23.5	70	0.3061	2:43:26	29-Jul-09	67.2
1219	69.1	23.5	70	0.307	2:44:26	29-Jul-09	67.4
1220	68.1	23.5	70	0.3009	2:45:26	29-Jul-09	67.5
1221	70.6	23.5	70	0.3084	2:46:26	29-Jul-09	67.7
1222	69.4	23.5	70	0.3012	2:47:26	29-Jul-09	67.8
1223	69.9	23.4	70	0.3031	2:48:26	29-Jul-09	68.0
1224	69.2	23.4	71	0.3026	2:49:26	29-Jul-09	68.2
1225	69.1	23.4	71	0.3031	2:50:26	29-Jul-09	68.4
1226	70.1	23.4	71	0.3057	2:51:26	29-Jul-09	68.7
1227	69.6	23.3	71	0.3055	2:52:26	29-Jul-09	68.9
1228	69.4	23.3	71	0.302	2:53:26	29-Jul-09	69.0
1229	70.6	23.3	71	0.3098	2:54:26	29-Jul-09	69.3
1230	70.7	23.3	71	0.308	2:55:26	29-Jul-09	69.4
1231	69.8	23.3	71	0.308	2:56:26	29-Jul-09	69.4
1232	70.3	23.2	71	0.3052	2:57:26	29-Jul-09	69.5
1233	69.7	23.2	71	0.3117	2:58:26	29-Jul-09	69.6
1234	70.4	23.2	71	0.3088	2:59:26	29-Jul-09	69.8
1235	69.9	23.2	71	0.3041	3:00:26	29-Jul-09	69.8
1236	71.9	23.2	71	0.3076	3:01:26	29-Jul-09	70.0
1237	71.4	23.2	71	0.3177	3:02:26	29-Jul-09	70.1
1238	70.5	23.2	71	0.3139	3:03:26	29-Jul-09	70.2
1239	71.3	23.1	71	0.3037	3:04:26	29-Jul-09	70.2
1240	72.2	23.1	71	0.3191	3:05:26	29-Jul-09	70.4
1241	70.5	23.1	71	0.2964	3:06:26	29-Jul-09	70.5
1242	71.7	23.1	72	0.3043	3:07:26	29-Jul-09	70.6
1243	72.5	23.1	72	0.3203	3:08:26	29-Jul-09	70.8
1244	71.4	23.1	72	0.3134	3:09:26	29-Jul-09	70.9
1245	71.5	23.1	72	0.3108	3:10:26	29-Jul-09	71.0
1246	72.4	23.1	72	0.3193	3:11:26	29-Jul-09	71.1
1247	72.2	23.1	72	0.3158	3:12:26	29-Jul-09	71.2
1248	71.5	23.1	72	0.311	3:13:26	29-Jul-09	71.3
1249	72.1	23	72	0.3135	3:14:26	29-Jul-09	71.5
1250	71.2	23	72	0.3067	3:15:26	29-Jul-09	71.5
1251	71.7	23	72	0.3067	3:16:26	29-Jul-09	71.6
1252	74.2	23	72	0.3195	3:17:26	29-Jul-09	71.8
1253	72.3	23	72	0.3153	3:18:26	29-Jul-09	71.8
1254	73.2	23	72	0.3118	3:19:26	29-Jul-09	72.0
1255	74.1	23	72	0.3189	3:20:26	29-Jul-09	72.2
1256	72.4	23	72	0.3063	3:21:26	29-Jul-09	72.2
1257	77.4	22.9	72	0.3236	3:22:26	29-Jul-09	72.6
1258	75.5	22.9	72	0.3233	3:23:26	29-Jul-09	72.9
1259	74.7	22.9	72	0.3186	3:24:26	29-Jul-09	73.0
1260	75.6	22.9	72	0.3187	3:25:26	29-Jul-09	73.3
1261	75	22.8	73	0.3286	3:26:26	29-Jul-09	73.5
1262	74.8	22.8	73	0.3208	3:27:26	29-Jul-09	73.6
1263	74.2	22.8	73	0.319	3:28:26	29-Jul-09	73.7
1264	74.2	22.8	73	0.317	3:29:26	29-Jul-09	73.9
1265	74.4	22.8	73	0.3159	3:30:26	29-Jul-09	74.1
1266	75.4	22.8	73	0.3161	3:31:26	29-Jul-09	74.3
1267	74.7	22.8	73	0.3196	3:32:26	29-Jul-09	74.5
1268	76.2	22.8	73	0.3223	3:33:26	29-Jul-09	74.6
1269	76.2	22.7	73	0.3275	3:34:26	29-Jul-09	74.9
1270	75.9	22.7	73	0.3126	3:35:26	29-Jul-09	75.0
1271	75.5	22.7	73	0.3168	3:36:26	29-Jul-09	75.1
1272	76.3	22.7	73	0.3204	3:37:26	29-Jul-09	75.4
1273	75.7	22.7	73	0.3121	3:38:26	29-Jul-09	75.3
1274	76.8	22.7	73	0.3244	3:39:26	29-Jul-09	75.4
1275	76.9	22.7	73	0.3197	3:40:26	29-Jul-09	75.5
1276	77.5	22.6	73	0.329	3:41:26	29-Jul-09	75.6
1277	77.3	22.6	73	0.3188	3:42:26	29-Jul-09	75.8
1278	77.2	22.6	73	0.316	3:43:26	29-Jul-09	75.9
1279	77.3	22.6	74	0.3248	3:44:26	29-Jul-09	76.1
1280	78	22.6	73	0.3229	3:45:26	29-Jul-09	76.3
1281	77.6	22.6	74	0.3207	3:46:26	29-Jul-09	76.5
1282	77.9	22.6	74	0.3229	3:47:26	29-Jul-09	76.7
1283	77.1	22.6	74	0.3262	3:48:26	29-Jul-09	76.8
1284	78.3	22.6	74	0.3154	3:49:26	29-Jul-09	77.0
1285	79	22.5	74	0.3317	3:50:26	29-Jul-09	77.1
1286	78.9	22.5	74	0.3326	3:51:26	29-Jul-09	77.3
1287	79.3	22.5	74	0.3281	3:52:26	29-Jul-09	77.6
1288	78.7	22.5	74	0.3221	3:53:26	29-Jul-09	77.7
1289	78.4	22.5	74	0.3176	3:54:26	29-Jul-09	77.9
1290	81	22.5	74	0.3294	3:55:26	29-Jul-09	78.2
1291	80	22.5	74	0.3249	3:56:26	29-Jul-09	78.3
1292	80.8	22.5	74	0.3365	3:57:26	29-Jul-09	78.6

Appendix I
Ambient Air Dust Monitoring Results - SEAD-12 Removal Action

Seneca Army Depot Activity
Romulus, NY

DataRam 4 Dust Monitor, Serial Number D454

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)

DataRam 4 Dust Monitor, Serial Number D464

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
1293	80.3	22.5	74	0.3304	3:58:26	29-Jul-09	78.7
1294	81	22.5	74	0.3304	3:59:26	29-Jul-09	79.0
1295	80.8	22.4	74	0.3293	4:00:26	29-Jul-09	79.2
1296	82.5	22.5	74	0.3422	4:01:26	29-Jul-09	79.5
1297	82.8	22.4	74	0.3333	4:02:26	29-Jul-09	79.8
1298	81.9	22.4	75	0.3329	4:03:26	29-Jul-09	80.1
1299	82.3	22.4	75	0.3352	4:04:26	29-Jul-09	80.4
1300	83	22.4	75	0.3326	4:05:26	29-Jul-09	80.7
1301	81.9	22.4	75	0.3315	4:06:26	29-Jul-09	80.9
1302	82	22.4	75	0.3308	4:07:26	29-Jul-09	81.0
1303	81.1	22.4	75	0.329	4:08:26	29-Jul-09	81.2
1304	81.9	22.4	75	0.3335	4:09:26	29-Jul-09	81.4
1305	80.5	22.4	75	0.3328	4:10:26	29-Jul-09	81.5
1306	81.6	22.4	75	0.3395	4:11:26	29-Jul-09	81.5
1307	81.8	22.4	75	0.3418	4:12:26	29-Jul-09	81.6
1308	81.4	22.3	75	0.3321	4:13:26	29-Jul-09	81.7
1309	82.2	22.3	75	0.337	4:14:26	29-Jul-09	81.8
1310	82	22.4	75	0.3344	4:15:26	29-Jul-09	81.9
1311	80.4	22.3	75	0.3258	4:16:26	29-Jul-09	81.8
1312	81.1	22.3	75	0.3365	4:17:26	29-Jul-09	81.7
1313	81	22.3	75	0.3326	4:18:26	29-Jul-09	81.6
1314	80.9	22.3	76	0.3329	4:19:26	29-Jul-09	81.6
1315	79.8	22.3	76	0.3213	4:20:26	29-Jul-09	81.4
1316	79.6	22.3	75	0.3254	4:21:26	29-Jul-09	81.2
1317	80.5	22.3	76	0.3288	4:22:26	29-Jul-09	81.1
1318	81	22.3	76	0.3349	4:23:26	29-Jul-09	81.1
1319	80.7	22.3	76	0.3389	4:24:26	29-Jul-09	81.0
1320	81.6	22.3	76	0.3383	4:25:26	29-Jul-09	81.0
1321	80.8	22.3	76	0.3307	4:26:26	29-Jul-09	81.0
1322	79.4	22.3	76	0.3246	4:27:26	29-Jul-09	80.9
1323	79.8	22.3	76	0.3268	4:28:26	29-Jul-09	80.8
1324	78.7	22.3	76	0.324	4:29:26	29-Jul-09	80.6
1325	79.5	22.2	76	0.3242	4:30:26	29-Jul-09	80.4
1326	78.6	22.2	76	0.3228	4:31:26	29-Jul-09	80.2
1327	78.4	22.2	76	0.3196	4:32:26	29-Jul-09	80.1
1328	78.3	22.2	76	0.3242	4:33:26	29-Jul-09	79.9
1329	77.4	22.2	76	0.32	4:34:26	29-Jul-09	79.7
1330	78.5	22.2	76	0.3246	4:35:26	29-Jul-09	79.5
1331	77.6	22.2	76	0.3251	4:36:26	29-Jul-09	79.4
1332	77.1	22.2	76	0.3266	4:37:26	29-Jul-09	79.2
1333	76.7	22.2	76	0.3202	4:38:26	29-Jul-09	79.0
1334	77.1	22.2	76	0.3243	4:39:26	29-Jul-09	78.8
1335	76.3	22.2	76	0.3261	4:40:26	29-Jul-09	78.5
1336	75.5	22.2	76	0.3212	4:41:26	29-Jul-09	78.1
1337	76.1	22.2	76	0.3279	4:42:26	29-Jul-09	77.8
1338	76.1	22.2	76	0.3167	4:43:26	29-Jul-09	77.6
1339	75.8	22.2	76	0.3246	4:44:26	29-Jul-09	77.4
1340	73.7	22.2	76	0.3138	4:45:26	29-Jul-09	77.0
1341	74.4	22.2	76	0.3086	4:46:26	29-Jul-09	76.7
1342	74	22.2	76	0.315	4:47:26	29-Jul-09	76.4
1343	74.3	22.2	76	0.3166	4:48:26	29-Jul-09	76.2
1344	74	22.2	76	0.31	4:49:26	29-Jul-09	75.9
1345	73.3	22.2	76	0.309	4:50:26	29-Jul-09	75.7
1346	73.4	22.2	76	0.3113	4:51:26	29-Jul-09	75.3
1347	74	22.2	76	0.3199	4:52:26	29-Jul-09	75.1
1348	73.9	22.2	76	0.3172	4:53:26	29-Jul-09	74.9
1349	74	22.1	76	0.3141	4:54:26	29-Jul-09	74.7
1350	73.2	22.1	76	0.3158	4:55:26	29-Jul-09	74.5
1351	74.7	22.2	76	0.3243	4:56:26	29-Jul-09	74.4
1352	73.4	22.2	76	0.3144	4:57:26	29-Jul-09	74.3
1353	74.5	22.1	76	0.3178	4:58:26	29-Jul-09	74.2
1354	73.8	22.2	76	0.327	4:59:26	29-Jul-09	74.0
1355	74.6	22.1	76	0.3288	5:00:26	29-Jul-09	74.0
1356	74.4	22.2	76	0.3162	5:01:26	29-Jul-09	74.0
1357	73.8	22.2	77	0.3118	5:02:26	29-Jul-09	74.0
1358	74.9	22.1	77	0.3207	5:03:26	29-Jul-09	74.0
1359	74.3	22.1	77	0.3212	5:04:26	29-Jul-09	74.0
1360	74.4	22.1	77	0.3074	5:05:26	29-Jul-09	74.0
1361	74.7	22.2	77	0.318	5:06:26	29-Jul-09	74.1
1362	74.3	22.2	77	0.3118	5:07:26	29-Jul-09	74.2
1363	74.4	22.1	77	0.3145	5:08:26	29-Jul-09	74.2
1364	75.3	22.1	77	0.3245	5:09:26	29-Jul-09	74.3
1365	74.7	22.1	77	0.316	5:10:26	29-Jul-09	74.3
1366	75.5	22.1	77	0.3181	5:11:26	29-Jul-09	74.5
1367	75.4	22.1	77	0.3202	5:12:26	29-Jul-09	74.5
1368	75.4	22.1	77	0.3224	5:13:26	29-Jul-09	74.7
1369	75.3	22.1	77	0.3236	5:14:26	29-Jul-09	74.7
1370	75.6	22.1	77	0.3218	5:15:26	29-Jul-09	74.8
1371	75.5	22.1	77	0.3172	5:16:26	29-Jul-09	74.9
1372	74.8	22.1	77	0.3193	5:17:26	29-Jul-09	74.9
1373	75.9	22.1	77	0.3239	5:18:26	29-Jul-09	75.0
1374	76.8	22.1	77	0.3226	5:19:26	29-Jul-09	75.1
1375	76.7	22.1	77	0.3205	5:20:26	29-Jul-09	75.3
1376	76.4	22.1	77	0.3238	5:21:26	29-Jul-09	75.4
1377	76.3	22.1	77	0.3211	5:22:26	29-Jul-09	75.5
1378	76.6	22.1	77	0.3255	5:23:26	29-Jul-09	75.7
1379	75.6	22.1	77	0.3188	5:24:26	29-Jul-09	75.7
1380	76	22.1	77	0.3175	5:25:26	29-Jul-09	75.8
1381	76.8	22.1	77	0.3216	5:26:26	29-Jul-09	75.9
1382	77.2	22.1	77	0.3242	5:27:26	29-Jul-09	76.0
1383	76.8	22.1	77	0.3173	5:28:26	29-Jul-09	76.1
1384	77.7	22.1	77	0.3212	5:29:26	29-Jul-09	76.3
1385	77.9	22.1	77	0.3259	5:30:26	29-Jul-09	76.4
1386	77.5	22.1	77	0.3254	5:31:26	29-Jul-09	76.5
1387	77	22.1	77	0.3225	5:32:26	29-Jul-09	76.6
1388	76.7	22.1	77	0.3194	5:33:26	29-Jul-09	76.7
1389	78.5	22.1	77	0.3318	5:34:26	29-Jul-09	76.9
1390	77.6	22.1	77	0.3396	5:35:26	29-Jul-09	77.0
1391	77.9	22.1	77	0.3276	5:36:26	29-Jul-09	77.0
1392	76.2	22.1	77	0.324	5:37:26	29-Jul-09	77.0

Appendix I
Ambient Air Dust Monitoring Results - SEAD-12 Removal Action

Seneca Army Depot Activity
Romulus, NY

DataRam 4 Dust Monitor, Serial Number D454

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
1	92.8	22.6	50	0.2062	7:14:47	29-Jul-09	
2	114.5	22.4	55	0.2514	7:15:47	29-Jul-09	
3	115.9	22.5	60	0.2574	7:16:47	29-Jul-09	

DataRam 4 Dust Monitor, Serial Number D464

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
1393	78.1	22.1	77	0.3346	5:38:26	29-Jul-09	77.1
1394	78	22.1	77	0.3323	5:39:26	29-Jul-09	77.2
1395	77.5	22.1	77	0.3185	5:40:26	29-Jul-09	77.3
1396	77.4	22.1	77	0.3225	5:41:26	29-Jul-09	77.4
1397	75.8	22	77	0.3149	5:42:26	29-Jul-09	77.4
1398	78.1	22.1	77	0.3367	5:43:26	29-Jul-09	77.4
1399	76	22	77	0.3257	5:44:26	29-Jul-09	77.4
1400	76.5	22	77	0.3275	5:45:26	29-Jul-09	77.3
1401	76.7	22.1	77	0.3241	5:46:26	29-Jul-09	77.2
1402	76.1	22	77	0.3276	5:47:26	29-Jul-09	77.1
1403	76.2	22.1	77	0.3173	5:48:26	29-Jul-09	77.1
1404	77.6	22.1	77	0.329	5:49:26	29-Jul-09	77.1
1405	76.9	22	77	0.3224	5:50:26	29-Jul-09	77.0
1406	77.1	22	77	0.3254	5:51:26	29-Jul-09	77.0
1407	76.7	22	77	0.3242	5:52:26	29-Jul-09	76.9
1408	77	22	77	0.3206	5:53:26	29-Jul-09	77.0
1409	76.8	22	77	0.3227	5:54:26	29-Jul-09	76.9
1410	78.1	22	77	0.3292	5:55:26	29-Jul-09	76.9
1411	77.4	22	77	0.3312	5:56:26	29-Jul-09	76.9
1412	77.6	22	77	0.3248	5:57:26	29-Jul-09	76.9
1413	77.3	22	77	0.3277	5:58:26	29-Jul-09	77.0
1414	77.8	22	77	0.3309	5:59:26	29-Jul-09	77.0
1415	77.3	22	77	0.3218	6:00:26	29-Jul-09	77.1
1416	77.7	22	77	0.3197	6:01:26	29-Jul-09	77.1
1417	78.8	22	77	0.3322	6:02:26	29-Jul-09	77.3
1418	76.7	22	78	0.3198	6:03:26	29-Jul-09	77.3
1419	78.5	22	77	0.3231	6:04:26	29-Jul-09	77.5
1420	78.3	22	77	0.3277	6:05:26	29-Jul-09	77.5
1421	77.4	22	78	0.3129	6:06:26	29-Jul-09	77.5
1422	78.9	22	77	0.3269	6:07:26	29-Jul-09	77.6
1423	79.3	22	77	0.3255	6:08:26	29-Jul-09	77.8
1424	80.1	22	78	0.334	6:09:26	29-Jul-09	78.0
1425	79.5	22	78	0.3323	6:10:26	29-Jul-09	78.2
1426	80.4	22	78	0.333	6:11:26	29-Jul-09	78.3
1427	82.3	22	78	0.3375	6:12:26	29-Jul-09	78.6
1428	81.7	22	78	0.3398	6:13:26	29-Jul-09	78.9
1429	81.3	22	78	0.3336	6:14:26	29-Jul-09	79.1
1430	81.3	22	78	0.3315	6:15:26	29-Jul-09	79.3
1431	79.5	22	78	0.3315	6:16:26	29-Jul-09	79.5
1432	80.8	22	78	0.3331	6:17:26	29-Jul-09	79.7
1433	83.2	22	78	0.3456	6:18:26	29-Jul-09	80.0
1434	82.3	22	78	0.3306	6:19:26	29-Jul-09	80.3
1435	81	22	78	0.3322	6:20:26	29-Jul-09	80.5
1436	80.6	22	78	0.3335	6:21:26	29-Jul-09	80.6
1437	81.3	22	78	0.3373	6:22:26	29-Jul-09	80.8
1438	81	22	78	0.3379	6:23:26	29-Jul-09	81.0
1439	81.4	22	78	0.3376	6:24:26	29-Jul-09	81.1
1440	82.8	22	78	0.3346	6:25:26	29-Jul-09	81.3
1441	82.6	22	78	0.3468	6:26:26	29-Jul-09	81.5
1442	82.8	22	78	0.3404	6:27:26	29-Jul-09	81.6
1443	79.8	22	78	0.3308	6:28:26	29-Jul-09	81.5
1444	81.8	22	78	0.3399	6:29:26	29-Jul-09	81.5
1445	81.1	22	78	0.3345	6:30:26	29-Jul-09	81.5
1446	80.9	22	78	0.3311	6:31:26	29-Jul-09	81.4
1447	80.8	22	78	0.3327	6:32:26	29-Jul-09	81.5
1448	81.2	22	78	0.3321	6:33:26	29-Jul-09	81.5
1449	80.8	22	78	0.3347	6:34:26	29-Jul-09	81.4
1450	80	22	78	0.3283	6:35:26	29-Jul-09	81.2
1451	79.2	22	78	0.3279	6:36:26	29-Jul-09	81.1
1452	77.7	22	78	0.3243	6:37:26	29-Jul-09	81.0
1453	77.7	22	79	0.3165	6:38:26	29-Jul-09	80.7
1454	77.9	22	78	0.3244	6:39:26	29-Jul-09	80.5
1455	77.6	22	78	0.3198	6:40:26	29-Jul-09	80.3
1456	78	22	78	0.3278	6:41:26	29-Jul-09	80.0
1457	77.6	22	78	0.3188	6:42:26	29-Jul-09	79.7
1458	77.6	22	79	0.3238	6:43:26	29-Jul-09	79.4
1459	77.6	22.1	78	0.3175	6:44:26	29-Jul-09	79.2
1460	79	22.1	78	0.3215	6:45:26	29-Jul-09	79.0
1461	75.3	22.1	79	0.3199	6:46:26	29-Jul-09	78.7
1462	76.3	22.1	79	0.3246	6:47:26	29-Jul-09	78.4
1463	74.5	22.1	79	0.3152	6:48:26	29-Jul-09	78.0
1464	75.2	22.1	78	0.3123	6:49:26	29-Jul-09	77.6
1465	76.2	22.1	78	0.3192	6:50:26	29-Jul-09	77.3
1466	81.1	22.1	79	0.3359	6:51:26	29-Jul-09	77.4
1467	75.9	22.1	79	0.3212	6:52:26	29-Jul-09	77.2
1468	75.9	22.1	79	0.3174	6:53:26	29-Jul-09	77.1
1469	77.3	22.1	79	0.3129	6:54:26	29-Jul-09	77.1
1470	74.6	22.2	79	0.3162	6:55:26	29-Jul-09	76.9
1471	74	22.1	79	0.3064	6:56:26	29-Jul-09	76.6
1472	73.5	22.2	79	0.3054	6:57:26	29-Jul-09	76.4
1473	75.1	22.2	79	0.3154	6:58:26	29-Jul-09	76.2
1474	75.9	22.2	79	0.3157	6:59:26	29-Jul-09	76.1
1475	72.9	22.2	79	0.313	7:00:26	29-Jul-09	75.8
1476	73.7	22.2	79	0.313	7:01:26	29-Jul-09	75.5
1477	73.7	22.2	79	0.3107	7:02:26	29-Jul-09	75.4
1478	71.7	22.2	79	0.3098	7:03:26	29-Jul-09	75.1
1479	73.4	22.2	79	0.3093	7:04:26	29-Jul-09	75.0
1480	73.7	22.3	79	0.3144	7:05:26	29-Jul-09	74.9
1481	70.3	22.3	79	0.2974	7:06:26	29-Jul-09	74.5
1482	73	22.3	78	0.3051	7:07:26	29-Jul-09	74.0
1483	73.9	22.3	79	0.311	7:08:26	29-Jul-09	73.9
1484	73.5	22.4	78	0.3112	7:09:26	29-Jul-09	73.8
1485	74.6	22.4	79	0.313	7:10:26	29-Jul-09	73.6
1486	73.3	22.4	78	0.3146	7:11:26	29-Jul-09	73.5
1487	73.9	22.4	79	0.3183	7:12:26	29-Jul-09	73.5
1488	70.8	22.4	79	0.3041	7:13:26	29-Jul-09	73.3
1489	72.4	22.5	79	0.2955	7:14:26	29-Jul-09	73.2
1490	74.4	22.5	79	0.3113	7:15:26	29-Jul-09	73.1
1491	73.6	22.5	79	0.3086	7:16:26	29-Jul-09	73.1
1492	69	22.5	79	0.2961	7:17:26	29-Jul-09	72.8

Appendix I
Ambient Air Dust Monitoring Results - SEAD-12 Removal Action

Seneca Army Depot Activity
Romulus, NY

DataRam 4 Dust Monitor, Serial Number D454

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
4	114.8	22.5	63	0.2542	7:17:47	29-Jul-09	
5	115.7	22.6	65	0.2476	7:18:47	29-Jul-09	
6	119.5	22.6	66	0.2567	7:19:47	29-Jul-09	
7	117.8	22.7	67	0.2526	7:20:47	29-Jul-09	
8	114.9	22.7	68	0.2471	7:21:47	29-Jul-09	
9	117.2	22.8	69	0.2501	7:22:47	29-Jul-09	
10	119.4	22.8	70	0.2481	7:23:47	29-Jul-09	
11	122.7	22.9	71	0.2622	7:24:47	29-Jul-09	
12	118.2	22.9	71	0.2547	7:25:47	29-Jul-09	
13	119.6	22.9	72	0.2516	7:26:47	29-Jul-09	
14	124.7	23	73	0.2511	7:27:47	29-Jul-09	
15	118.9	23	73	0.2597	7:28:47	29-Jul-09	
16	116.9	23.1	74	0.2533	7:29:47	29-Jul-09	116.5
17	117.1	23.1	74	0.2459	7:30:47	29-Jul-09	118.0
18	111	23.1	74	0.2458	7:31:47	29-Jul-09	117.8
19	114	23.2	74	0.242	7:32:47	29-Jul-09	117.7
20	115.3	23.2	74	0.2484	7:33:47	29-Jul-09	117.7
21	112.5	23.3	75	0.2458	7:34:47	29-Jul-09	117.5
22	116.4	23.4	75	0.2415	7:35:47	29-Jul-09	117.3

DataRam 4 Dust Monitor, Serial Number D464

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
1493	70.3	22.5	78	0.2986	7:18:26	29-Jul-09	72.6
1494	71	22.6	79	0.3042	7:19:26	29-Jul-09	72.6
1495	70.2	22.6	79	0.2988	7:20:26	29-Jul-09	72.4
1496	70.8	22.6	78	0.3021	7:21:26	29-Jul-09	72.2
1497	68.7	22.6	78	0.298	7:22:26	29-Jul-09	72.1
1498	69.7	22.6	79	0.3057	7:23:26	29-Jul-09	71.9
1499	70.7	22.7	78	0.2957	7:24:26	29-Jul-09	71.7
1500	68.3	22.7	79	0.2991	7:25:26	29-Jul-09	71.4
1501	70.8	22.7	78	0.2949	7:26:26	29-Jul-09	71.1
1502	70.3	22.7	78	0.305	7:27:26	29-Jul-09	70.9
1503	66.6	22.7	78	0.2901	7:28:26	29-Jul-09	70.5
1504	66.5	22.8	78	0.2863	7:29:26	29-Jul-09	70.2
1505	66.3	22.8	78	0.2901	7:30:26	29-Jul-09	69.8
1506	71.8	22.8	78	0.3061	7:31:26	29-Jul-09	69.7
1507	66.8	22.9	78	0.2951	7:32:26	29-Jul-09	69.2
1508	66.4	22.9	78	0.2924	7:33:26	29-Jul-09	69.1
1509	66.2	22.9	78	0.2861	7:34:26	29-Jul-09	68.8
1510	65.3	22.9	78	0.2815	7:35:26	29-Jul-09	68.5
1511	64.1	23	78	0.2813	7:36:26	29-Jul-09	68.1
1512	72.3	23	78	0.2939	7:37:26	29-Jul-09	68.2
1513	65.7	23	78	0.298	7:38:26	29-Jul-09	68.0
1514	63.9	23	78	0.2815	7:39:26	29-Jul-09	67.6
1515	65.4	23	78	0.2984	7:40:26	29-Jul-09	67.3
1516	63.7	23.1	78	0.2903	7:41:26	29-Jul-09	67.0
1517	65.2	23.1	78	0.2881	7:42:26	29-Jul-09	66.7
1518	65.1	23.1	78	0.2885	7:43:26	29-Jul-09	66.3
1519	61.4	23.2	78	0.2719	7:44:26	29-Jul-09	66.0
1520	62.2	23.2	78	0.2778	7:45:26	29-Jul-09	65.7
1521	61.5	23.2	78	0.291	7:46:26	29-Jul-09	65.4
1522	62.7	23.2	78	0.2824	7:47:26	29-Jul-09	64.9
1523	62.5	23.2	78	0.29	7:48:26	29-Jul-09	64.6
1524	62.3	23.2	77	0.2773	7:49:26	29-Jul-09	64.3
1525	62.1	23.3	77	0.2803	7:50:26	29-Jul-09	64.1
1526	63.9	23.3	77	0.2874	7:51:26	29-Jul-09	64.0
1527	61.5	23.3	77	0.2799	7:52:26	29-Jul-09	63.8
1528	60.2	23.4	77	0.2798	7:53:26	29-Jul-09	63.1
1529	60.2	23.4	77	0.2819	7:54:26	29-Jul-09	62.7
1530	60.9	23.4	77	0.2778	7:55:26	29-Jul-09	62.6
1531	58.5	23.5	77	0.2655	7:56:26	29-Jul-09	62.1
1532	58.5	23.5	77	0.2769	7:57:26	29-Jul-09	61.8
1533	59.5	23.5	77	0.2745	7:58:26	29-Jul-09	61.4
1534	61	23.6	77	0.2846	7:59:26	29-Jul-09	61.2
1535	60.3	23.6	77	0.2946	8:00:26	29-Jul-09	61.1
1536	56.9	23.6	77	0.2728	8:01:26	29-Jul-09	60.8
1537	55.8	23.6	77	0.2664	8:02:26	29-Jul-09	60.4
1538	55.6	23.7	77	0.2667	8:03:26	29-Jul-09	60.0
1539	56.7	23.7	77	0.272	8:04:26	29-Jul-09	59.6
1540	56.9	23.7	76	0.2731	8:05:26	29-Jul-09	59.3
1541	55.7	23.8	76	0.2716	8:06:26	29-Jul-09	58.9
1542	57	23.8	76	0.2717	8:07:26	29-Jul-09	58.5
1543	57.3	23.8	76	0.2796	8:08:26	29-Jul-09	58.2
1544	56.6	23.9	76	0.2759	8:09:26	29-Jul-09	58.0
1545	56.4	24	76	0.2766	8:10:26	29-Jul-09	57.7
1546	54.9	24	76	0.2644	8:11:26	29-Jul-09	57.4
1547	56.5	24	76	0.267	8:12:26	29-Jul-09	57.2
1548	56.9	24	76	0.2822	8:13:26	29-Jul-09	57.1
1549	73.7	24	76	0.3216	8:14:26	29-Jul-09	58.0
1550	56.2	24.1	75	0.2743	8:15:26	29-Jul-09	57.7
1551	54.9	24.1	76	0.262	8:16:26	29-Jul-09	57.4
1552	53.1	24.2	76	0.2629	8:17:26	29-Jul-09	57.1
1553	53	24.2	75	0.2637	8:18:26	29-Jul-09	57.0
1554	53.7	24.2	75	0.2598	8:19:26	29-Jul-09	56.8
1555	52.7	24.3	75	0.2591	8:20:26	29-Jul-09	56.6
1556	54.2	24.3	75	0.264	8:21:26	29-Jul-09	56.4
1557	56.4	24.3	75	0.2695	8:22:26	29-Jul-09	56.5
1558	53.7	24.4	75	0.2579	8:23:26	29-Jul-09	56.3
1559	51.7	24.4	75	0.2546	8:24:26	29-Jul-09	55.9
1560	50.2	24.5	75	0.2525	8:25:26	29-Jul-09	55.5
1561	52.9	24.6	75	0.2628	8:26:26	29-Jul-09	55.3
1562	54	24.6	75	0.2707	8:27:26	29-Jul-09	55.2
1563	65.3	24.6	75	0.338	8:28:26	29-Jul-09	55.8
1564	49.5	24.7	74	0.2614	8:29:26	29-Jul-09	55.3
1565	49.7	24.7	74	0.2553	8:30:26	29-Jul-09	53.8
1566	56.4	24.8	74	0.2961	8:31:26	29-Jul-09	53.8
1567	49.8	24.8	74	0.2728	8:32:26	29-Jul-09	53.5
1568	48.8	24.9	74	0.2543	8:33:26	29-Jul-09	53.3
1569	48.7	24.9	74	0.2486	8:34:26	29-Jul-09	53.0
1570	47.9	25	74	0.2466	8:35:26	29-Jul-09	52.6
1571	46.7	25	74	0.2438	8:36:26	29-Jul-09	52.2
1572	47	25.1	73	0.2417	8:37:26	29-Jul-09	51.8
1573	47.6	25.1	73	0.2455	8:38:26	29-Jul-09	51.2
1574	47.4	25.1	73	0.2531	8:39:26	29-Jul-09	50.9
1575	48.2	25.2	73	0.2498	8:40:26	29-Jul-09	50.6
1576	48	25.2	73	0.2494	8:41:26	29-Jul-09	50.5
1577	46.9	25.3	73	0.2459	8:42:26	29-Jul-09	50.1
1578	48.7	25.3	73	0.26	8:43:26	29-Jul-09	49.8
1579	50.3	25.4	72	0.2575	8:44:26	29-Jul-09	48.9
1580	56.9	25.4	72	0.3194	8:45:26	29-Jul-09	49.3
1581	45.9	25.5	72	0.2494	8:46:26	29-Jul-09	49.1
1582	45.5	25.5	72	0.2476	8:47:26	29-Jul-09	48.4
1583	48.7	25.5	72	0.2572	8:48:26	29-Jul-09	48.3
1584	94.7	25.6	72	0.3737	8:49:26	29-Jul-09	51.2
1585	45.7	25.6	72	0.2621	8:50:26	29-Jul-09	51.0
1586	46.3	25.6	71	0.245	8:51:26	29-Jul-09	50.9
1587	44.1	25.7	71	0.2368	8:52:26	29-Jul-09	50.7
1588	45.7	25.7	71	0.2422	8:53:26	29-Jul-09	50.7
1589	44.9	25.7	71	0.2481	8:54:26	29-Jul-09	50.5
1590	44.3	25.8	71	0.2381	8:55:26	29-Jul-09	50.3
1591	44.5	25.8	71	0.243	8:56:26	29-Jul-09	50.1
1592	43.8	25.9	71	0.2367	8:57:26	29-Jul-09	49.8

Appendix I
Ambient Air Dust Monitoring Results - SEAD-12 Removal Action

Seneca Army Depot Activity
Romulus, NY

DataRam 4 Dust Monitor, Serial Number D454

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^oC)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)

DataRam 4 Dust Monitor, Serial Number D464

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^oC)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
1593	43.1	25.9	71	0.2359	8:58:26	29-Jul-09	49.6
1594	42.9	26	70	0.2369	8:59:26	29-Jul-09	49.2
1595	53.9	26	70	0.2859	9:00:26	29-Jul-09	49.4
1596	62.1	26.1	70	0.3275	9:01:26	29-Jul-09	49.8
1597	44.9	26.1	70	0.2839	9:02:26	29-Jul-09	49.7
1598	42.1	26.1	70	0.2361	9:03:26	29-Jul-09	49.5
1599	44.5	26.2	70	0.2448	9:04:26	29-Jul-09	49.2
1600	46.7	26.2	70	0.2616	9:05:26	29-Jul-09	46.2
1601	42.3	26.2	70	0.2304	9:06:26	29-Jul-09	46.0
1602	42.7	26.3	69	0.2325	9:07:26	29-Jul-09	45.8
1603	43.3	26.3	69	0.2313	9:08:26	29-Jul-09	45.7
1604	43.4	26.4	69	0.2458	9:09:26	29-Jul-09	45.6
1605	48.4	26.4	69	0.2839	9:10:26	29-Jul-09	45.8
1606	47.5	26.4	69	0.2601	9:11:26	29-Jul-09	46.0
1607	45	26.5	69	0.2685	9:12:26	29-Jul-09	46.0
1608	43.2	26.5	69	0.2427	9:13:26	29-Jul-09	46.0
1609	47	26.5	69	0.2631	9:14:26	29-Jul-09	46.2
1610	44.4	26.6	68	0.2592	9:15:26	29-Jul-09	46.3
1611	42.7	26.6	68	0.2344	9:16:26	29-Jul-09	45.6
1612	43.7	26.6	68	0.2519	9:17:26	29-Jul-09	44.5
1613	43.7	26.7	68	0.2424	9:18:26	29-Jul-09	44.4
1614	43.1	26.7	68	0.2413	9:19:26	29-Jul-09	44.5
1615	48.4	26.7	68	0.2711	9:20:26	29-Jul-09	44.7
1616	42.5	26.8	68	0.228	9:21:26	29-Jul-09	44.5
1617	43.4	26.8	68	0.2465	9:22:26	29-Jul-09	44.5
1618	44.7	26.8	68	0.2495	9:23:26	29-Jul-09	44.7
1619	42.3	26.9	68	0.2371	9:24:26	29-Jul-09	44.6
1620	41.7	26.9	68	0.2376	9:25:26	29-Jul-09	44.5
1621	41.4	27	67	0.2403	9:26:26	29-Jul-09	44.0
1622	41.9	27	67	0.2356	9:27:26	29-Jul-09	43.7
1623	42.7	27	67	0.2462	9:28:26	29-Jul-09	43.6
1624	42.2	27.1	67	0.2378	9:29:26	29-Jul-09	43.5
1625	45.3	27.1	67	0.2473	9:30:26	29-Jul-09	43.4
1626	49.7	27.2	67	0.2809	9:31:26	29-Jul-09	43.7
1627	41	27.2	67	0.2358	9:32:26	29-Jul-09	43.6
1628	40.2	27.2	67	0.2319	9:33:26	29-Jul-09	43.4
1629	40.2	27.3	67	0.2267	9:34:26	29-Jul-09	43.2
1630	40.5	27.3	67	0.2292	9:35:26	29-Jul-09	43.0
1631	47.9	27.4	66	0.2751	9:36:26	29-Jul-09	43.0
1632	56.1	27.4	66	0.2819	9:37:26	29-Jul-09	43.8
1633	40.1	27.5	66	0.2585	9:38:26	29-Jul-09	43.6
1634	38.5	27.5	66	0.2253	9:39:26	29-Jul-09	43.2
1635	38.5	27.6	66	0.2212	9:40:26	29-Jul-09	43.0
1636	39.3	27.6	66	0.2209	9:41:26	29-Jul-09	42.8
1637	40.7	27.7	65	0.2336	9:42:26	29-Jul-09	42.8
1638	38.4	27.8	65	0.2388	9:43:26	29-Jul-09	42.6
1639	39	27.8	65	0.2239	9:44:26	29-Jul-09	42.4
1640	38.3	27.9	65	0.2292	9:45:26	29-Jul-09	42.1
1641	38.1	27.9	65	0.2248	9:46:26	29-Jul-09	41.7
1642	38.3	28	65	0.2268	9:47:26	29-Jul-09	40.9
1643	37.7	28	64	0.2236	9:48:26	29-Jul-09	40.7
1644	38.8	28.1	64	0.2362	9:49:26	29-Jul-09	40.7
1645	36.7	28.1	64	0.2163	9:50:26	29-Jul-09	40.4
1646	36.5	28.2	64	0.2143	9:51:26	29-Jul-09	40.2
1647	38.2	28.2	64	0.2368	9:52:26	29-Jul-09	39.6
1648	37.3	28.3	64	0.2273	9:53:26	29-Jul-09	38.4
1649	36.4	28.3	64	0.213	9:54:26	29-Jul-09	38.2
1650	36.2	28.4	63	0.2168	9:55:26	29-Jul-09	38.0
1651	37.5	28.5	63	0.2269	9:56:26	29-Jul-09	38.0
1652	37.1	28.5	63	0.2186	9:57:26	29-Jul-09	37.8
1653	36.3	28.6	63	0.2201	9:58:26	29-Jul-09	37.6
1654	35.4	28.7	63	0.2066	9:59:26	29-Jul-09	37.4
1655	35.5	28.7	62	0.2009	10:00:26	29-Jul-09	37.1
1656	35.7	28.7	62	0.2144	10:01:26	29-Jul-09	37.0
1657	35.2	28.8	62	0.2177	10:02:26	29-Jul-09	36.8
1658	35.5	28.9	62	0.2168	10:03:26	29-Jul-09	36.6
1659	36.1	28.9	62	0.2174	10:04:26	29-Jul-09	36.5
1660	35.3	29	61	0.2031	10:05:26	29-Jul-09	36.3
1661	35.8	29	61	0.2149	10:06:26	29-Jul-09	36.3
1662	35.3	29.1	61	0.2155	10:07:26	29-Jul-09	36.2
1663	36.1	29.1	61	0.2077	10:08:26	29-Jul-09	36.0
1664	35.6	29.2	61	0.2081	10:09:26	29-Jul-09	35.9
1665	36	29.2	61	0.2095	10:10:26	29-Jul-09	35.9
1666	35.2	29.2	61	0.2109	10:11:26	29-Jul-09	35.9
1667	36	29.3	61	0.2062	10:12:26	29-Jul-09	35.8
1668	35.9	29.3	60	0.213	10:13:26	29-Jul-09	35.7
1669	35.7	29.4	60	0.2086	10:14:26	29-Jul-09	35.6
1670	36.1	29.4	60	0.2129	10:15:26	29-Jul-09	35.7
1671	36.6	29.5	60	0.2269	10:16:26	29-Jul-09	35.8
1672	35.8	29.5	60	0.2205	10:17:26	29-Jul-09	35.8
1673	35.8	29.5	60	0.2284	10:18:26	29-Jul-09	35.8
1674	34.6	29.6	60	0.2023	10:19:26	29-Jul-09	35.7
1675	34.8	29.6	59	0.2016	10:20:26	29-Jul-09	35.7
1676	37	29.7	59	0.2239	10:21:26	29-Jul-09	35.8
1677	34.4	29.7	59	0.2043	10:22:26	29-Jul-09	35.7
1678	35.3	29.7	59	0.2169	10:23:26	29-Jul-09	35.7
1679	34.5	29.7	59	0.214	10:24:26	29-Jul-09	35.6
1680	34	29.8	59	0.2038	10:25:26	29-Jul-09	35.5
1681	33.8	29.8	59	0.2089	10:26:26	29-Jul-09	35.3
1682	34	29.9	58	0.2062	10:27:26	29-Jul-09	35.3
1683	33.9	29.9	58	0.2051	10:28:26	29-Jul-09	35.1
1684	41.4	30	58	0.2563	10:29:26	29-Jul-09	35.5
1685	36.3	30	58	0.2415	10:30:26	29-Jul-09	35.5
1686	34.3	30	58	0.2119	10:31:26	29-Jul-09	35.4
1687	34.9	30.1	58	0.2212	10:32:26	29-Jul-09	35.3
1688	35.9	30.1	58	0.2122	10:33:26	29-Jul-09	35.3
1689	34.9	30.1	58	0.2075	10:34:26	29-Jul-09	35.3
1690	34.4	30.2	58	0.2096	10:35:26	29-Jul-09	35.2
1691	34.3	30.2	58	0.2127	10:36:26	29-Jul-09	35.2
1692	35.1	30.2	58	0.2143	10:37:26	29-Jul-09	35.1

Appendix I
Ambient Air Dust Monitoring Results - SEAD-12 Removal Action

Seneca Army Depot Activity
Romulus, NY

DataRam 4 Dust Monitor, Serial Number D454

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^oC)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)

DataRam 4 Dust Monitor, Serial Number D464

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^oC)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
1693	34.9	30.3	58	0.2172	10:38:26	29-Jul-09	35.1
1694	34.3	30.3	57	0.2063	10:39:26	29-Jul-09	35.1
1695	34.7	30.4	57	0.2077	10:40:26	29-Jul-09	35.1
1696	33.9	30.4	57	0.2063	10:41:26	29-Jul-09	35.1
1697	33.4	30.4	57	0.2059	10:42:26	29-Jul-09	35.0
1698	39.5	30.5	57	0.2416	10:43:26	29-Jul-09	35.4
1699	35.6	30.5	57	0.228	10:44:26	29-Jul-09	35.5
1700	34.3	30.5	57	0.2035	10:45:26	29-Jul-09	35.0
1701	34	30.6	57	0.2129	10:46:26	29-Jul-09	34.9
1702	35	30.6	57	0.217	10:47:26	29-Jul-09	34.9
1703	35	30.6	57	0.2099	10:48:26	29-Jul-09	35.0
1704	34.9	30.7	57	0.2192	10:49:26	29-Jul-09	34.9
1705	34.3	30.7	56	0.211	10:50:26	29-Jul-09	34.9
1706	33.7	30.7	56	0.1969	10:51:26	29-Jul-09	34.8
1707	34.9	30.8	56	0.211	10:52:26	29-Jul-09	34.8
1708	34.3	30.8	56	0.206	10:53:26	29-Jul-09	34.8
1709	33.9	30.9	56	0.2084	10:54:26	29-Jul-09	34.7
1710	33.6	30.9	56	0.2145	10:55:26	29-Jul-09	34.7
1711	33.9	30.9	56	0.208	10:56:26	29-Jul-09	34.6
1712	33.5	30.9	56	0.2018	10:57:26	29-Jul-09	34.6
1713	33.5	31	56	0.2063	10:58:26	29-Jul-09	34.6
1714	52.8	31	56	0.2493	10:59:26	29-Jul-09	35.5
1715	59.9	31	55	0.4951	11:00:26	29-Jul-09	37.0
1716	34	31.1	55	0.2188	11:01:26	29-Jul-09	37.0
1717	34.2	31.1	55	0.215	11:02:26	29-Jul-09	37.0
1718	34.6	31.1	55	0.2229	11:03:26	29-Jul-09	36.9
1719	33	31.1	55	0.2106	11:04:26	29-Jul-09	36.8
1720	33	31.2	55	0.204	11:05:26	29-Jul-09	36.7
1721	33	31.2	55	0.2029	11:06:26	29-Jul-09	36.6
1722	34.3	31.2	55	0.2039	11:07:26	29-Jul-09	36.7
1723	41.8	31.3	55	0.2326	11:08:26	29-Jul-09	37.1
1724	45	31.3	54	0.3467	11:09:26	29-Jul-09	37.8
1725	32.4	31.4	54	0.1972	11:10:26	29-Jul-09	37.7
1726	44.9	31.4	54	0.2909	11:11:26	29-Jul-09	38.4
1727	43.1	31.5	54	0.2319	11:12:26	29-Jul-09	38.9
1728	55	31.5	54	0.3259	11:13:26	29-Jul-09	40.3
1729	43.1	31.5	54	0.2912	11:14:26	29-Jul-09	40.9
1730	33.4	31.5	54	0.2126	11:15:26	29-Jul-09	39.7
1731	34.4	31.6	54	0.214	11:16:26	29-Jul-09	38.1
1732	32.6	31.6	54	0.2045	11:17:26	29-Jul-09	38.0
1733	32.7	31.7	53	0.2066	11:18:26	29-Jul-09	37.9
1734	33.3	31.7	53	0.2041	11:19:26	29-Jul-09	37.8
1735	32.8	31.7	53	0.2089	11:20:26	29-Jul-09	37.8
1736	34	31.7	53	0.2127	11:21:26	29-Jul-09	37.9
1737	33.4	31.8	53	0.2082	11:22:26	29-Jul-09	37.9
1738	32.5	31.8	53	0.2028	11:23:26	29-Jul-09	37.8
1739	33.6	31.9	53	0.2039	11:24:26	29-Jul-09	37.3
1740	33.7	31.9	53	0.201	11:25:26	29-Jul-09	36.6
1741	40.2	31.9	52	0.2682	11:26:26	29-Jul-09	37.0
1742	32.2	32	52	0.2074	11:27:26	29-Jul-09	36.3
1743	32.2	32	52	0.2073	11:28:26	29-Jul-09	35.6
1744	31.9	32	52	0.2035	11:29:26	29-Jul-09	34.1
1745	31.4	32	52	0.1944	11:30:26	29-Jul-09	33.4
1746	33.6	32.1	52	0.2148	11:31:26	29-Jul-09	33.4
1747	33.2	32.1	52	0.2284	11:32:26	29-Jul-09	33.3
1748	35.1	32.1	51	0.2209	11:33:26	29-Jul-09	33.5
1749	32.1	32.1	51	0.222	11:34:26	29-Jul-09	33.5
1750	32.5	32.2	51	0.2099	11:35:26	29-Jul-09	33.4
1751	31.9	32.2	51	0.2039	11:36:26	29-Jul-09	33.3
1752	31.8	32.2	51	0.1935	11:37:26	29-Jul-09	33.2
1753	32.1	32.2	51	0.2028	11:38:26	29-Jul-09	33.1
1754	31.7	32.2	51	0.1994	11:39:26	29-Jul-09	33.1
1755	33.3	32.3	51	0.2057	11:40:26	29-Jul-09	33.1
1756	44.3	32.3	51	0.2827	11:41:26	29-Jul-09	33.7
1757	33.8	32.3	51	0.2584	11:42:26	29-Jul-09	33.3
1758	31.5	32.3	51	0.1945	11:43:26	29-Jul-09	33.3
1759	30.7	32.4	50	0.1985	11:44:26	29-Jul-09	33.2
1760	31.7	32.4	50	0.2126	11:45:26	29-Jul-09	33.2
1761	31.4	32.4	50	0.2091	11:46:26	29-Jul-09	33.2
1762	33.2	32.4	50	0.2106	11:47:26	29-Jul-09	33.1
1763	31.5	32.5	50	0.1987	11:48:26	29-Jul-09	33.0
1764	31.8	32.5	50	0.205	11:49:26	29-Jul-09	32.8
1765	31.2	32.5	50	0.1965	11:50:26	29-Jul-09	32.8
1766	32	32.5	50	0.1958	11:51:26	29-Jul-09	32.7
1767	31.4	32.5	50	0.2008	11:52:26	29-Jul-09	32.7
1768	33.7	32.6	50	0.2077	11:53:26	29-Jul-09	32.8
1769	40.8	32.6	50	0.2769	11:54:26	29-Jul-09	33.4
1770	31.6	32.6	50	0.212	11:55:26	29-Jul-09	33.4
1771	31.3	32.6	50	0.1992	11:56:26	29-Jul-09	33.2
1772	32.1	32.7	50	0.1948	11:57:26	29-Jul-09	32.5
1773	31	32.7	50	0.1941	11:58:26	29-Jul-09	32.3
1774	31.7	32.7	49	0.2051	11:59:26	29-Jul-09	32.3
1775	32.2	32.7	49	0.2122	12:00:26	29-Jul-09	32.4
1776	31.3	32.7	49	0.1978	12:01:26	29-Jul-09	32.4
1777	31.1	32.7	49	0.1994	12:02:26	29-Jul-09	32.4
1778	31.9	32.7	49	0.2036	12:03:26	29-Jul-09	32.3
1779	31.2	32.7	49	0.198	12:04:26	29-Jul-09	32.3
1780	45	32.8	49	0.2872	12:05:26	29-Jul-09	33.1
1781	32	32.8	49	0.2153	12:06:26	29-Jul-09	33.1
1782	31.5	32.8	49	0.1943	12:07:26	29-Jul-09	33.1
1783	31.7	32.8	49	0.2001	12:08:26	29-Jul-09	33.1
1784	32.8	32.8	49	0.2128	12:09:26	29-Jul-09	33.1
1785	32.7	32.8	49	0.212	12:10:26	29-Jul-09	32.6
1786	32.8	32.8	49	0.2099	12:11:26	29-Jul-09	32.6
1787	32.4	32.8	49	0.1965	12:12:26	29-Jul-09	32.7
1788	32.9	32.8	49	0.2075	12:13:26	29-Jul-09	32.8
1789	33.3	32.8	49	0.2231	12:14:26	29-Jul-09	32.9
1790	32.3	32.8	49	0.2142	12:15:26	29-Jul-09	32.9
1791	32.4	32.8	49	0.2097	12:16:26	29-Jul-09	33.0
1792	33	32.8	49	0.2218	12:17:26	29-Jul-09	33.1

Appendix I
Ambient Air Dust Monitoring Results - SEAD-12 Removal Action

Seneca Army Depot Activity
Romulus, NY

DataRam 4 Dust Monitor, Serial Number D454

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^oC)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)

DataRam 4 Dust Monitor, Serial Number D464

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^oC)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
1793	31.5	32.8	49	0.201	12:18:26	29-Jul-09	33.1
1794	30.7	32.8	49	0.1911	12:19:26	29-Jul-09	33.0
1795	31.5	32.8	49	0.1898	12:20:26	29-Jul-09	33.0
1796	31.3	32.7	49	0.192	12:21:26	29-Jul-09	32.2
1797	32.6	32.7	49	0.2048	12:22:26	29-Jul-09	32.2
1798	32.2	32.7	49	0.1948	12:23:26	29-Jul-09	32.3
1799	32.8	32.7	49	0.2106	12:24:26	29-Jul-09	32.3
1800	32.4	32.7	49	0.2066	12:25:26	29-Jul-09	32.3
1801	32.6	32.7	49	0.1951	12:26:26	29-Jul-09	32.3
1802	34.6	32.6	49	0.2214	12:27:26	29-Jul-09	32.4
1803	33	32.7	49	0.2164	12:28:26	29-Jul-09	32.4
1804	32.5	32.6	49	0.2112	12:29:26	29-Jul-09	32.4
1805	33.2	32.6	49	0.2094	12:30:26	29-Jul-09	32.4
1806	33.1	32.6	50	0.2029	12:31:26	29-Jul-09	32.5
1807	33.1	32.5	50	0.2018	12:32:26	29-Jul-09	32.5
1808	33.2	32.5	50	0.2047	12:33:26	29-Jul-09	32.5
1809	34	32.5	50	0.2086	12:34:26	29-Jul-09	32.7
1810	34.1	32.5	50	0.2183	12:35:26	29-Jul-09	32.9
1811	33	32.5	50	0.2101	12:36:26	29-Jul-09	33.0
1812	33.6	32.4	50	0.2092	12:37:26	29-Jul-09	33.1
1813	40.5	32.4	50	0.237	12:38:26	29-Jul-09	33.6
1814	38.9	32.4	50	0.2701	12:39:26	29-Jul-09	34.0
1815	34.5	32.4	50	0.2209	12:40:26	29-Jul-09	34.1
1816	34.3	32.3	50	0.2129	12:41:26	29-Jul-09	34.3
1817	35	32.3	50	0.2206	12:42:26	29-Jul-09	34.4
1818	34.9	32.2	50	0.2187	12:43:26	29-Jul-09	34.4
1819	34.8	32.2	50	0.2172	12:44:26	29-Jul-09	34.5
1820	35.3	32.2	51	0.224	12:45:26	29-Jul-09	34.7
1821	35.3	32.1	51	0.2277	12:46:26	29-Jul-09	34.9
1822	35.6	32.1	51	0.2256	12:47:26	29-Jul-09	35.0
1823	35.7	32.1	51	0.2297	12:48:26	29-Jul-09	35.2
1824	35.1	32.1	51	0.2169	12:49:26	29-Jul-09	35.3
1825	35.3	32	51	0.2221	12:50:26	29-Jul-09	35.4
1826	36.5	32	51	0.2236	12:51:26	29-Jul-09	35.5
1827	35.4	32	51	0.2167	12:52:26	29-Jul-09	35.7
1828	36.2	31.9	51	0.2241	12:53:26	29-Jul-09	35.8
1829	36.8	31.9	51	0.2194	12:54:26	29-Jul-09	35.6
1830	36.7	31.8	52	0.2279	12:55:26	29-Jul-09	35.5
1831	38.7	31.8	52	0.2228	12:56:26	29-Jul-09	35.7
1832	71.6	31.8	52	0.3368	12:57:26	29-Jul-09	38.1
1833	36.4	31.7	52	0.2289	12:58:26	29-Jul-09	38.1
1834	36.2	31.7	52	0.2229	12:59:26	29-Jul-09	38.2
1835	37	31.7	52	0.237	13:00:26	29-Jul-09	38.4
1836	36.7	31.6	52	0.2301	13:01:26	29-Jul-09	38.5
1837	36.8	31.6	52	0.2316	13:02:26	29-Jul-09	38.5
1838	36.7	31.6	52	0.23	13:03:26	29-Jul-09	38.6
1839	39.1	31.6	52	0.24	13:04:26	29-Jul-09	38.8
1840	36.9	31.5	52	0.2384	13:05:26	29-Jul-09	38.9
1841	37.1	31.5	52	0.2344	13:06:26	29-Jul-09	39.1
1842	36.3	31.5	52	0.2275	13:07:26	29-Jul-09	39.0
1843	36	31.4	52	0.2185	13:08:26	29-Jul-09	39.1
1844	36.4	31.4	53	0.222	13:09:26	29-Jul-09	39.1
1845	57	31.3	52	0.3816	13:10:26	29-Jul-09	40.4
1846	42	31.3	53	0.3011	13:11:26	29-Jul-09	40.7
1847	39.5	31.3	53	0.2531	13:12:26	29-Jul-09	40.7
1848	37	31.3	53	0.2404	13:13:26	29-Jul-09	38.6
1849	37.7	31.2	53	0.2283	13:14:26	29-Jul-09	38.7
1850	39.1	31.2	53	0.2505	13:15:26	29-Jul-09	38.8
1851	38.5	31.2	53	0.2376	13:16:26	29-Jul-09	38.9
1852	37.6	31.1	53	0.2194	13:17:26	29-Jul-09	39.0
1853	38.6	31.1	54	0.2354	13:18:26	29-Jul-09	39.1
1854	38.2	31.1	54	0.2308	13:19:26	29-Jul-09	39.2
1855	39.2	31	54	0.2538	13:20:26	29-Jul-09	39.2
1856	40.1	31	54	0.2452	13:21:26	29-Jul-09	39.4
1857	38.1	30.9	54	0.2241	13:22:26	29-Jul-09	39.5
1858	39.2	30.9	54	0.2398	13:23:26	29-Jul-09	39.6
1859	41.9	30.8	54	0.254	13:24:26	29-Jul-09	40.0
1860	40.7	30.8	54	0.2402	13:25:26	29-Jul-09	40.3
1861	47.4	30.8	54	0.2889	13:26:26	29-Jul-09	39.7
1862	44.5	30.7	55	0.2665	13:27:26	29-Jul-09	39.8
1863	42.4	30.7	55	0.2697	13:28:26	29-Jul-09	40.0
1864	47.9	30.6	55	0.2855	13:29:26	29-Jul-09	40.7
1865	46.6	30.6	55	0.3013	13:30:26	29-Jul-09	41.3
1866	42.7	30.5	55	0.2491	13:31:26	29-Jul-09	41.5
1867	42.2	30.5	55	0.2518	13:32:26	29-Jul-09	41.7
1868	42.7	30.5	56	0.2483	13:33:26	29-Jul-09	42.0
1869	43.5	30.4	56	0.2474	13:34:26	29-Jul-09	42.3
1870	43.1	30.4	56	0.249	13:35:26	29-Jul-09	42.6
1871	47.2	30.4	56	0.2901	13:36:26	29-Jul-09	43.1
1872	45.8	30.3	56	0.2631	13:37:26	29-Jul-09	43.5
1873	47.4	30.3	57	0.2697	13:38:26	29-Jul-09	44.1
1874	54.4	30.2	57	0.2922	13:39:26	29-Jul-09	45.0
1875	48.1	30.2	57	0.2799	13:40:26	29-Jul-09	45.4
1876	45.7	30.2	57	0.2621	13:41:26	29-Jul-09	45.7
1877	46.7	30.2	57	0.2709	13:42:26	29-Jul-09	45.7
1878	45.2	30.1	57	0.2486	13:43:26	29-Jul-09	45.7
1879	45.3	30.1	58	0.2576	13:44:26	29-Jul-09	45.9
1880	45.2	30.1	58	0.2577	13:45:26	29-Jul-09	45.7
1881	46.3	30.1	58	0.2592	13:46:26	29-Jul-09	45.7
1882	44	30	58	0.2467	13:47:26	29-Jul-09	45.8
1883	48.7	30	58	0.2538	13:48:26	29-Jul-09	46.2
1884	48.8	30	59	0.2645	13:49:26	29-Jul-09	46.6
1885	47	29.9	59	0.2557	13:50:26	29-Jul-09	46.8
1886	46.1	29.9	59	0.2544	13:51:26	29-Jul-09	47.0
1887	46.4	29.9	59	0.2556	13:52:26	29-Jul-09	46.9
1888	49.3	29.8	59	0.2675	13:53:26	29-Jul-09	47.2
1889	49.2	29.8	59	0.2814	13:54:26	29-Jul-09	47.3
1890	47	29.8	59	0.2651	13:55:26	29-Jul-09	46.8
1891	49.2	29.8	59	0.2616	13:56:26	29-Jul-09	46.9
1892	48	29.7	60	0.2636	13:57:26	29-Jul-09	47.0

Appendix I
Ambient Air Dust Monitoring Results - SEAD-12 Removal Action

Seneca Army Depot Activity
Romulus, NY

DataRam 4 Dust Monitor, Serial Number D454

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^oC)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)

DataRam 4 Dust Monitor, Serial Number D464

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^oC)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
1893	47.2	29.7	60	0.2582	13:58:26	29-Jul-09	47.1
1894	46.8	29.7	60	0.2611	13:59:26	29-Jul-09	47.2
1895	48.4	29.6	60	0.2607	14:00:26	29-Jul-09	47.4
1896	47.2	29.6	60	0.2593	14:01:26	29-Jul-09	47.5
1897	50.3	29.6	60	0.2727	14:02:26	29-Jul-09	47.7
1898	51.8	29.6	60	0.2726	14:03:26	29-Jul-09	48.2
1899	48.1	29.6	61	0.2727	14:04:26	29-Jul-09	48.2
1900	51.6	29.6	61	0.2776	14:05:26	29-Jul-09	48.4
1901	47.4	29.5	61	0.2653	14:06:26	29-Jul-09	48.4
1902	47.9	29.5	61	0.2585	14:07:26	29-Jul-09	48.5
1903	46.3	29.5	61	0.2523	14:08:26	29-Jul-09	48.5
1904	46.9	29.5	61	0.264	14:09:26	29-Jul-09	48.3
1905	50.4	29.4	61	0.2799	14:10:26	29-Jul-09	48.4
1906	49.7	29.4	61	0.2795	14:11:26	29-Jul-09	48.6
1907	47.4	29.4	61	0.2656	14:12:26	29-Jul-09	48.5
1908	47	29.4	61	0.2629	14:13:26	29-Jul-09	48.4
1909	45.6	29.4	61	0.2572	14:14:26	29-Jul-09	48.3
1910	44.8	29.3	61	0.2543	14:15:26	29-Jul-09	48.2
1911	55.3	29.3	61	0.3126	14:16:26	29-Jul-09	48.6
1912	47.7	29.3	61	0.2911	14:17:26	29-Jul-09	48.6
1913	45.9	29.3	61	0.2671	14:18:26	29-Jul-09	48.4
1914	46.6	29.3	61	0.2681	14:19:26	29-Jul-09	48.0
1915	48.6	29.3	62	0.2784	14:20:26	29-Jul-09	48.1
1916	46.4	29.3	61	0.2678	14:21:26	29-Jul-09	47.7
1917	46.7	29.2	62	0.2611	14:22:26	29-Jul-09	47.7
1918	47	29.2	62	0.2688	14:23:26	29-Jul-09	47.6
1919	47.7	29.2	62	0.2712	14:24:26	29-Jul-09	47.7
1920	47.2	29.2	62	0.2661	14:25:26	29-Jul-09	47.8
1921	48.7	29.2	62	0.2824	14:26:26	29-Jul-09	47.6
1922	48.8	29.2	62	0.2705	14:27:26	29-Jul-09	47.6
1923	47.9	29.2	62	0.265	14:28:26	29-Jul-09	47.6
1924	52.3	29.1	62	0.2894	14:29:26	29-Jul-09	48.0
1925	49.4	29.1	62	0.289	14:30:26	29-Jul-09	48.2
1926	49.1	29.1	62	0.2681	14:31:26	29-Jul-09	48.5
1927	48.3	29.1	62	0.2751	14:32:26	29-Jul-09	48.0
1928	47.3	29.1	62	0.2752	14:33:26	29-Jul-09	48.0
1929	52.5	29.1	62	0.2872	14:34:26	29-Jul-09	48.4
1930	48.8	29.1	63	0.2852	14:35:26	29-Jul-09	48.5
1931	47	29.1	63	0.2652	14:36:26	29-Jul-09	48.4
1932	47.4	29.1	63	0.2714	14:37:26	29-Jul-09	48.5
1933	47	29.1	63	0.2749	14:38:26	29-Jul-09	48.5
1934	46.8	29.1	63	0.2664	14:39:26	29-Jul-09	48.5
1935	47.9	29	63	0.2703	14:40:26	29-Jul-09	48.5
1936	48	29	63	0.2692	14:41:26	29-Jul-09	48.6
1937	48.1	29	63	0.2679	14:42:26	29-Jul-09	48.5
1938	50.4	29	63	0.2805	14:43:26	29-Jul-09	48.6
1939	49.5	29	63	0.2778	14:44:26	29-Jul-09	48.7
1940	48.7	29	63	0.2708	14:45:26	29-Jul-09	48.5
1941	49.5	29	63	0.2787	14:46:26	29-Jul-09	48.5
1942	49.6	29	63	0.272	14:47:26	29-Jul-09	48.6
1943	50.9	29	64	0.2985	14:48:26	29-Jul-09	48.7
1944	51.3	29	64	0.2953	14:49:26	29-Jul-09	49.0
1945	49.6	29	64	0.2696	14:50:26	29-Jul-09	48.8
1946	50.2	29	64	0.2822	14:51:26	29-Jul-09	48.9
1947	47.2	29	64	0.2703	14:52:26	29-Jul-09	48.9
1948	47.2	29	64	0.2677	14:53:26	29-Jul-09	48.9
1949	48.2	29	64	0.2744	14:54:26	29-Jul-09	48.9
1950	48.5	29	64	0.2806	14:55:26	29-Jul-09	49.1
1951	47.4	29	64	0.2708	14:56:26	29-Jul-09	49.0
1952	47.6	29	64	0.2732	14:57:26	29-Jul-09	49.0
1953	49.3	29	64	0.2877	14:58:26	29-Jul-09	49.1
1954	46.5	29	64	0.2767	14:59:26	29-Jul-09	48.8
1955	46.2	28.9	64	0.2784	15:00:26	29-Jul-09	48.6
1956	47.4	28.9	64	0.2801	15:01:26	29-Jul-09	48.5
1957	47.6	28.9	64	0.2819	15:02:26	29-Jul-09	48.4
1958	45.9	29	64	0.272	15:03:26	29-Jul-09	48.2
1959	45.4	28.9	65	0.279	15:04:26	29-Jul-09	47.8
1960	46.2	28.9	64	0.2803	15:05:26	29-Jul-09	47.5
1961	47.7	28.9	64	0.282	15:06:26	29-Jul-09	47.4
1962	43.5	28.9	65	0.2736	15:07:26	29-Jul-09	47.0
1963	43.6	28.9	64	0.2778	15:08:26	29-Jul-09	46.8
1964	43.9	28.8	64	0.2656	15:09:26	29-Jul-09	46.6
1965	43.5	28.8	65	0.2656	15:10:26	29-Jul-09	46.3
1966	43.3	28.8	65	0.2772	15:11:26	29-Jul-09	45.9
1967	44.8	28.8	64	0.2712	15:12:26	29-Jul-09	45.8
1968	45.2	28.8	65	0.2879	15:13:26	29-Jul-09	45.6
1969	45.9	28.8	65	0.2899	15:14:26	29-Jul-09	45.4
1970	44.7	28.8	65	0.2851	15:15:26	29-Jul-09	45.3
1971	40.5	28.7	65	0.2722	15:16:26	29-Jul-09	44.9
1972	40.9	28.7	65	0.2628	15:17:26	29-Jul-09	44.5
1973	41.8	28.7	65	0.2613	15:18:26	29-Jul-09	44.2
1974	42.4	28.7	65	0.2745	15:19:26	29-Jul-09	44.0
1975	51.5	28.7	65	0.3116	15:20:26	29-Jul-09	44.3
1976	45.5	28.7	65	0.2834	15:21:26	29-Jul-09	44.3
1977	46	28.6	65	0.2791	15:22:26	29-Jul-09	44.2
1978	48.3	28.7	65	0.2897	15:23:26	29-Jul-09	44.5
1979	48.5	28.7	65	0.2852	15:24:26	29-Jul-09	44.8
1980	47.6	28.6	65	0.2901	15:25:26	29-Jul-09	45.0
1981	46.8	28.6	66	0.2763	15:26:26	29-Jul-09	45.2
1982	49.3	28.6	66	0.2894	15:27:26	29-Jul-09	45.6
1983	46.5	28.5	66	0.2727	15:28:26	29-Jul-09	45.7
1984	47.1	28.5	66	0.2852	15:29:26	29-Jul-09	45.8
1985	49.3	28.5	66	0.2957	15:30:26	29-Jul-09	46.0
1986	49.5	28.5	66	0.2925	15:31:26	29-Jul-09	46.3
1987	46.2	28.5	66	0.2744	15:32:26	29-Jul-09	46.7
1988	44.9	28.5	66	0.2624	15:33:26	29-Jul-09	47.0
1989	48.5	28.5	66	0.2907	15:34:26	29-Jul-09	47.4
1990	46.3	28.5	66	0.2874	15:35:26	29-Jul-09	47.6
1991	43.5	28.5	66	0.2694	15:36:26	29-Jul-09	47.1
1992	42.6	28.4	66	0.2581	15:37:26	29-Jul-09	46.9

Appendix I
Ambient Air Dust Monitoring Results - SEAD-12 Removal Action

Seneca Army Depot Activity
Romulus, NY

DataRam 4 Dust Monitor, Serial Number D454

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
1	38.3	24.2	73	0.4039	6:56:28	30-Jul-09	
2	43.6	24.1	73	0.4619	6:57:28	30-Jul-09	
3	32.7	24.1	73	0.4232	6:58:28	30-Jul-09	
4	32.8	24.1	74	0.4187	6:59:28	30-Jul-09	
5	31.7	24.1	74	0.356	7:00:28	30-Jul-09	
6	32	24	74	0.3682	7:01:28	30-Jul-09	
7	30.5	24.1	74	0.3745	7:02:28	30-Jul-09	
8	29.4	24.1	74	0.3458	7:03:28	30-Jul-09	
9	29.5	24.1	75	0.3636	7:04:28	30-Jul-09	
10	31.5	24.1	75	0.3895	7:05:28	30-Jul-09	
11	29.3	24.1	75	0.3817	7:06:28	30-Jul-09	
12	28.5	24.1	75	0.328	7:07:28	30-Jul-09	
13	28.7	24.1	75	0.3163	7:08:28	30-Jul-09	
14	28.3	24.1	75	0.3369	7:09:28	30-Jul-09	
15	30.5	24.1	75	0.3527	7:10:28	30-Jul-09	
16	30.5	24.1	75	0.3695	7:11:28	30-Jul-09	31.7
17	31.3	24.1	75	0.4027	7:12:28	30-Jul-09	31.3
18	34.6	24.2	75	0.3821	7:13:28	30-Jul-09	30.7
19	30.2	24.2	75	0.3461	7:14:28	30-Jul-09	30.6
20	27.8	24.2	75	0.3684	7:15:28	30-Jul-09	30.3
21	33.7	24.2	75	0.3576	7:16:28	30-Jul-09	30.4
22	28.4	24.2	74	0.3255	7:17:28	30-Jul-09	30.2
23	25.8	24.3	74	0.3547	7:18:28	30-Jul-09	29.9
24	27.4	24.3	74	0.3462	7:19:28	30-Jul-09	29.8
25	26.4	24.3	74	0.3571	7:20:28	30-Jul-09	29.6
26	26.3	24.4	74	0.3386	7:21:28	30-Jul-09	29.2
27	25.1	24.4	74	0.3602	7:22:28	30-Jul-09	29.0
28	27.3	24.5	74	0.3623	7:23:28	30-Jul-09	28.9
29	31.7	24.5	74	0.3489	7:24:28	30-Jul-09	29.1
30	29.1	24.5	74	0.3586	7:25:28	30-Jul-09	29.1
31	25.8	24.6	74	0.3347	7:26:28	30-Jul-09	28.8
32	24.8	24.6	74	0.3169	7:27:28	30-Jul-09	28.5
33	25.7	24.6	74	0.333	7:28:28	30-Jul-09	28.1
34	25.7	24.6	74	0.3506	7:29:28	30-Jul-09	27.6
35	23.7	24.7	74	0.3486	7:30:28	30-Jul-09	27.2
36	24.3	24.7	74	0.3226	7:31:28	30-Jul-09	27.0
37	25.1	24.8	74	0.3461	7:32:28	30-Jul-09	26.4
38	25.2	24.8	74	0.3782	7:33:28	30-Jul-09	26.2
39	25.3	24.9	74	0.3759	7:34:28	30-Jul-09	26.2
40	25.1	24.9	74	0.3453	7:35:28	30-Jul-09	26.0
41	27.3	24.9	74	0.3369	7:36:28	30-Jul-09	26.1
42	28.8	25	73	0.3504	7:37:28	30-Jul-09	26.3
43	42.1	25	73	0.4001	7:38:28	30-Jul-09	27.3

DataRam 4 Dust Monitor, Serial Number D464

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
1993	41.3	28.4	66	0.2642	15:38:26	29-Jul-09	46.6
1994	42.4	28.4	66	0.2668	15:39:26	29-Jul-09	46.3
1995	42	28.4	66	0.2739	15:40:26	29-Jul-09	45.9
1996	43.1	28.4	66	0.2738	15:41:26	29-Jul-09	45.6
1997	40	28.4	66	0.2582	15:42:26	29-Jul-09	45.2
1998	40.6	28.4	67	0.2625	15:43:26	29-Jul-09	44.6
1999	39.6	28.4	67	0.2664	15:44:26	29-Jul-09	44.2
2000	39.8	28.4	66	0.264	15:45:26	29-Jul-09	43.7
2001	37.7	28.4	67	0.2518	15:46:26	29-Jul-09	43.0
2002	39	28.3	66	0.2688	15:47:26	29-Jul-09	42.3
2003	37.2	28.4	66	0.266	15:48:26	29-Jul-09	41.8
2004	35.3	28.4	66	0.2535	15:49:26	29-Jul-09	41.2
2005	36.5	28.3	66	0.2519	15:50:26	29-Jul-09	40.4
2006	34.4	28.3	66	0.2475	15:51:26	29-Jul-09	39.7
2007	32.2	28.3	66	0.2446	15:52:26	29-Jul-09	39.0
2008	32.8	28.3	66	0.2503	15:53:26	29-Jul-09	38.4
2009	33.8	28.4	66	0.2481	15:54:26	29-Jul-09	37.9
2010	34.3	28.4	66	0.2465	15:55:26	29-Jul-09	37.4
2011	35.5	28.3	66	0.2606	15:56:26	29-Jul-09	37.0
2012	36.2	28.3	66	0.2624	15:57:26	29-Jul-09	36.6
2013	33.3	28.4	66	0.2659	15:58:26	29-Jul-09	36.1
2014	33.2	28.4	66	0.2577	15:59:26	29-Jul-09	35.7
2015	33.2	28.4	66	0.2637	16:00:26	29-Jul-09	35.3
2016	33.9	28.4	66	0.2636	16:01:26	29-Jul-09	34.9
2017	32.2	28.4	66	0.2521	16:02:26	29-Jul-09	34.6
2018	29.8	28.4	66	0.2475	16:03:26	29-Jul-09	34.0
2019	30.5	28.4	66	0.2571	16:04:26	29-Jul-09	33.6
2020	29.4	28.5	66	0.2473	16:05:26	29-Jul-09	33.2
2021	26	28.5	66	0.2293	16:06:26	29-Jul-09	32.5
2022	23.2	28.5	66	0.2198	16:07:26	29-Jul-09	31.8
2023	23	28.5	66	0.2252	16:08:26	29-Jul-09	31.3
2024	21.8	28.5	65	0.2235	16:09:26	29-Jul-09	30.6
2025	21.3	28.5	65	0.2271	16:10:26	29-Jul-09	29.8
2026	20.7	28.5	65	0.2095	16:11:26	29-Jul-09	29.0
2027	20.7	28.6	65	0.2288	16:12:26	29-Jul-09	28.0
2028	21.4	28.5	65	0.2308	16:13:26	29-Jul-09	27.1
2029	21	28.6	64	0.2237	16:14:26	29-Jul-09	26.3
2030	21.4	28.6	64	0.2255	16:15:26	29-Jul-09	25.6
2031	20.6	28.6	64	0.222	16:16:26	29-Jul-09	24.8
2032	21.3	28.6	64	0.2279	16:17:26	29-Jul-09	24.0
2033	20.1	28.6	63	0.2178	16:18:26	29-Jul-09	23.3
2034	21.3	28.6	63	0.2277	16:19:26	29-Jul-09	22.7
2035	21.1	28.6	63	0.2306	16:20:26	29-Jul-09	22.1
2036	21.5	28.6	63	0.2205	16:21:26	29-Jul-09	21.7
2037	20.7	28.6	63	0.2229	16:22:26	29-Jul-09	21.3
2038	21.1	28.7	63	0.2083	16:23:26	29-Jul-09	21.2
2039	21.6	28.7	63	0.2258	16:24:26	29-Jul-09	21.1
2040	21.9	28.7	63	0.2205	16:25:26	29-Jul-09	21.1
2041	22.6	28.7	63	0.233	16:26:26	29-Jul-09	21.2
2042	22.6	28.7	63	0.2402	16:27:26	29-Jul-09	21.3
2043	21.5	28.7	63	0.2138	16:28:26	29-Jul-09	21.4
1	12.3	22.6	63	0.3517	6:53:25	30-Jul-09	
2	15	22.6	63	0.4368	6:54:25	30-Jul-09	
3	16.2	22.6	64	0.4422	6:55:25	30-Jul-09	
4	15.5	22.5	65	0.4515	6:56:25	30-Jul-09	
5	15	22.5	65	0.3909	6:57:25	30-Jul-09	
6	16.4	22.5	66	0.4189	6:58:25	30-Jul-09	
7	16.3	22.5	66	0.5349	6:59:25	30-Jul-09	
8	15.3	22.5	66	0.442	7:00:25	30-Jul-09	
9	15.3	22.5	66	0.4147	7:01:25	30-Jul-09	
10	14.4	22.5	67	0.4255	7:02:25	30-Jul-09	
11	15	22.5	67	0.4256	7:03:25	30-Jul-09	
12	15.4	22.5	67	0.3867	7:04:25	30-Jul-09	
13	16.6	22.5	67	0.4469	7:05:25	30-Jul-09	
14	16.1	22.5	67	0.4702	7:06:25	30-Jul-09	
15	15	22.5	67	0.4104	7:07:25	30-Jul-09	
16	15.8	22.5	68	0.4066	7:08:25	30-Jul-09	15.4
17	17.4	22.5	68	0.4527	7:09:25	30-Jul-09	15.7
18	15.4	22.5	68	0.4327	7:10:25	30-Jul-09	15.7
19	15.9	22.5	68	0.461	7:11:25	30-Jul-09	15.7
20	14.8	22.5	68	0.3955	7:12:25	30-Jul-09	15.6
21	16.7	22.5	68	0.4651	7:13:25	30-Jul-09	15.7
22	15.7	22.5	68	0.4322	7:14:25	30-Jul-09	15.7
23	14.3	22.5	68	0.3953	7:15:25	30-Jul-09	15.6
24	13.8	22.5	68	0.356	7:16:25	30-Jul-09	15.5
25	14	22.5	68	0.3786	7:17:25	30-Jul-09	15.4
26	13.5	22.5	68	0.3689	7:18:25	30-Jul-09	15.3
27	14.6	22.5	68	0.4512	7:19:25	30-Jul-09	15.3
28	14.5	22.5	68	0.4099	7:20:25	30-Jul-09	15.3
29	14.1	22.5	68	0.3941	7:21:25	30-Jul-09	15.1
30	15.1	22.5	69	0.4042	7:22:25	30-Jul-09	15.0
31	13.2	22.5	69	0.3587	7:23:25	30-Jul-09	14.9
32	13.8	22.5	69	0.3765	7:24:25	30-Jul-09	14.8
33	14.2	22.6	69	0.3808	7:25:25	30-Jul-09	14.6
34	13.7	22.6	69	0.3577	7:26:25	30-Jul-09	14.5
35	14.2	22.6	69	0.3615	7:27:25	30-Jul-09	14.4
36	14.1	22.6	69	0.3829	7:28:25	30-Jul-09	14.3
37	13.6	22.6	69	0.3872	7:29:25	30-Jul-09	14.2
38	14	22.6	69	0.4024	7:30:25	30-Jul-09	14.0
39	15.1	22.7	69	0.4068	7:31:25	30-Jul-09	14.1
40	32.3	22.7	69	0.6749	7:32:25	30-Jul-09	15.3
41	22.8	22.7	68	0.8269	7:33:25	30-Jul-09	15.8
42	14.4	22.7	68	0.4342	7:34:25	30-Jul-09	15.9
43	13.4	22.7	68	0.4225	7:35:25	30-Jul-09	15.8
44	13.2	22.7	68	0.3811	7:36:25	30-Jul-09	15.7
45	13.8	22.8	68	0.408	7:37:25	30-Jul-09	15.7
46	13.3	22.8	68	0.395	7:38:25	30-Jul-09	15.6

Appendix I
Ambient Air Dust Monitoring Results - SEAD-12 Removal Action

Seneca Army Depot Activity
Romulus, NY

DataRam 4 Dust Monitor, Serial Number D454

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
44	41.6	25.1	73	0.3916	7:39:28	30-Jul-09	28.2
45	36.7	25.1	73	0.3904	7:40:28	30-Jul-09	28.5
46	34.3	25.2	73	0.3432	7:41:28	30-Jul-09	28.8
47	40.7	25.2	73	0.3879	7:42:28	30-Jul-09	29.8
48	30.6	25.2	72	0.3753	7:43:28	30-Jul-09	30.1
49	27.3	25.3	72	0.3274	7:44:28	30-Jul-09	30.2
50	25.9	25.3	72	0.2962	7:45:28	30-Jul-09	30.3
51	26.6	25.4	72	0.3472	7:46:28	30-Jul-09	30.4
52	26.1	25.4	71	0.3396	7:47:28	30-Jul-09	30.5
53	23.6	25.5	71	0.3316	7:48:28	30-Jul-09	30.5
54	24.9	25.5	71	0.3788	7:49:28	30-Jul-09	30.4
55	24.3	25.6	71	0.3279	7:50:28	30-Jul-09	30.4
56	25.5	25.6	71	0.3311	7:51:28	30-Jul-09	30.4
57	26.2	25.6	71	0.336	7:52:28	30-Jul-09	30.3
58	30	25.7	70	0.3242	7:53:28	30-Jul-09	30.4
59	28.2	25.7	70	0.3291	7:54:28	30-Jul-09	29.5
60	26.6	25.7	70	0.3332	7:55:28	30-Jul-09	28.6
61	27.3	25.7	70	0.3479	7:56:28	30-Jul-09	28.0
62	30.4	25.8	70	0.3455	7:57:28	30-Jul-09	27.8
63	39.3	25.8	70	0.3482	7:58:28	30-Jul-09	27.7
64	35.3	25.9	70	0.3353	7:59:28	30-Jul-09	28.0
65	25.9	25.9	70	0.3401	8:00:28	30-Jul-09	27.9
66	24.3	25.9	70	0.2988	8:01:28	30-Jul-09	27.8
67	25.8	25.9	70	0.3049	8:02:28	30-Jul-09	27.7
68	29	26	70	0.3215	8:03:28	30-Jul-09	27.9
69	29.3	26	70	0.3145	8:04:28	30-Jul-09	28.3
70	24.3	26	69	0.2868	8:05:28	30-Jul-09	28.2
71	22.4	26	69	0.3162	8:06:28	30-Jul-09	28.1
72	22.2	26.1	69	0.3257	8:07:28	30-Jul-09	27.9
73	20.2	26.1	69	0.3113	8:08:28	30-Jul-09	27.5
74	23.3	26.1	68	0.3769	8:09:28	30-Jul-09	27.1
75	22.3	26.1	68	0.3179	8:10:28	30-Jul-09	26.7
76	21.7	26.1	68	0.3151	8:11:28	30-Jul-09	26.4
77	21.7	26.2	68	0.3095	8:12:28	30-Jul-09	26.1
78	18.9	26.2	67	0.2966	8:13:28	30-Jul-09	25.4
79	17.3	26.2	67	0.2823	8:14:28	30-Jul-09	24.0
80	18.5	26.2	67	0.2759	8:15:28	30-Jul-09	22.9
81	18.5	26.2	67	0.285	8:16:28	30-Jul-09	22.5
82	18.1	26.2	67	0.2868	8:17:28	30-Jul-09	22.1
83	18.3	26.2	67	0.3045	8:18:28	30-Jul-09	21.6
84	18.8	26.2	67	0.2789	8:19:28	30-Jul-09	21.0
85	21.7	26.2	66	0.3311	8:20:28	30-Jul-09	20.5
86	32.8	26.2	66	0.3585	8:21:28	30-Jul-09	21.0
87	21.1	26.2	66	0.2928	8:22:28	30-Jul-09	21.0
88	37	26.2	66	0.3686	8:23:28	30-Jul-09	21.9
89	32.2	26.2	66	0.3548	8:24:28	30-Jul-09	22.6
90	18.3	26.2	66	0.3037	8:25:28	30-Jul-09	22.3
91	27.7	26.3	66	0.326	8:26:28	30-Jul-09	22.7
92	21.1	26.3	66	0.3155	8:27:28	30-Jul-09	22.6
93	20.2	26.3	66	0.3202	8:28:28	30-Jul-09	22.5
94	21.5	26.3	66	0.3671	8:29:28	30-Jul-09	22.7
95	17.9	26.3	65	0.283	8:30:28	30-Jul-09	22.7
96	17.3	26.3	65	0.2929	8:31:28	30-Jul-09	22.7
97	18.7	26.4	65	0.3238	8:32:28	30-Jul-09	22.7
98	17	26.4	65	0.338	8:33:28	30-Jul-09	22.6
99	28.2	26.4	65	0.3252	8:34:28	30-Jul-09	23.2
100	22.7	26.4	65	0.3127	8:35:28	30-Jul-09	23.5
101	13.3	26.4	65	0.2826	8:36:28	30-Jul-09	22.9
102	14.1	26.5	65	0.2722	8:37:28	30-Jul-09	21.8
103	13.7	26.5	64	0.3136	8:38:28	30-Jul-09	21.3
104	18.8	26.5	64	0.3313	8:39:28	30-Jul-09	20.2
105	15.5	26.6	64	0.3099	8:40:28	30-Jul-09	19.1
106	14.2	26.6	64	0.2798	8:41:28	30-Jul-09	18.9
107	13.6	26.6	64	0.3041	8:42:28	30-Jul-09	18.0
108	17	26.6	64	0.2838	8:43:28	30-Jul-09	17.7
109	14.5	26.6	64	0.3069	8:44:28	30-Jul-09	17.4
110	13.2	26.6	63	0.3305	8:45:28	30-Jul-09	16.9
111	11.9	26.7	63	0.3069	8:46:28	30-Jul-09	16.5
112	16	26.7	63	0.2902	8:47:28	30-Jul-09	16.4
113	15.9	26.7	63	0.3482	8:48:28	30-Jul-09	16.2
114	19.3	26.8	62	0.3389	8:49:28	30-Jul-09	16.4
115	12.5	26.8	62	0.3962	8:50:28	30-Jul-09	15.4
116	11.5	26.9	62	0.2953	8:51:28	30-Jul-09	14.7
117	11.6	26.9	61	0.2667	8:52:28	30-Jul-09	14.6
118	11	26.9	61	0.2949	8:53:28	30-Jul-09	14.4
119	10.9	27	61	0.2918	8:54:28	30-Jul-09	14.2
120	10.7	27	61	0.2676	8:55:28	30-Jul-09	13.7
121	10.5	27	60	0.2928	8:56:28	30-Jul-09	13.4
122	10.8	27.1	60	0.3204	8:57:28	30-Jul-09	13.2
123	11.5	27.1	60	0.2619	8:58:28	30-Jul-09	13.1
124	18.1	27.1	60	0.3184	8:59:28	30-Jul-09	13.1
125	12	27.1	60	0.29	9:00:28	30-Jul-09	13.0
126	10.4	27.2	60	0.2722	9:01:28	30-Jul-09	12.8
127	10.7	27.2	60	0.3084	9:02:28	30-Jul-09	12.7
128	10.1	27.2	60	0.2917	9:03:28	30-Jul-09	12.3
129	22.1	27.2	59	0.2716	9:04:28	30-Jul-09	12.7
130	14.9	27.3	59	0.3394	9:05:28	30-Jul-09	12.5
131	17.5	27.3	59	0.3211	9:06:28	30-Jul-09	12.8
132	9.7	27.4	59	0.3155	9:07:28	30-Jul-09	12.7
133	9.6	27.4	58	0.2775	9:08:28	30-Jul-09	12.5
134	10.5	27.4	58	0.2765	9:09:28	30-Jul-09	12.5
135	10.1	27.5	58	0.2912	9:10:28	30-Jul-09	12.5
136	11.4	27.5	59	0.3075	9:11:28	30-Jul-09	12.5
137	12.1	27.5	59	0.3186	9:12:28	30-Jul-09	12.6
138	13.8	27.5	59	0.3486	9:13:28	30-Jul-09	12.8
139	14	27.6	59	0.3548	9:14:28	30-Jul-09	12.9
140	15.9	27.6	59	0.3642	9:15:28	30-Jul-09	12.8
141	17.4	27.6	59	0.3767	9:16:28	30-Jul-09	13.1
142	11.9	27.6	58	0.3121	9:17:28	30-Jul-09	13.2
143	10.6	27.6	58	0.3304	9:18:28	30-Jul-09	13.2

DataRam 4 Dust Monitor, Serial Number D464

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
47	13.4	22.8	68	0.4056	7:39:25	30-Jul-09	15.6
48	13.4	22.9	68	0.4059	7:40:25	30-Jul-09	15.6
49	12.3	22.9	68	0.4176	7:41:25	30-Jul-09	15.4
50	14	23	68	0.4165	7:42:25	30-Jul-09	15.5
51	13.1	23	69	0.4043	7:43:25	30-Jul-09	15.4
52	14	23	68	0.4059	7:44:25	30-Jul-09	15.4
53	14.6	23	68	0.4042	7:45:25	30-Jul-09	15.4
54	13.9	23.1	68	0.4161	7:46:25	30-Jul-09	15.4
55	15	23.1	68	0.4162	7:47:25	30-Jul-09	15.4
56	14.1	23.1	68	0.4141	7:48:25	30-Jul-09	14.3
57	13.9	23.2	68	0.4251	7:49:25	30-Jul-09	13.7
58	14.7	23.2	68	0.4348	7:50:25	30-Jul-09	13.8
59	15.3	23.2	68	0.4176	7:51:25	30-Jul-09	13.9
60	14.8	23.3	67	0.4343	7:52:25	30-Jul-09	14.0
61	15	23.3	68	0.4341	7:53:25	30-Jul-09	14.1
62	16.1	23.4	68	0.3976	7:54:25	30-Jul-09	14.2
63	15.2	23.4	67	0.4055	7:55:25	30-Jul-09	14.3
64	15.2	23.5	68	0.4445	7:56:25	30-Jul-09	14.5
65	14.8	23.5	67	0.4225	7:57:25	30-Jul-09	14.6
66	14.8	23.5	67	0.393	7:58:25	30-Jul-09	14.7
67	15.2	23.6	67	0.4467	7:59:25	30-Jul-09	14.8
68	15	23.6	67	0.4474	8:00:25	30-Jul-09	14.9
69	14.7	23.6	67	0.3956	8:01:25	30-Jul-09	14.9
70	14.6	23.7	67	0.4555	8:02:25	30-Jul-09	14.9
71	14.3	23.7	67	0.4532	8:03:25	30-Jul-09	14.9
72	14.5	23.7	67	0.4115	8:04:25	30-Jul-09	14.9
73	11.2	23.7	67	0.4121	8:05:25	30-Jul-09	14.7
74	11.1	23.8	66	0.3982	8:06:25	30-Jul-09	14.5
75	11.6	23.8	66	0.358	8:07:25	30-Jul-09	14.3
76	10.5	23.8	66	0.3452	8:08:25	30-Jul-09	14.0
77	11.2	23.9	66	0.3592	8:09:25	30-Jul-09	13.8
78	10.3	23.9	65	0.3819	8:10:25	30-Jul-09	13.4
79	11.4	23.9	65	0.4144	8:11:25	30-Jul-09	13.2
80	10.6	23.9	65	0.3808	8:12:25	30-Jul-09	12.9
81	10.1	24	64	0.4505	8:13:25	30-Jul-09	12.6
82	10.5	24	64	0.4239	8:14:25	30-Jul-09	12.3
83	9.5	24	64	0.361	8:15:25	30-Jul-09	11.9
84	11	24	64	0.4103	8:16:25	30-Jul-09	11.7
85	9.7	24	64	0.3946	8:17:25	30-Jul-09	11.4
86	10.4	24	64	0.4085	8:18:25	30-Jul-09	11.1
87	10.1	24	64	0.3526	8:19:25	30-Jul-09	10.9
88	10.5	24.1	64	0.3613	8:20:25	30-Jul-09	10.6
89	9.9	24.1	63	0.3509	8:21:25	30-Jul-09	10.5
90	11	24.1	63	0.4364	8:22:25	30-Jul-09	10.5
91	9.5	24.1	64	0.342	8:23:25	30-Jul-09	10.4
92	9.4	24.1	63	0.3635	8:24:25	30-Jul-09	10.3
93	9.7	24.1	63	0.3568	8:25:25	30-Jul-09	10.2
94	8.8	24.1	63	0.3487	8:26:25	30-Jul-09	10.1
95	8.6	24.1	63	0.3137	8:27:25	30-Jul-09	10.0
96	8.9	24.2	63	0.3366	8:28:25	30-Jul-09	9.9
97	9.5	24.2	63	0.3895	8:29:25	30-Jul-09	9.8
98	9.7	24.2	63	0.4033	8:30:25	30-Jul-09	9.8
99	8.7	24.2	63	0.4003	8:31:25	30-Jul-09	9.7
100	8.8	24.2	62	0.4597	8:32:25	30-Jul-09	9.6
101	8.2	24.2	62	0.355	8:33:25	30-Jul-09	9.5
102	8	24.2	62	0.3688	8:34:25	30-Jul-09	9.3
103	6.4	24.3	62	0.3292	8:35:25	30-Jul-09	9.1
104	6.3	24.3	62	0.348	8:36:25	30-Jul-09	8.8
105	7.3	24.4	62	0.354	8:37:25	30-Jul-09	8.7
106	6	24.4	62	0.3216	8:38:25	30-Jul-09	8.4
107	6.4	24.4	61	0.3517	8:39:25	30-Jul-09	8.2
108	6.6	24.4	61	0.3643	8:40:25	30-Jul-09	8.0
109	6.4	24.5	61	0.3423	8:41:25	30-Jul-09	7.8
110	6.8	24.5	61	0.3207	8:42:25	30-Jul-09	7.7
111	6.5	24.5	60	0.3375	8:43:25	30-Jul-09	7.5
112	5.9	24.5	60	0.3706	8:44:25	30-Jul-09	7.3
113	6.1	24.6	60	0.3781	8:45:25	30-Jul-09	7.1
114	6.2	24.6	60	0.3396	8:46:25	30-Jul-09	6.9
115	5.9	24.6	60	0.3694	8:47:25	30-Jul-09	6.7
116	6	24.7	59	0.4131	8:48:25	30-Jul-09	6.6
117	5.3	24.7	59	0.3199	8:49:25	30-Jul-09	6.4
118	5.3	24.7	59	0.313	8:50:25	30-Jul-09	6.2
119	5	24.8	59	0.3232	8:51:25	30-Jul-09	6.1
120	4.7	24.8	59	0.3133	8:52:25	30-Jul-09	6.0
121	4.5	24.9	58	0.3146	8:53:25	30-Jul-09	5.9
122	4.4	24.9	58	0.297	8:54:25	30-Jul-09	5.8
123	5.2	24.9	58	0.377	8:55:25	30-Jul-09	5.7
124	4.7	25	58	0.3622	8:56:25	30-Jul-09	5.6
125	5.1	25	58	0.3453	8:57:25	30-Jul-09	5.5
126	5.8	25	57	0.3907	8:58:25	30-Jul-09	5.4
127	5.1	25.1	58	0.3449	8:59:25	30-Jul-09	5.3
128	5.1	25.1	58	0.3385	9:00:25	30-Jul-09	5.3
129	4.4	25.1	58	0.3783	9:01:25	30-Jul-09	5.2
130	4.1	25.2	57	0.364	9:02:25	30-Jul-09	5.0
131	4	25.2	57	0.3569	9:03:25	30-Jul-09	4.9
132	3.8	25.2	56	0.3392	9:04:25	30-Jul-09	4.8
133	4	25.3	57	0.3187	9:05:25	30-Jul-09	4.7
134	4.4	25.4	56	0.3051	9:06:25	30-Jul-09	4.6
135	4	25.4	56	0.32	9:07:25	30-Jul-09	4.6
136	3.8	25.4	56	0.3311	9:08:25	30-Jul-09	4.5
137	5.5	25.5	56	0.3551	9:09:25	30-Jul-09	4.6
138	4.4	25.5	56	0.3073	9:10:25	30-Jul-09	4.6
139	4.7	25.5	56	0.307	9:11:25	30-Jul-09	4.6
140	4.4	25.6	56	0.3009	9:12:25	30-Jul-09	4.5
141	3.8	25.6	56	0.3099	9:13:25	30-Jul-09	4.5
142	3.9	25.6	56	0.331	9:14:25	30-Jul-09	4.3
143	4.5	25.6	55	0.3248	9:15:25	30-Jul-09	4.3
144	4.2	25.6	55	0.3124	9:16:25	30-Jul-09	4.2
145	3.8	25.7	55	0.2937	9:17:25	30-Jul-09	4.2
146	4.5	25.7	55	0.3238	9:18:25	30-Jul-09	4.2

Appendix I
Ambient Air Dust Monitoring Results - SEAD-12 Removal Action

Seneca Army Depot Activity
Romulus, NY

DataRam 4 Dust Monitor, Serial Number D454

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
144	10.3	27.6	58	0.2872	9:19:28	30-Jul-09	13.2
145	10.6	27.7	58	0.29	9:20:28	30-Jul-09	12.5
146	10.3	27.7	58	0.2891	9:21:28	30-Jul-09	12.2
147	10.1	27.7	57	0.315	9:22:28	30-Jul-09	11.8
148	12.6	27.7	57	0.269	9:23:28	30-Jul-09	12.0
149	14.5	27.7	57	0.31	9:24:28	30-Jul-09	12.3
150	10.4	27.8	57	0.3544	9:25:28	30-Jul-09	12.3
151	10.3	27.8	57	0.3335	9:26:28	30-Jul-09	12.3
152	10.4	27.8	57	0.3064	9:27:28	30-Jul-09	12.2
153	11.5	27.8	57	0.2886	9:28:28	30-Jul-09	12.2
154	11.1	27.9	57	0.2729	9:29:28	30-Jul-09	12.0
155	28.5	27.9	57	0.3867	9:30:28	30-Jul-09	12.9
156	13.7	28	57	0.2858	9:31:28	30-Jul-09	12.8
157	13.6	28	57	0.3417	9:32:28	30-Jul-09	12.5
158	21	28	57	0.3376	9:33:28	30-Jul-09	13.1
159	27.4	28.1	57	0.3073	9:34:28	30-Jul-09	14.1
160	22.1	28.1	57	0.2954	9:35:28	30-Jul-09	14.9
161	13	28.2	57	0.2843	9:36:28	30-Jul-09	15.0
162	15.8	28.2	56	0.2573	9:37:28	30-Jul-09	15.4
163	12.1	28.3	56	0.3208	9:38:28	30-Jul-09	15.5
164	9.6	29	56	0.2618	9:39:28	30-Jul-09	15.3
165	9.3	28.8	56	0.3036	9:40:28	30-Jul-09	15.0
166	9.2	28.4	56	0.2919	9:41:28	30-Jul-09	14.9
167	13.5	28.5	55	0.2706	9:42:28	30-Jul-09	15.1
168	15.3	28.5	55	0.3021	9:43:28	30-Jul-09	15.4
169	16.1	28.5	55	0.3191	9:44:28	30-Jul-09	15.7
170	9.6	28.6	55	0.3041	9:45:28	30-Jul-09	15.6
171	14.1	28.6	55	0.3295	9:46:28	30-Jul-09	14.7
172	11.6	28.7	54	0.3099	9:47:28	30-Jul-09	14.6
173	9.4	28.7	54	0.3165	9:48:28	30-Jul-09	14.3
174	16.4	28.8	54	0.2624	9:49:28	30-Jul-09	14.0
175	33.4	28.8	54	0.4007	9:50:28	30-Jul-09	14.4
176	15.8	28.9	54	0.3423	9:51:28	30-Jul-09	14.0
177	37.9	29.3	54	0.4601	9:52:28	30-Jul-09	15.6
178	9.3	32	56	0.3346	9:53:28	30-Jul-09	15.2
179	9.2	34.7	58	0.2756	9:54:28	30-Jul-09	15.0
180	12.9	35	58	0.3213	9:55:28	30-Jul-09	15.2
181	8.5	35.1	58	0.3244	9:56:28	30-Jul-09	15.1
182	8.2	34.8	57	0.2614	9:57:28	30-Jul-09	15.1
183	8.9	35.2	57	0.2925	9:58:28	30-Jul-09	14.8
184	14.7	35.2	57	0.2858	9:59:28	30-Jul-09	14.8
185	14.2	35.3	57	0.3149	10:00:28	30-Jul-09	14.6
186	16.9	35.3	57	0.4617	10:01:28	30-Jul-09	15.1
187	13.6	35.4	56	0.3434	10:02:28	30-Jul-09	15.1
188	10.1	35.5	56	0.3004	10:03:28	30-Jul-09	15.0
189	8.8	35.6	56	0.3206	10:04:28	30-Jul-09	14.9
190	8.2	35.6	56	0.2884	10:05:28	30-Jul-09	14.4
191	9	35.7	56	0.2775	10:06:28	30-Jul-09	12.9
192	8.4	35.7	56	0.2684	10:07:28	30-Jul-09	12.4
193	8.1	35.8	56	0.262	10:08:28	30-Jul-09	10.6
194	8.2	35.9	56	0.2907	10:09:28	30-Jul-09	10.5
195	8.4	36	55	0.2916	10:10:28	30-Jul-09	10.4
196	9.2	36	55	0.3324	10:11:28	30-Jul-09	10.2
197	9.7	36.1	55	0.3606	10:12:28	30-Jul-09	10.3
198	9.1	36.2	55	0.2843	10:13:28	30-Jul-09	10.3
199	7.3	36.2	55	0.2777	10:14:28	30-Jul-09	10.2
200	8.2	36.3	54	0.272	10:15:28	30-Jul-09	9.8
201	8	36.4	54	0.3126	10:16:28	30-Jul-09	9.5
202	7.9	36.5	54	0.2871	10:17:28	30-Jul-09	8.9
203	7.3	36.6	54	0.2727	10:18:28	30-Jul-09	8.5
204	7.5	36.6	53	0.2814	10:19:28	30-Jul-09	8.3
205	8.4	36.7	53	0.3132	10:20:28	30-Jul-09	8.3
206	8.1	36.7	53	0.3016	10:21:28	30-Jul-09	8.3
207	8.9	36.8	53	0.3301	10:22:28	30-Jul-09	8.3
208	7.4	36.9	52	0.2734	10:23:28	30-Jul-09	8.2
209	8.1	37	52	0.2757	10:24:28	30-Jul-09	8.2
210	7.9	37	52	0.3123	10:25:28	30-Jul-09	8.2
211	7.9	37.1	52	0.3188	10:26:28	30-Jul-09	8.2
212	7.6	37.1	51	0.3042	10:27:28	30-Jul-09	8.1
213	8.3	37.2	51	0.3564	10:28:28	30-Jul-09	8.0
214	7.8	37.3	51	0.2837	10:29:28	30-Jul-09	7.9
215	10.6	37.3	51	0.3507	10:30:28	30-Jul-09	8.1
216	9.4	37.4	51	0.3073	10:31:28	30-Jul-09	8.2
217	31.2	37.5	51	0.4327	10:32:28	30-Jul-09	9.6
218	14.1	37.6	51	0.3517	10:33:28	30-Jul-09	10.0
219	7.9	37.7	51	0.3287	10:34:28	30-Jul-09	10.1
220	12.4	37.7	50	0.3741	10:35:28	30-Jul-09	10.4
221	11.8	37.8	50	0.3036	10:36:28	30-Jul-09	10.6
222	7.6	37.9	50	0.294	10:37:28	30-Jul-09	10.6
223	8.1	38	49	0.3231	10:38:28	30-Jul-09	10.5
224	8.1	38	49	0.3201	10:39:28	30-Jul-09	10.6
225	7.1	38.1	49	0.2849	10:40:28	30-Jul-09	10.5
226	7	38.2	49	0.2894	10:41:28	30-Jul-09	10.4
227	8.7	38.2	49	0.3174	10:42:28	30-Jul-09	10.5
228	7.6	38.4	49	0.2918	10:43:28	30-Jul-09	10.5
229	14.9	38.5	49	0.2811	10:44:28	30-Jul-09	10.9
230	34.7	38.5	49	0.3962	10:45:28	30-Jul-09	12.6
231	153.6	38.6	49	0.7227	10:46:28	30-Jul-09	21.5
232	10.5	38.7	49	0.3656	10:47:28	30-Jul-09	21.6
233	13.1	38.8	49	0.3348	10:48:28	30-Jul-09	20.5
234	15	38.9	48	0.3123	10:49:28	30-Jul-09	20.5
235	17.6	39	48	0.3817	10:50:28	30-Jul-09	21.1
236	10.8	39.1	48	0.3075	10:51:28	30-Jul-09	21.0
237	7.4	39.2	48	0.2657	10:52:28	30-Jul-09	20.7
238	8.4	39.3	47	0.2935	10:53:28	30-Jul-09	20.8
239	29.1	39.4	47	0.3419	10:54:28	30-Jul-09	22.1
240	24.3	39.5	47	0.3598	10:55:28	30-Jul-09	23.1
241	24	39.6	47	0.412	10:56:28	30-Jul-09	24.2
242	9.7	39.7	47	0.2925	10:57:28	30-Jul-09	24.3
243	9.1	39.7	47	0.2525	10:58:28	30-Jul-09	24.4

DataRam 4 Dust Monitor, Serial Number D464

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
147	4.2	25.7	55	0.3241	9:19:25	30-Jul-09	4.2
148	4.5	25.7	55	0.3469	9:20:25	30-Jul-09	4.3
149	4.5	25.7	55	0.3378	9:21:25	30-Jul-09	4.3
150	4	25.8	55	0.3164	9:22:25	30-Jul-09	4.3
151	4.3	25.8	54	0.3186	9:23:25	30-Jul-09	4.3
152	4.1	25.8	54	0.3292	9:24:25	30-Jul-09	4.3
153	4.3	25.9	54	0.3422	9:25:25	30-Jul-09	4.3
154	4.4	25.9	54	0.3685	9:26:25	30-Jul-09	4.3
155	4.3	25.9	54	0.4104	9:27:25	30-Jul-09	4.2
156	3.9	26	54	0.365	9:28:25	30-Jul-09	4.2
157	4.3	26	54	0.3495	9:29:25	30-Jul-09	4.2
158	5.4	26	54	0.399	9:30:25	30-Jul-09	4.3
159	5.1	26.1	54	0.3494	9:31:25	30-Jul-09	4.4
160	4.2	26.1	54	0.3369	9:32:25	30-Jul-09	4.4
161	5.1	26.1	54	0.3917	9:33:25	30-Jul-09	4.4
162	4	26.2	53	0.336	9:34:25	30-Jul-09	4.4
163	3.6	26.2	53	0.3191	9:35:25	30-Jul-09	4.4
164	4.6	26.3	53	0.3249	9:36:25	30-Jul-09	4.4
165	4.5	26.3	53	0.3546	9:37:25	30-Jul-09	4.4
166	3.7	26.4	53	0.3563	9:38:25	30-Jul-09	4.4
167	4.1	26.4	52	0.3772	9:39:25	30-Jul-09	4.4
168	3.5	26.5	52	0.3494	9:40:25	30-Jul-09	4.3
169	3.3	26.5	52	0.3434	9:41:25	30-Jul-09	4.3
170	3.2	26.6	52	0.3447	9:42:25	30-Jul-09	4.2
171	3.8	26.6	51	0.3746	9:43:25	30-Jul-09	4.1
172	3.4	26.7	51	0.3518	9:44:25	30-Jul-09	4.1
173	3.6	26.7	51	0.3529	9:45:25	30-Jul-09	4.1
174	3	26.8	51	0.3519	9:46:25	30-Jul-09	3.9
175	4.7	26.8	51	0.3481	9:47:25	30-Jul-09	3.9
176	3.1	26.9	51	0.3539	9:48:25	30-Jul-09	3.8
177	3.7	27	51	0.3267	9:49:25	30-Jul-09	3.7
178	4	27	50	0.3435	9:50:25	30-Jul-09	3.7
179	3.3	27	50	0.3288	9:51:25	30-Jul-09	3.7
180	3.5	27.1	50	0.3279	9:52:25	30-Jul-09	3.7
181	3	27.2	50	0.3239	9:53:25	30-Jul-09	3.6
182	3.3	27.2	50	0.3207	9:54:25	30-Jul-09	3.5
183	3.1	27.2	50	0.3408	9:55:25	30-Jul-09	3.5
184	2.7	27.3	50	0.3585	9:56:25	30-Jul-09	3.4
185	3.7	27.4	49	0.362	9:57:25	30-Jul-09	3.4
186	3.6	27.4	49	0.3875	9:58:25	30-Jul-09	3.5
187	3.1	27.5	49	0.369	9:59:25	30-Jul-09	3.4
188	3.4	27.5	49	0.3965	10:00:25	30-Jul-09	3.4
189	3.2	27.6	49	0.4115	10:01:25	30-Jul-09	3.4
190	3.9	27.6	48	0.3972	10:02:25	30-Jul-09	3.5
191	3.8	27.6	48	0.3706	10:03:25	30-Jul-09	3.4
192	3.3	27.7	48	0.3697	10:04:25	30-Jul-09	3.4
193	3.5	27.7	49	0.3817	10:05:25	30-Jul-09	3.4
194	4.6	27.8	48	0.3664	10:06:25	30-Jul-09	3.4
195	3.4	27.8	48	0.3077	10:07:25	30-Jul-09	3.4
196	2.5	27.9	48	0.3116	10:08:25	30-Jul-09	3.4
197	3.4	27.9	48	0.3081	10:09:25	30-Jul-09	3.4
198	3.2	28	48	0.3039	10:10:25	30-Jul-09	3.4
199	3.2	28	48	0.3238	10:11:25	30-Jul-09	3.4
200	3.1	28.1	48	0.3348	10:12:25	30-Jul-09	3.4
201	2.9	28.1	47	0.3284	10:13:25	30-Jul-09	3.4
202	3.1	28.2	47	0.3098	10:14:25	30-Jul-09	3.4
203	2.2	28.3	47	0.3197	10:15:25	30-Jul-09	3.3
204	2.5	28.3	47	0.3257	10:16:25	30-Jul-09	3.2
205	2.9	28.4	47	0.337	10:17:25	30-Jul-09	3.2
206	2.7	28.4	46	0.3379	10:18:25	30-Jul-09	3.1
207	2.9	28.5	46	0.336	10:19:25	30-Jul-09	3.1
208	2.5	28.6	46	0.3351	10:20:25	30-Jul-09	3.0
209	2.5	28.6	46	0.3441	10:21:25	30-Jul-09	3.0
210	2.3	28.7	45	0.3442	10:22:25	30-Jul-09	2.8
211	2.9	28.7	45	0.3459	10:23:25	30-Jul-09	2.8
212	3.5	28.7	45	0.3596	10:24:25	30-Jul-09	2.9
213	3	28.8	45	0.4145	10:25:25	30-Jul-09	2.8
214	2.7	28.9	45	0.4223	10:26:25	30-Jul-09	2.8
215	3	29	45	0.4349	10:27:25	30-Jul-09	2.8
216	3.5	29	45	0.4227	10:28:25	30-Jul-09	2.8
217	2.7	29.1	45	0.3953	10:29:25	30-Jul-09	2.8
218	2.5	29.2	44	0.3882	10:30:25	30-Jul-09	2.8
219	2.8	29.2	44	0.3955	10:31:25	30-Jul-09	2.8
220	3.2	29.3	44	0.3821	10:32:25	30-Jul-09	2.9
221	2.4	29.3	44	0.3819	10:33:25	30-Jul-09	2.8
222	3.2	29.4	44	0.3951	10:34:25	30-Jul-09	2.9
223	2.9	29.4	44	0.3711	10:35:25	30-Jul-09	2.9
224	8.8	29.5	43	0.394	10:36:25	30-Jul-09	3.2
225	15.2	29.6	43	0.6977	10:37:25	30-Jul-09	4.0
226	4.4	29.6	43	0.4273	10:38:25	30-Jul-09	4.2
227	2.8	29.7	43	0.3667	10:39:25	30-Jul-09	4.2
228	3.6	29.8	43	0.382	10:40:25	30-Jul-09	4.2
229	3.3	29.9	43	0.4287	10:41:25	30-Jul-09	4.2
230	3.9	29.9	43	0.4525	10:42:25	30-Jul-09	4.3
231	3.8	30	43	0.3442	10:43:25	30-Jul-09	4.3
232	2.9	30.1	43	0.3651	10:44:25	30-Jul-09	4.3
233	3.2	30.1	43	0.3495	10:45:25	30-Jul-09	4.3
234	2.9	30.2	42	0.3503	10:46:25	30-Jul-09	4.3
235	2.7	30.2	42	0.3433	10:47:25	30-Jul-09	4.3
236	3	30.3	42	0.3436	10:48:25	30-Jul-09	4.3
237	2.4	30.4	42	0.3389	10:49:25	30-Jul-09	4.3
238	3.3	30.5	42	0.3316	10:50:25	30-Jul-09	4.3
239	2.4	30.6	42	0.331	10:51:25	30-Jul-09	4.3
240	2.3	30.6	42	0.3318	10:52:25	30-Jul-09	3.9
241	2.4	30.7	41	0.3314	10:53:25	30-Jul-09	3.1
242	2.4	30.7	41	0.3355	10:54:25	30-Jul-09	3.0
243	2.2	30.8	41	0.3361	10:55:25	30-Jul-09	2.9
244	2.5	30.9	41	0.3362	10:56:25	30-Jul-09	2.9
245	3	31	41	0.3488	10:57:25	30-Jul-09	2.8
246	2.1	31	40	0.3535	10:58:25	30-Jul-09	2.7

Appendix I
Ambient Air Dust Monitoring Results - SEAD-12 Removal Action

Seneca Army Depot Activity
Romulus, NY

DataRam 4 Dust Monitor, Serial Number D454

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
244	7.7	39.8	47	0.2701	10:59:28	30-Jul-09	24.4
245	7.8	39.9	46	0.3127	11:00:28	30-Jul-09	23.9
246	8.1	40	46	0.2932	11:01:28	30-Jul-09	22.3
247	17.2	40	46	0.3172	11:02:28	30-Jul-09	13.7
248	10.5	40.1	46	0.2934	11:03:28	30-Jul-09	13.7
249	38.5	40.1	46	0.4379	11:04:28	30-Jul-09	15.3
250	91.1	40.2	46	0.5257	11:05:28	30-Jul-09	20.1
251	7.5	40.3	45	0.2812	11:06:28	30-Jul-09	19.5
252	8.1	40.3	45	0.254	11:07:28	30-Jul-09	19.3
253	11.5	40.4	45	0.2875	11:08:28	30-Jul-09	19.5
254	14.5	40.5	45	0.3181	11:09:28	30-Jul-09	19.9
255	32.8	40.6	45	0.4345	11:10:28	30-Jul-09	20.2
256	13.8	40.6	45	0.3613	11:11:28	30-Jul-09	19.5
257	8.2	40.7	45	0.3483	11:12:28	30-Jul-09	18.5
258	29.4	40.8	45	0.2115	11:13:28	30-Jul-09	19.7
259	69.6	40.8	44	0.4913	11:14:28	30-Jul-09	23.5
260	33.8	41	45	0.3284	11:15:28	30-Jul-09	25.2
261	19.7	41.1	44	0.4093	11:16:28	30-Jul-09	25.9
262	7.9	41.1	44	0.2773	11:17:28	30-Jul-09	25.9
263	12.7	41.1	43	0.2873	11:18:28	30-Jul-09	25.6
264	11.8	41.2	43	0.3234	11:19:28	30-Jul-09	25.7
265	9.1	41.3	43	0.2518	11:20:28	30-Jul-09	23.8
266	9.4	41.3	43	0.2386	11:21:28	30-Jul-09	18.7
267	25	41.4	43	0.444	11:22:28	30-Jul-09	19.8
268	16.9	41.5	43	0.3292	11:23:28	30-Jul-09	20.4
269	47.9	41.6	42	0.4022	11:24:28	30-Jul-09	22.7
270	10.7	41.6	42	0.2903	11:25:28	30-Jul-09	22.4
271	11.7	41.7	42	0.2551	11:26:28	30-Jul-09	21.1
272	6.8	41.7	42	0.2801	11:27:28	30-Jul-09	20.7
273	10.4	41.8	41	0.2475	11:28:28	30-Jul-09	20.8
274	21.7	41.8	42	0.3981	11:29:28	30-Jul-09	20.3
275	25.6	41.8	41	0.4088	11:30:28	30-Jul-09	17.6
276	7.4	41.9	41	0.2804	11:31:28	30-Jul-09	15.9
277	6.7	41.9	41	0.2379	11:32:28	30-Jul-09	15.1
278	8.1	42	42	0.2218	11:33:28	30-Jul-09	15.1
279	8.7	42	42	0.2762	11:34:28	30-Jul-09	14.9
280	11.1	42	42	0.3883	11:35:28	30-Jul-09	14.8
281	6.6	42.1	41	0.2342	11:36:28	30-Jul-09	14.7
282	7.2	42.1	41	0.2184	11:37:28	30-Jul-09	14.5
283	10.2	42.1	41	0.2653	11:38:28	30-Jul-09	13.6
284	16	42.2	41	0.4047	11:39:28	30-Jul-09	13.6
285	12.5	42.3	41	0.3718	11:40:28	30-Jul-09	11.3
286	22.5	42.3	41	0.4135	11:41:28	30-Jul-09	12.1
287	110.2	42.4	41	0.348	11:42:28	30-Jul-09	18.2
288	54.5	42.4	40	0.6032	11:43:28	30-Jul-09	21.2
289	6.7	42.5	41	0.2706	11:44:28	30-Jul-09	21.0
290	14.4	42.5	40	0.2986	11:45:28	30-Jul-09	20.5
291	12.9	42.6	40	0.3004	11:46:28	30-Jul-09	19.7
292	30.9	42.6	40	0.4112	11:47:28	30-Jul-09	21.2
293	23.3	42.7	40	0.3567	11:48:28	30-Jul-09	22.2
294	17.6	42.7	40	0.3305	11:49:28	30-Jul-09	22.8
295	7.5	42.8	39	0.287	11:50:28	30-Jul-09	22.8
296	8	42.8	39	0.2535	11:51:28	30-Jul-09	22.6
297	19.8	42.8	39	0.2894	11:52:28	30-Jul-09	23.4
298	7.3	42.8	39	0.2508	11:53:28	30-Jul-09	23.4
299	20.7	42.8	39	0.2337	11:54:28	30-Jul-09	24.1
300	27.2	42.9	39	0.4603	11:55:28	30-Jul-09	24.8
301	36.4	42.9	39	0.3127	11:56:28	30-Jul-09	26.2
302	19.3	42.9	39	0.3729	11:57:28	30-Jul-09	26.0
303	25.5	43	39	0.4285	11:58:28	30-Jul-09	20.8
304	14.9	43	39	0.3655	11:59:28	30-Jul-09	18.3
305	10	43	39	0.2772	12:00:28	30-Jul-09	18.5
306	9.1	43	39	0.3039	12:01:28	30-Jul-09	18.2
307	8.7	43	38	0.2479	12:02:28	30-Jul-09	17.9
308	11	43.1	38	0.2842	12:03:28	30-Jul-09	16.6
309	21.8	43.1	38	0.3166	12:04:28	30-Jul-09	16.6
310	12.2	43.2	38	0.2975	12:05:28	30-Jul-09	16.2
311	25	43.2	38	0.3113	12:06:28	30-Jul-09	17.3
312	24.7	43.2	38	0.4538	12:07:28	30-Jul-09	18.4
313	14.9	43.3	38	0.3659	12:08:28	30-Jul-09	18.0
314	11	43.4	38	0.2728	12:09:28	30-Jul-09	18.3
315	14.1	43.4	39	0.322	12:10:28	30-Jul-09	17.9
316	7.6	43.5	39	0.2579	12:11:28	30-Jul-09	16.6
317	13.2	43.5	38	0.2535	12:12:28	30-Jul-09	15.2
318	15.7	43.5	38	0.327	12:13:28	30-Jul-09	15.0
319	71.7	43.6	38	0.3446	12:14:28	30-Jul-09	17.9
320	8.3	43.7	37	0.2872	12:15:28	30-Jul-09	17.4
321	7.2	43.7	37	0.2458	12:16:28	30-Jul-09	17.3
322	11.1	43.8	37	0.225	12:17:28	30-Jul-09	17.4
323	10.2	43.9	37	0.2277	12:18:28	30-Jul-09	17.5
324	7.7	43.8	37	0.2203	12:19:28	30-Jul-09	17.3
325	7.5	43.9	36	0.2431	12:20:28	30-Jul-09	16.4
326	8.2	43.9	36	0.2529	12:21:28	30-Jul-09	16.1
327	10.3	44	36	0.2344	12:22:28	30-Jul-09	15.2
328	21.2	44.1	36	0.3048	12:23:28	30-Jul-09	15.0
329	11.7	44.2	36	0.2323	12:24:28	30-Jul-09	14.8
330	8.1	44.2	36	0.2484	12:25:28	30-Jul-09	14.6
331	35.2	44.2	36	0.3124	12:26:28	30-Jul-09	15.9
332	125	44.3	36	0.4791	12:27:28	30-Jul-09	23.3
333	8.5	44.3	36	0.2801	12:28:28	30-Jul-09	23.0
334	28.8	44.3	36	0.3083	12:29:28	30-Jul-09	23.8
335	10.1	44.3	35	0.2987	12:30:28	30-Jul-09	19.9
336	18.2	44.4	36	0.3498	12:31:28	30-Jul-09	20.6
337	26.2	44.4	36	0.4178	12:32:28	30-Jul-09	21.8
338	17.8	44.4	36	0.3225	12:33:28	30-Jul-09	22.2
339	22.9	44.4	35	0.3213	12:34:28	30-Jul-09	23.0
340	12.8	44.4	35	0.2884	12:35:28	30-Jul-09	23.3
341	20.2	44.5	35	0.308	12:36:28	30-Jul-09	24.1
342	24.7	44.5	35	0.3112	12:37:28	30-Jul-09	25.1
343	8.9	43.2	34	0.2879	12:38:28	30-Jul-09	25.0

DataRam 4 Dust Monitor, Serial Number D464

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
247	2.9	31.1	40	0.3505	10:59:25	30-Jul-09	2.7
248	2.6	31.1	40	0.3341	11:00:25	30-Jul-09	2.6
249	2.7	31.2	40	0.3282	11:01:25	30-Jul-09	2.6
250	2.9	31.2	40	0.3211	11:02:25	30-Jul-09	2.6
251	2.6	31.2	40	0.3214	11:03:25	30-Jul-09	2.6
252	2.7	31.3	40	0.321	11:04:25	30-Jul-09	2.6
253	2.6	31.3	40	0.3144	11:05:25	30-Jul-09	2.6
254	2.6	31.4	40	0.3202	11:06:25	30-Jul-09	2.6
255	2.5	31.4	40	0.3366	11:07:25	30-Jul-09	2.6
256	3.6	31.5	40	0.3552	11:08:25	30-Jul-09	2.6
257	3	31.6	40	0.3531	11:09:25	30-Jul-09	2.7
258	2.4	31.6	39	0.341	11:10:25	30-Jul-09	2.7
259	3.3	31.7	39	0.3459	11:11:25	30-Jul-09	2.8
260	2.3	31.7	39	0.3504	11:12:25	30-Jul-09	2.7
261	2.4	31.8	39	0.3504	11:13:25	30-Jul-09	2.7
262	2.5	31.8	39	0.351	11:14:25	30-Jul-09	2.7
263	2.2	31.9	39	0.3498	11:15:25	30-Jul-09	2.7
264	2.8	32	38	0.3478	11:16:25	30-Jul-09	2.7
265	2.5	32	38	0.3754	11:17:25	30-Jul-09	2.7
266	2.7	32	38	0.3934	11:18:25	30-Jul-09	2.7
267	2.7	32.1	38	0.3729	11:19:25	30-Jul-09	2.7
268	2	32.1	38	0.3622	11:20:25	30-Jul-09	2.6
269	2.5	32.2	38	0.3605	11:21:25	30-Jul-09	2.6
270	2.4	32.2	38	0.3549	11:22:25	30-Jul-09	2.6
271	2.6	32.3	37	0.3655	11:23:25	30-Jul-09	2.6
272	1.8	32.3	37	0.3433	11:24:25	30-Jul-09	2.5
273	2.8	32.4	37	0.3427	11:25:25	30-Jul-09	2.5
274	2	32.5	37	0.3399	11:26:25	30-Jul-09	2.5
275	3	32.5	37	0.3663	11:27:25	30-Jul-09	2.5
276	2.7	32.5	37	0.3582	11:28:25	30-Jul-09	2.5
277	2.7	32.6	37	0.3532	11:29:25	30-Jul-09	2.5
278	2.4	32.6	36	0.3517	11:30:25	30-Jul-09	2.5
279	2.6	32.7	37	0.3333	11:31:25	30-Jul-09	2.5
280	2.3	32.7	37	0.326	11:32:25	30-Jul-09	2.5
281	3.3	32.7	37	0.3475	11:33:25	30-Jul-09	2.5
282	2.8	32.8	37	0.3559	11:34:25	30-Jul-09	2.5
283	3	32.8	37	0.3577	11:35:25	30-Jul-09	2.6
284	2.8	32.9	36	0.3601	11:36:25	30-Jul-09	2.6
285	2.8	32.9	36	0.3465	11:37:25	30-Jul-09	2.6
286	2.3	33	36	0.3356	11:38:25	30-Jul-09	2.6
287	2.7	33	36	0.3312	11:39:25	30-Jul-09	2.6
288	2.6	33.1	36	0.3309	11:40:25	30-Jul-09	2.7
289	2.2	33.1	36	0.3322	11:41:25	30-Jul-09	2.6
290	2.8	33.2	36	0.3298	11:42:25	30-Jul-09	2.7
291	2.8	33.2	36	0.3332	11:43:25	30-Jul-09	2.7
292	3.1	33.2	36	0.3205	11:44:25	30-Jul-09	2.7
293	2.8	33.3	35	0.3181	11:45:25	30-Jul-09	2.7
294	2.5	33.3	35	0.3162	11:46:25	30-Jul-09	2.7
295	2.5	33.4	35	0.319	11:47:25	30-Jul-09	2.7
296	2.4	33.4	35	0.3187	11:48:25	30-Jul-09	2.7
297	2.8	33.5	35	0.3155	11:49:25	30-Jul-09	2.7
298	2.1	33.5	35	0.3208	11:50:25	30-Jul-09	2.6
299	2.1	33.5	35	0.3205	11:51:25	30-Jul-09	2.6
300	3	33.6	34	0.3142	11:52:25	30-Jul-09	2.6
301	2.6	33.6	34	0.317	11:53:25	30-Jul-09	2.6
302	2.5	33.6	34	0.3175	11:54:25	30-Jul-09	2.6
303	2.9	33.6	35	0.3146	11:55:25	30-Jul-09	2.6
304	2.8	33.7	34	0.3185	11:56:25	30-Jul-09	2.6
305	3	33.7	34	0.3047	11:57:25	30-Jul-09	2.7
306	2.1	33.7	34	0.3078	11:58:25	30-Jul-09	2.6
307	2.3	33.7	34	0.3066	11:59:25	30-Jul-09	2.6
308	3	33.8	34	0.3018	12:00:25	30-Jul-09	2.6
309	2.2	33.8	34	0.3099	12:01:25	30-Jul-09	2.6
310	2.6	33.8	34	0.3093	12:02:25	30-Jul-09	2.6
311	2.6	33.9	34	0.3098	12:03:25	30-Jul-09	2.6
312	3.5	33.9	34	0.3438	12:04:25	30-Jul-09	2.6
313	2.9	33.9	34	0.3503	12:05:25	30-Jul-09	2.6
314	2.6	33.9	34	0.3518	12:06:25	30-Jul-09	2.7
315	3.1	34	34	0.3355	12:07:25	30-Jul-09	2.7
316	3	34	34	0.3177	12:08:25	30-Jul-09	2.7
317	2.9	34	34	0.3127	12:09:25	30-Jul-09	2.8
318	2.7	34	34	0.3156	12:10:25	30-Jul-09	2.8
319	3	34	33	0.3253	12:11:25	30-Jul-09	2.8
320	2.9	34.1	33	0.3488	12:12:25	30-Jul-09	2.8
321	2.6	34.1	33	0.3697	12:13:25	30-Jul-09	2.8
322	3	34.1	33	0.3627	12:14:25	30-Jul-09	2.8
323	3.1	34.1	33	0.3452	12:15:25	30-Jul-09	2.9
324	2.4	34.1	33	0.3433	12:16:25	30-Jul-09	2.8
325	2.8	34.1	33	0.3416	12:17:25	30-Jul-09	2.9
326	2.6	34.1	33	0.3348	12:18:25	30-Jul-09	2.9
327	2.9	34.1	33	0.3489	12:19:25	30-Jul-09	2.9
328	3	34.2	32	0.3853	12:20:25	30-Jul-09	2.8
329	2.1	34.2	32	0.374	12:21:25	30-Jul-09	2.8
330	2.7	34.2	32	0.3755	12:22:25	30-Jul-09	2.8
331	2.4	34.2	33	0.3462	12:23:25	30-Jul-09	2.8
332	2.1	34.2	33	0.3388	12:24:25	30-Jul-09	2.7
333	2.2	34.2	32	0.3307	12:25:25	30-Jul-09	2.7
334	2.2	34.2	32	0.3312	12:26:25	30-Jul-09	2.6
335	2.3	34.2	32	0.3305	12:27:25	30-Jul-09	2.6
336	2.7	34.2	32	0.3407	12:28:25	30-Jul-09	2.6
337	2.4	34.2	32	0.3442	12:29:25	30-Jul-09	2.6
338	2.3	34.3	32	0.3438	12:30:25	30-Jul-09	2.5
339	2.5	34.3	32	0.3331	12:31:25	30-Jul-09	2.5
340	2.2	34.3	32	0.3302	12:32:25	30-Jul-09	2.5
341	2.4	34.3	32	0.3288	12:33:25	30-Jul-09	2.4
342	2	34.4	32	0.332	12:34:25	30-Jul-09	2.4
343	2.3	34.3	31	0.3486	12:35:25	30-Jul-09	2.4
344	2.8	34.4	31	0.4286	12:36:25	30-Jul-09	2.4
345	2.6	34.4	31	0.4207	12:37:25	30-Jul-09	2.4
346	3.1	34.4	31	0.4164	12:38:25	30-Jul-09	2.4

Appendix I
Ambient Air Dust Monitoring Results - SEAD-12 Removal Action

Seneca Army Depot Activity
Romulus, NY

DataRam 4 Dust Monitor, Serial Number D454

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
344	6.9	42.3	33	0.2199	12:39:28	30-Jul-09	24.1
345	7.4	42.3	33	0.2138	12:40:28	30-Jul-09	23.9
346	10.2	42.5	33	0.2389	12:41:28	30-Jul-09	24.0
347	242.6	42.4	33	0.4202	12:42:28	30-Jul-09	37.0
348	8.9	42.3	33	0.3827	12:43:28	30-Jul-09	29.7
349	62.1	42.4	33	0.3148	12:44:28	30-Jul-09	33.0
350	20	42.5	33	0.3391	12:45:28	30-Jul-09	32.5
351	9	42.2	33	0.2853	12:46:28	30-Jul-09	32.4
352	18.1	42.6	33	0.2876	12:47:28	30-Jul-09	32.4
353	43.9	42.5	33	0.4517	12:48:28	30-Jul-09	33.5
354	19.5	42.3	33	0.3703	12:49:28	30-Jul-09	33.6
355	13.4	42.3	33	0.2897	12:50:28	30-Jul-09	33.0
356	6.7	42.1	33	0.248	12:51:28	30-Jul-09	32.7
357	7	42.1	32	0.2448	12:52:28	30-Jul-09	31.8
358	7	42.4	33	0.2304	12:53:28	30-Jul-09	30.7
359	7.5	42.1	33	0.2301	12:54:28	30-Jul-09	30.6
360	6.4	42.2	33	0.2256	12:55:28	30-Jul-09	30.6
361	13.2	42.2	33	0.2389	12:56:28	30-Jul-09	31.0
362	139.1	42.1	33	0.5255	12:57:28	30-Jul-09	39.0
363	9	42.2	33	0.3452	12:58:28	30-Jul-09	24.4
364	7.3	42.1	33	0.2434	12:59:28	30-Jul-09	24.3
365	7.8	42	33	0.2215	13:00:28	30-Jul-09	20.9
366	6.7	42.4	33	0.2064	13:01:28	30-Jul-09	20.1
367	7.2	42.3	33	0.2037	13:02:28	30-Jul-09	20.0
368	7.4	42.3	33	0.2621	13:03:28	30-Jul-09	19.3
369	6.4	42	32	0.2437	13:04:28	30-Jul-09	17.0
370	5.9	42.3	33	0.2198	13:05:28	30-Jul-09	16.1
371	6.5	42.1	32	0.2279	13:06:28	30-Jul-09	15.7
372	7.1	42.4	33	0.2335	13:07:28	30-Jul-09	15.7
373	21.9	42.2	33	0.2801	13:08:28	30-Jul-09	16.7
374	42.6	42.3	33	0.4579	13:09:28	30-Jul-09	18.9
375	12	42.4	33	0.3237	13:10:28	30-Jul-09	19.2
376	9.3	42.3	33	0.2502	13:11:28	30-Jul-09	19.3
377	12	42.3	33	0.28	13:12:28	30-Jul-09	19.3
378	8.9	42.4	33	0.2371	13:13:28	30-Jul-09	11.1
379	7.7	42.5	33	0.2165	13:14:28	30-Jul-09	11.0
380	9.1	42.5	33	0.2425	13:15:28	30-Jul-09	11.2
381	8	42.3	33	0.2462	13:16:28	30-Jul-09	11.2
382	7.5	42.1	32	0.2315	13:17:28	30-Jul-09	11.2
383	7.9	42.2	33	0.2322	13:18:28	30-Jul-09	11.3
384	7.4	42.4	33	0.1934	13:19:28	30-Jul-09	11.3
385	8.2	42.5	32	0.1896	13:20:28	30-Jul-09	11.4
386	7.5	42.8	33	0.1916	13:21:28	30-Jul-09	11.5
387	8.4	42.9	32	0.1969	13:22:28	30-Jul-09	11.6
388	8.9	42.9	32	0.2222	13:23:28	30-Jul-09	11.7
389	8	42.7	32	0.2192	13:24:28	30-Jul-09	10.8
390	7.9	42.5	32	0.2036	13:25:28	30-Jul-09	8.7
391	7.9	42.7	32	0.2165	13:26:28	30-Jul-09	8.4
392	7.9	42.7	32	0.1945	13:27:28	30-Jul-09	8.3
393	7.8	42.7	32	0.2057	13:28:28	30-Jul-09	8.1
394	8.8	42.8	32	0.2361	13:29:28	30-Jul-09	8.1
395	8.1	42.7	32	0.2012	13:30:28	30-Jul-09	8.1
396	9	43	32	0.2117	13:31:28	30-Jul-09	8.1
397	8.4	42.8	31	0.2025	13:32:28	30-Jul-09	8.1
398	8.4	43.4	32	0.2223	13:33:28	30-Jul-09	8.2
399	9	43.3	32	0.2097	13:34:28	30-Jul-09	8.2
400	8.9	43.7	32	0.1951	13:35:28	30-Jul-09	8.3
401	8.9	43.9	32	0.1879	13:36:28	30-Jul-09	8.4
402	8.5	44.3	32	0.1797	13:37:28	30-Jul-09	8.4
403	9	44.1	32	0.1888	13:38:28	30-Jul-09	8.5
404	9.1	44.4	32	0.208	13:39:28	30-Jul-09	8.5
405	8.9	44.6	32	0.2117	13:40:28	30-Jul-09	8.5
406	8.5	44.3	32	0.1922	13:41:28	30-Jul-09	8.6
407	10.2	44.9	32	0.2066	13:42:28	30-Jul-09	8.7
408	11.3	45.9	33	0.2169	13:43:28	30-Jul-09	8.9
409	8.5	46.2	33	0.203	13:44:28	30-Jul-09	9.0
410	8.7	46.3	33	0.2142	13:45:28	30-Jul-09	9.0
411	8.7	46.3	33	0.2179	13:46:28	30-Jul-09	9.0
412	10	46.3	33	0.195	13:47:28	30-Jul-09	9.1
413	17.4	46.4	33	0.2406	13:48:28	30-Jul-09	9.6
414	30.6	46.4	33	0.2654	13:49:28	30-Jul-09	11.0
415	16.3	46.4	32	0.2577	13:50:28	30-Jul-09	11.5
416	15.8	46.4	33	0.2201	13:51:28	30-Jul-09	11.9
417	48.9	46.4	33	0.3559	13:52:28	30-Jul-09	14.4
418	206	46.4	33	0.5911	13:53:28	30-Jul-09	26.7
419	63.2	46.5	33	0.456	13:54:28	30-Jul-09	30.1
420	9.4	46.6	32	0.2022	13:55:28	30-Jul-09	30.2
421	9.7	46.5	33	0.1835	13:56:28	30-Jul-09	30.2
422	14.6	46.5	33	0.2303	13:57:28	30-Jul-09	30.6
423	9	46.6	33	0.1961	13:58:28	30-Jul-09	30.5
424	9.5	46.7	33	0.1926	13:59:28	30-Jul-09	30.4
425	9.4	46.7	33	0.1947	14:00:28	30-Jul-09	30.5
426	17.6	46.7	33	0.2575	14:01:28	30-Jul-09	31.0
427	16.1	46.7	33	0.303	14:02:28	30-Jul-09	31.5
428	19.5	46.7	33	0.2657	14:03:28	30-Jul-09	32.1
429	44	46.7	33	0.377	14:04:28	30-Jul-09	33.7
430	87.8	46.7	33	0.3986	14:05:28	30-Jul-09	37.3
431	555.9	46.8	33	0.498	14:06:28	30-Jul-09	71.0
432	10.5	46.8	33	0.1801	14:07:28	30-Jul-09	70.7
433	20.7	46.8	33	0.2638	14:08:28	30-Jul-09	68.9
434	11	46.8	32	0.1856	14:09:28	30-Jul-09	56.7
435	11.7	46.8	33	0.2088	14:10:28	30-Jul-09	53.5
436	10.5	46.8	32	0.1802	14:11:28	30-Jul-09	53.6
437	28.7	46.8	32	0.312	14:12:28	30-Jul-09	54.8
438	15.3	46.8	32	0.2325	14:13:28	30-Jul-09	54.8
439	10.2	46.9	32	0.1808	14:14:28	30-Jul-09	54.9
440	10.5	46.9	32	0.2019	14:15:28	30-Jul-09	55.0
441	27.4	46.8	32	0.242	14:16:28	30-Jul-09	56.1
442	147.2	46.8	32	0.4401	14:17:28	30-Jul-09	64.2
443	25.3	46.8	32	0.3754	14:18:28	30-Jul-09	64.8

DataRam 4 Dust Monitor, Serial Number D464

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
347	2.3	34.4	31	0.3754	12:39:25	30-Jul-09	2.4
348	2.4	34.4	31	0.3759	12:40:25	30-Jul-09	2.4
349	2.8	34.5	31	0.3584	12:41:25	30-Jul-09	2.5
350	2.2	34.5	31	0.343	12:42:25	30-Jul-09	2.5
351	2.7	34.5	31	0.3613	12:43:25	30-Jul-09	2.5
352	2.8	34.5	31	0.3406	12:44:25	30-Jul-09	2.5
353	2.5	34.6	31	0.3604	12:45:25	30-Jul-09	2.5
354	2.3	34.6	31	0.3583	12:46:25	30-Jul-09	2.5
355	2.7	34.6	31	0.3675	12:47:25	30-Jul-09	2.5
356	2.8	34.6	31	0.3879	12:48:25	30-Jul-09	2.5
357	2.4	34.7	31	0.3766	12:49:25	30-Jul-09	2.5
358	3.1	34.7	31	0.3553	12:50:25	30-Jul-09	2.6
359	2.2	34.7	30	0.3312	12:51:25	30-Jul-09	2.6
360	2	34.7	31	0.3325	12:52:25	30-Jul-09	2.6
361	2.4	34.7	31	0.3315	12:53:25	30-Jul-09	2.5
362	1.9	34.7	30	0.3326	12:54:25	30-Jul-09	2.5
363	2.5	34.7	31	0.3315	12:55:25	30-Jul-09	2.5
364	3.5	34.7	31	0.3294	12:56:25	30-Jul-09	2.6
365	2.3	34.7	31	0.326	12:57:25	30-Jul-09	2.5
366	2.6	34.7	31	0.3267	12:58:25	30-Jul-09	2.5
367	2.9	34.8	31	0.3253	12:59:25	30-Jul-09	2.6
368	3.4	34.7	30	0.3256	13:00:25	30-Jul-09	2.6
369	3.5	34.8	30	0.365	13:01:25	30-Jul-09	2.7
370	5.5	34.8	31	0.3975	13:02:25	30-Jul-09	2.9
371	4	34.7	30	0.3697	13:03:25	30-Jul-09	2.9
372	5	34.8	30	0.3318	13:04:25	30-Jul-09	3.1
373	3.2	34.7	30	0.3841	13:05:25	30-Jul-09	3.1
374	2.8	34.7	30	0.3636	13:06:25	30-Jul-09	3.1
375	3.1	34.8	31	0.3562	13:07:25	30-Jul-09	3.2
376	2.9	34.8	31	0.3495	13:08:25	30-Jul-09	3.2
377	2.8	34.8	31	0.3279	13:09:25	30-Jul-09	3.2
378	2.3	34.8	31	0.3288	13:10:25	30-Jul-09	3.3
379	3.2	34.8	31	0.3274	13:11:25	30-Jul-09	3.3
380	3.1	34.9	31	0.3064	13:12:25	30-Jul-09	3.3
381	2.9	34.9	31	0.3076	13:13:25	30-Jul-09	3.3
382	2.5	34.9	31	0.3182	13:14:25	30-Jul-09	3.3
383	3.2	35	31	0.3193	13:15:25	30-Jul-09	3.3
384	2.8	35	31	0.3169	13:16:25	30-Jul-09	3.3
385	3.4	35	31	0.3204	13:17:25	30-Jul-09	3.3
386	3.4	35.1	31	0.3107	13:18:25	30-Jul-09	3.2
387	2.9	35.1	31	0.3173	13:19:25	30-Jul-09	3.1
388	4.5	35.1	31	0.3413	13:20:25	30-Jul-09	3.1
389	3.9	35.1	30	0.3896	13:21:25	30-Jul-09	3.1
390	3.9	35.2	30	0.3171	13:22:25	30-Jul-09	3.2
391	3.6	35.2	30	0.2971	13:23:25	30-Jul-09	3.2
392	3.7	35.3	30	0.2887	13:24:25	30-Jul-09	3.3
393	3.4	35.3	30	0.3025	13:25:25	30-Jul-09	3.3
394	3.4	35.4	30	0.2999	13:26:25	30-Jul-09	3.4
395	3.2	35.4	30	0.3024	13:27:25	30-Jul-09	3.4
396	3.1	35.5	30	0.303	13:28:25	30-Jul-09	3.4
397	4	35.5	30	0.3137	13:29:25	30-Jul-09	3.4
398	3.6	35.5	30	0.3394	13:30:25	30-Jul-09	3.5
399	3.9	35.6	30	0.295	13:31:25	30-Jul-09	3.5
400	3.7	35.7	30	0.2829	13:32:25	30-Jul-09	3.6
401	4	35.7	30	0.276	13:33:25	30-Jul-09	3.6
402	4.1	35.7	29	0.2796	13:34:25	30-Jul-09	3.7
403	3.4	35.8	30	0.2754	13:35:25	30-Jul-09	3.7
404	3.8	35.8	30	0.2818	13:36:25	30-Jul-09	3.7
405	3.6	35.9	29	0.2941	13:37:25	30-Jul-09	3.7
406	4.1	36	29	0.296	13:38:25	30-Jul-09	3.7
407	4.1	36	29	0.3066	13:39:25	30-Jul-09	3.7
408	4.1	36	29	0.2956	13:40:25	30-Jul-09	3.7
409	3.7	36.1	29	0.2954	13:41:25	30-Jul-09	3.7
410	3.1	36.1	29	0.3023	13:42:25	30-Jul-09	3.7
411	3.6	36.2	29	0.2879	13:43:25	30-Jul-09	3.7
412	3.4	36.2	29	0.2835	13:44:25	30-Jul-09	3.8
413	3.2	36.2	29	0.2765	13:45:25	30-Jul-09	3.7
414	3.3	36.3	29	0.2805	13:46:25	30-Jul-09	3.7
415	3.6	36.3	29	0.2924	13:47:25	30-Jul-09	3.7
416	3.7	36.3	29	0.2807	13:48:25	30-Jul-09	3.7
417	3.9	36.3	29	0.2876	13:49:25	30-Jul-09	3.7
418	4.5	36.4	29	0.2732	13:50:25	30-Jul-09	3.7
419	4.7	36.4	29	0.2907	13:51:25	30-Jul-09	3.8
420	4.1	36.5	29	0.2981	13:52:25	30-Jul-09	3.8
421	4.6	36.5	29	0.291	13:53:25	30-Jul-09	3.9
422	4.4	36.5	29	0.3023	13:54:25	30-Jul-09	3.9
423	4.8	36.5	29	0.2829	13:55:25	30-Jul-09	3.9
424	4.4	36.6	29	0.3058	13:56:25	30-Jul-09	3.9
425	4.2	36.6	29	0.3198	13:57:25	30-Jul-09	4.0
426	3.7	36.6	29	0.3078	13:58:25	30-Jul-09	4.0
427	4.3	36.6	29	0.2759	13:59:25	30-Jul-09	4.1
428	3.1	36.7	29	0.2922	14:00:25	30-Jul-09	4.0
429	4.6	36.7	29	0.2597	14:01:25	30-Jul-09	4.1
430	3.8	36.7	29	0.2717	14:02:25	30-Jul-09	4.2
431	4.2	36.7	29	0.2667	14:03:25	30-Jul-09	4.2
432	4.3	36.7	29	0.2588	14:04:25	30-Jul-09	4.2
433	4.2	36.7	29	0.2657	14:05:25	30-Jul-09	4.2
434	3.9	36.7	29	0.275	14:06:25	30-Jul-09	4.2
435	4.3	36.7	29	0.2804	14:07:25	30-Jul-09	4.2
436	4.9	36.8	29	0.2858	14:08:25	30-Jul-09	4.2
437	4.3	36.7	29	0.2904	14:09:25	30-Jul-09	4.2
438	4.3	36.8	29	0.2778	14:10:25	30-Jul-09	4.2
439	4.1	36.8	29	0.2733	14:11:25	30-Jul-09	4.2
440	4.7	36.8	29	0.268	14:12:25	30-Jul-09	4.2
441	4.7	36.8	29	0.2738	14:13:25	30-Jul-09	4.2
442	5.4	36.8	28	0.2475	14:14:25	30-Jul-09	4.3
443	4.6	36.9	29	0.3003	14:15:25	30-Jul-09	4.3
444	4.2	36.9	29	0.2687	14:16:25	30-Jul-09	4.4
445	4.1	36.9	29	0.268	14:17:25	30-Jul-09	4.4
446	4.5	36.9	29	0.2936	14:18:25	30-Jul-09	4.4

Appendix I
Ambient Air Dust Monitoring Results - SEAD-12 Removal Action

Seneca Army Depot Activity
Romulus, NY

DataRam 4 Dust Monitor, Serial Number D454

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
444	21.8	46.8	33	0.2681	14:19:28	30-Jul-09	64.9
445	11.8	46.8	32	0.2293	14:20:28	30-Jul-09	62.9
446	9.3	46.9	32	0.1982	14:21:28	30-Jul-09	58.0
447	9.7	46.8	32	0.1872	14:22:28	30-Jul-09	23.9
448	10.3	46.8	32	0.2078	14:23:28	30-Jul-09	23.8
449	9.2	46.8	32	0.1793	14:24:28	30-Jul-09	23.1
450	10.2	46.8	32	0.1771	14:25:28	30-Jul-09	23.1
451	10	46.8	32	0.1832	14:26:28	30-Jul-09	23.0
452	22.5	46.8	32	0.3088	14:27:28	30-Jul-09	23.7
453	10.1	46.8	33	0.1793	14:28:28	30-Jul-09	22.6
454	11	46.8	32	0.2028	14:29:28	30-Jul-09	22.3
455	13.7	46.8	32	0.202	14:30:28	30-Jul-09	22.5
456	26.5	46.7	32	0.3477	14:31:28	30-Jul-09	23.5
457	11.1	46.7	32	0.2438	14:32:28	30-Jul-09	22.5
458	9.9	46.7	32	0.1567	14:33:28	30-Jul-09	13.9
459	11.4	46.7	32	0.1795	14:34:28	30-Jul-09	13.0
460	10.4	46.8	32	0.1828	14:35:28	30-Jul-09	12.3
461	10.3	46.8	32	0.1845	14:36:28	30-Jul-09	12.2
462	9.5	46.8	32	0.1675	14:37:28	30-Jul-09	12.2
463	10.1	46.8	32	0.1682	14:38:28	30-Jul-09	12.3
464	9.4	46.9	32	0.1575	14:39:28	30-Jul-09	12.2
465	10.7	46.8	32	0.1818	14:40:28	30-Jul-09	12.3
466	9.7	46.9	32	0.1765	14:41:28	30-Jul-09	12.3
467	10.4	46.8	32	0.195	14:42:28	30-Jul-09	12.3
468	11.6	46.9	32	0.2002	14:43:28	30-Jul-09	11.6
469	108.5	46.9	32	0.4246	14:44:28	30-Jul-09	17.8
470	31.4	46.9	32	0.3993	14:45:28	30-Jul-09	19.0
471	146.8	46.9	32	0.4943	14:46:28	30-Jul-09	27.4
472	20.9	47	33	0.3685	14:47:28	30-Jul-09	27.0
473	15.6	47	33	0.2882	14:48:28	30-Jul-09	27.3
474	19.5	47	33	0.3546	14:49:28	30-Jul-09	27.9
475	19.3	47	32	0.2901	14:50:28	30-Jul-09	28.4
476	17.5	47.1	32	0.2887	14:51:28	30-Jul-09	28.8
477	14.4	47.1	32	0.2616	14:52:28	30-Jul-09	29.1
478	13.8	47.1	32	0.2078	14:53:28	30-Jul-09	29.4
479	4.6	47.2	32	0.3837	14:54:28	30-Jul-09	29.0
480	8.1	47.2	32	2.9079	14:55:28	30-Jul-09	28.9
481	21.9	47.3	32	3.8004	14:56:28	30-Jul-09	29.6
482	5.1	47.3	32	2.8019	14:57:28	30-Jul-09	29.3
483	10.1	47.3	32	3.5161	14:58:28	30-Jul-09	29.3
484	5.6	47.4	32	2.4613	14:59:28	30-Jul-09	28.9
485	9.5	47.4	32	3.5024	15:00:28	30-Jul-09	22.8
486	16.4	47.5	32	3.1154	15:01:28	30-Jul-09	21.8
487	239.2	47.5	32	3.5127	15:02:28	30-Jul-09	27.6
488	29.1	47.5	32	1.6285	15:03:28	30-Jul-09	28.1
489	38.1	47.6	32	1.0114	15:04:28	30-Jul-09	29.5
490	42.2	47.7	32	0.9243	15:05:28	30-Jul-09	30.9
491	13.7	47.7	32	3.1593	15:06:28	30-Jul-09	30.6
492	16.6	47.7	32	2.1132	15:07:28	30-Jul-09	30.5
493	18.9	47.9	32	1.3538	15:08:28	30-Jul-09	30.8
494	15.5	47.9	32	2.5992	15:09:28	30-Jul-09	30.9
495	21.1	47.9	32	2.4417	15:10:28	30-Jul-09	31.9
496	17.7	48	31	2.3553	15:11:28	30-Jul-09	32.5
497	17.1	48	31	4.127	15:12:28	30-Jul-09	32.2
498	17.7	48	31	4.127	15:13:28	30-Jul-09	33.0
499	17.7	48.1	31	4.127	15:14:28	30-Jul-09	33.5
500	17	48.1	31	4.127	15:15:28	30-Jul-09	34.2
501	20.3	48.2	31	4.127	15:16:28	30-Jul-09	34.9
502	26.6	48.2	31	4.127	15:17:28	30-Jul-09	35.5
503	31	48.3	31	4.0709	15:18:28	30-Jul-09	22.5
504	27.8	48.3	31	3.2342	15:19:28	30-Jul-09	22.4
505	20.6	48.3	31	3.7852	15:20:28	30-Jul-09	21.3
506	18.5	48.4	32	4.127	15:21:28	30-Jul-09	19.9
507	22.2	48.4	31	4.127	15:22:28	30-Jul-09	20.4
508	19.7	48.5	32	3.8897	15:23:28	30-Jul-09	20.6
509	21.3	48.5	32	2.7279	15:24:28	30-Jul-09	20.7
510	22.9	48.6	32	1.0945	15:25:28	30-Jul-09	21.2
511	22.7	48.6	32	0.6176	15:26:28	30-Jul-09	21.3
512	23	48.6	32	0.68	15:27:28	30-Jul-09	21.6
513	23.3	48.6	32	0.6784	15:28:28	30-Jul-09	22.0
514	21.8	48.7	32	0.3948	15:29:28	30-Jul-09	22.3
515	22.4	48.7	32	0.3397	15:30:28	30-Jul-09	22.6
516	21.5	48.7	32	0.2885	15:31:28	30-Jul-09	22.9
517	20.6	48.8	31	0.3021	15:32:28	30-Jul-09	22.9
518	20.7	48.7	31	0.2404	15:33:28	30-Jul-09	22.5
519	21	48.7	31	0.2337	15:34:28	30-Jul-09	21.9
520	20.4	48.7	31	0.2291	15:35:28	30-Jul-09	21.4
521	17	48.7	31	0.1689	15:36:28	30-Jul-09	21.2
522	18.7	48.7	31	0.1557	15:37:28	30-Jul-09	21.2
523	19.7	48.7	31	0.1664	15:38:28	30-Jul-09	21.0
524	18.2	48.7	31	0.1587	15:39:28	30-Jul-09	21.0
525	19.4	48.7	31	0.1564	15:40:28	30-Jul-09	20.8
526	91	48.7	31	0.2905	15:41:28	30-Jul-09	25.1
527	83.6	48.6	31	0.5271	15:42:28	30-Jul-09	28.9
528	89.4	48.6	31	0.4958	15:43:28	30-Jul-09	33.0
529	42.4	48.6	31	0.2957	15:44:28	30-Jul-09	34.2
530	48.8	48.6	31	0.3655	15:45:28	30-Jul-09	35.9
531	28.7	48.6	31	0.3151	15:46:28	30-Jul-09	36.3
532	26.8	48.7	31	0.2619	15:47:28	30-Jul-09	36.7
533	34.2	48.7	31	0.274	15:48:28	30-Jul-09	37.5
534	39.3	48.7	31	0.301	15:49:28	30-Jul-09	38.7
535	29.9	48.7	31	0.2735	15:50:28	30-Jul-09	39.2
536	25.4	48.7	31	0.2338	15:51:28	30-Jul-09	39.5
537	32.5	48.7	31	0.3711	15:52:28	30-Jul-09	40.5
538	83.9	48.7	31	0.4107	15:53:28	30-Jul-09	44.6
539	28.8	48.8	32	0.4611	15:54:28	30-Jul-09	45.1
540	23.8	48.8	32	0.4101	15:55:28	30-Jul-09	45.5
541	26.7	48.8	31	0.39	15:56:28	30-Jul-09	46.0
542	66.4	48.9	31	0.4744	15:57:28	30-Jul-09	44.4
543	27.5	48.8	31	0.6061	15:58:28	30-Jul-09	40.9

DataRam 4 Dust Monitor, Serial Number D464

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
447	4.1	36.9	29	0.2812	14:19:25	30-Jul-09	4.4
448	4.4	36.9	29	0.2747	14:20:25	30-Jul-09	4.4
449	4.1	36.9	29	0.2861	14:21:25	30-Jul-09	4.4
450	4.3	37	29	0.2715	14:22:25	30-Jul-09	4.4
451	4.2	37	29	0.2763	14:23:25	30-Jul-09	4.4
452	4.1	37	29	0.288	14:24:25	30-Jul-09	4.4
453	4.4	37	29	0.2777	14:25:25	30-Jul-09	4.4
454	5.2	37	28	0.2778	14:26:25	30-Jul-09	4.4
455	4.9	37	28	0.3014	14:27:25	30-Jul-09	4.5
456	5	37	28	0.3014	14:28:25	30-Jul-09	4.5
457	4.5	37	28	0.2766	14:29:25	30-Jul-09	4.5
458	81.7	37	28	0.5947	14:30:25	30-Jul-09	9.3
459	5.3	37	28	0.3056	14:31:25	30-Jul-09	9.3
460	5.1	37.1	28	0.2657	14:32:25	30-Jul-09	9.4
461	5	37.1	28	0.2763	14:33:25	30-Jul-09	9.4
462	4.7	37.1	29	0.2663	14:34:25	30-Jul-09	9.4
463	4.7	37.1	28	0.2743	14:35:25	30-Jul-09	9.5
464	5.1	37.2	29	0.269	14:36:25	30-Jul-09	9.5
465	4.8	37.2	28	0.2808	14:37:25	30-Jul-09	9.6
466	4.6	37.2	28	0.2625	14:38:25	30-Jul-09	9.6
467	4	37.2	28	0.2718	14:39:25	30-Jul-09	9.6
468	5.3	37.2	28	0.2551	14:40:25	30-Jul-09	9.6
469	4.7	37.3	28	0.2704	14:41:25	30-Jul-09	9.7
470	4.3	37.3	28	0.2839	14:42:25	30-Jul-09	9.6
471	4.9	37.3	28	0.2907	14:43:25	30-Jul-09	9.6
472	4.5	37.4	28	0.2536	14:44:25	30-Jul-09	9.6
473	5.1	37.4	28	0.2453	14:45:25	30-Jul-09	9.6
474	5.2	37.4	28	0.2655	14:46:25	30-Jul-09	4.8
475	4.5	37.5	28	0.2646	14:47:25	30-Jul-09	4.8
476	4.7	37.5	28	0.2643	14:48:25	30-Jul-09	4.8
477	5	37.5	28	0.267	14:49:25	30-Jul-09	4.8
478	5.1	37.6	28	0.2541	14:50:25	30-Jul-09	4.8
479	4.9	37.6	28	0.2818	14:51:25	30-Jul-09	4.8
480	8	37.7	28	0.2689	14:52:25	30-Jul-09	5.0
481	8.1	37.7	28	0.332	14:53:25	30-Jul-09	5.2
482	5.3	37.7	28	0.2865	14:54:25	30-Jul-09	5.2
483	5.3	37.8	28	0.2599	14:55:25	30-Jul-09	5.3
484	5.5	37.8	28	0.2428	14:56:25	30-Jul-09	5.3
485	5.7	37.9	28	0.2661	14:57:25	30-Jul-09	5.4
486	5.4	37.9	28	0.2573	14:58:25	30-Jul-09	5.5
487	4.8	38	28	0.2599	14:59:25	30-Jul-09	5.4
488	5.3	38	28	0.2305	15:00:25	30-Jul-09	5.5
489	5.4	38.1	28	0.2823	15:01:25	30-Jul-09	5.5
490	5.6	38.1	28	0.245	15:02:25	30-Jul-09	5.5
491	6.1	38.1	28	0.247	15:03:25	30-Jul-09	5.6
492	6.9	38.2	28	0.248	15:04:25	30-Jul-09	5.8
493	6.1	38.2	28	0.2556	15:05:25	30-Jul-09	5.8
494	4.6	38.3	28	0.2542	15:06:25	30-Jul-09	5.8
495	5.5	38.3	28	0.2331	15:07:25	30-Jul-09	5.9
496	5.3	38.3	28	0.2275	15:08:25	30-Jul-09	5.7
497	7	38.4	28	0.2575	15:09:25	30-Jul-09	5.6
498	13.9	38.4	28	0.3463	15:10:25	30-Jul-09	6.2
499	7.3	38.5	27	0.2628	15:11:25	30-Jul-09	6.3
500	6.1	38.5	27	0.2497	15:12:25	30-Jul-09	6.3
501	6.1	38.5	28	0.2667	15:13:25	30-Jul-09	6.3
502	6.2	38.5	27	0.2353	15:14:25	30-Jul-09	6.4
503	25.6	38.5	27	0.3332	15:15:25	30-Jul-09	7.7
504	39.1	38.5	27	0.791	15:16:25	30-Jul-09	9.8
505	9.5	38.5	27	0.3261	15:17:25	30-Jul-09	10.1
506	15.3	38.6	28	0.5042	15:18:25	30-Jul-09	10.7
507	7.3	38.6	28	0.2658	15:19:25	30-Jul-09	10.7
508	7.3	38.6	28	0.258	15:20:25	30-Jul-09	10.8
509	5.6	38.7	28	0.2244	15:21:25	30-Jul-09	10.7
510	6	38.7	28	0.2285	15:22:25	30-Jul-09	10.8
511	6	38.7	28	0.2336	15:23:25	30-Jul-09	10.9
512	5	38.8	28	0.241	15:24:25	30-Jul-09	10.8
513	5.9	38.8	28	0.2352	15:25:25	30-Jul-09	10.8
514	8.5	38.9	28	0.2842	15:26:25	30-Jul-09	10.4
515	5.9	38.9	28	0.2601	15:27:25	30-Jul-09	10.3
516	7.1	39	28	0.2615	15:28:25	30-Jul-09	10.4
517	5.3	39	28	0.2688	15:29:25	30-Jul-09	10.4
518	5.5	39	28	0.2389	15:30:25	30-Jul-09	10.3
519	6.5	39	28	0.2264	15:31:25	30-Jul-09	9.1
520	8.5	39	28	0.2528	15:32:25	30-Jul-09	7.2
521	157.6	39	28	0.8039	15:33:25	30-Jul-09	16.5
522	25.3	39	28	1.3593	15:34:25	30-Jul-09	17.1
523	7.2	39.1	28	0.3158	15:35:25	30-Jul-09	17.1
524	6.4	39.1	28	0.2703	15:36:25	30-Jul-09	17.0
525	6.3	39.1	28	0.2378	15:37:25	30-Jul-09	17.1
526	6.6	39.1	28	0.2406	15:38:25	30-Jul-09	17.1
527	116	39.1	28	1.2938	15:39:25	30-Jul-09	24.0
528	59.9	39.1	28	1.1627	15:40:25	30-Jul-09	27.4
529	21.5	39.2	28	0.6914	15:41:25	30-Jul-09	28.4
530	14.6	39.2	28	0.5971	15:42:25	30-Jul-09	28.8
531	8.3	39.2	28	0.3295	15:43:25	30-Jul-09	28.9
532	7.5	39.3	28	0.2376	15:44:25	30-Jul-09	28.9
533	6.5	39.3	28	0.2132	15:45:25	30-Jul-09	29.0
534	6.6	39.3	28	0.2262	15:46:25	30-Jul-09	29.1
535	6.9	39.4	28	0.2166	15:47:25	30-Jul-09	29.1
536	7.2	39.4	28	0.2145	15:48:25	30-Jul-09	29.0
537	7.7	39.5	28	0.2133	15:49:25	30-Jul-09	19.7
538	8.1	39.5	28	0.2176	15:50:25	30-Jul-09	18.6
539	7.7	39.5	28	0.2117	15:51:25	30-Jul-09	18.6
540	7.8	39.6	28	0.2129	15:52:25	30-Jul-09	18.7
541	6.8	39.6	28	0.2315	15:53:25	30-Jul-09	18.7
542	7.3	39.6	28	0.2346	15:54:25	30-Jul-09	18.8
543	7.1	39.7	27	0.2403	15:55:25	30-Jul-09	12.0
544	5.9	39.7	27	0.224	15:56:25	30-Jul-09	8.6
545	6.8	39.7	27	0.2381	15:57:25	30-Jul-09	7.7
546	6.5	39.7	27	0.2269	15:58:25	30-Jul-09	7.2

Appendix I
Ambient Air Dust Monitoring Results - SEAD-12 Removal Action

Seneca Army Depot Activity
Romulus, NY

DataRam 4 Dust Monitor, Serial Number D454

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
544	28.2	48.9	31	0.5534	15:59:28	30-Jul-09	37.1
545	62.8	48.9	31	0.6122	16:00:28	30-Jul-09	38.4
546	19.1	49	31	0.3862	16:01:28	30-Jul-09	36.5
547	16.7	49	31	0.4295	16:02:28	30-Jul-09	35.8
548	18.5	49.1	31	0.3992	16:03:28	30-Jul-09	35.2
549	20.6	49	31	0.3932	16:04:28	30-Jul-09	34.4
550	19.1	49	31	0.3038	16:05:28	30-Jul-09	33.1
551	17.3	49	31	0.27	16:06:28	30-Jul-09	32.3
552	18.6	49.1	31	0.2645	16:07:28	30-Jul-09	31.9
553	30.3	49.1	31	0.303	16:08:28	30-Jul-09	31.8
554	20	49.1	31	0.2485	16:09:28	30-Jul-09	27.8
555	18.8	49.1	31	0.2381	16:10:28	30-Jul-09	27.2
556	19.2	49.1	31	0.2236	16:11:28	30-Jul-09	26.9
557	19.6	49.1	31	0.2267	16:12:28	30-Jul-09	26.4
558	19.6	49.2	31	0.2509	16:13:28	30-Jul-09	23.5
559	20.6	49.1	31	0.263	16:14:28	30-Jul-09	23.1
560	20.6	49.2	31	0.2764	16:15:28	30-Jul-09	22.6
561	21	49.2	31	0.2568	16:16:28	30-Jul-09	20.0
562	19.8	49.3	31	0.2489	16:17:28	30-Jul-09	20.0
563	18.9	49.4	31	0.273	16:18:28	30-Jul-09	20.2
564	18.7	49.3	31	0.3009	16:19:28	30-Jul-09	20.2
565	20.7	49.4	30	0.2755	16:20:28	30-Jul-09	20.2

DataRam 4 Dust Monitor, Serial Number D464

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
547	7	39.8	27	0.2288	15:59:25	30-Jul-09	7.1
548	6.7	39.8	27	0.2065	16:00:25	30-Jul-09	7.0
549	7.4	39.8	27	0.2046	16:01:25	30-Jul-09	7.1
550	7.8	39.8	27	0.2016	16:02:25	30-Jul-09	7.2
551	7.6	39.8	26	0.2266	16:03:25	30-Jul-09	7.2
552	8.5	39.9	27	0.2223	16:04:25	30-Jul-09	7.3
553	8.4	39.9	27	0.2264	16:05:25	30-Jul-09	7.3
554	7.5	39.9	27	0.2157	16:06:25	30-Jul-09	7.3
555	8.2	39.9	27	0.2084	16:07:25	30-Jul-09	7.3
556	8.4	39.9	27	0.2118	16:08:25	30-Jul-09	7.4
557	8.2	39.9	27	0.2044	16:09:25	30-Jul-09	7.5
558	8.3	39.9	27	0.2195	16:10:25	30-Jul-09	7.5
559	8.1	39.9	27	0.1999	16:11:25	30-Jul-09	7.6
560	8.3	40	27	0.2273	16:12:25	30-Jul-09	7.7
561	8.8	40	27	0.2405	16:13:25	30-Jul-09	7.9
562	8.7	40	27	0.2283	16:14:25	30-Jul-09	8.0
563	8.4	40	27	0.2234	16:15:25	30-Jul-09	8.1
564	8	40	27	0.2212	16:16:25	30-Jul-09	8.2
565	8.2	40	27	0.2034	16:17:25	30-Jul-09	8.2
566	8	40	26	0.2384	16:18:25	30-Jul-09	8.2

1	31.6	24	52	0.8064	8:02:30	3-Aug-09	
2	17	23.9	54	0.62	8:03:30	3-Aug-09	
3	13.6	23.9	55	0.357	8:04:30	3-Aug-09	
4	13.3	23.9	56	0.3067	8:05:30	3-Aug-09	
5	13.1	23.9	56	0.2836	8:06:30	3-Aug-09	
6	13	23.9	57	0.3305	8:07:30	3-Aug-09	
7	13.2	23.9	58	0.3254	8:08:30	3-Aug-09	
8	14.8	23.9	58	0.4015	8:09:30	3-Aug-09	
9	13.5	23.8	58	0.3436	8:10:30	3-Aug-09	
10	13.7	23.9	59	0.3346	8:11:30	3-Aug-09	
11	13.4	23.8	59	0.3271	8:12:30	3-Aug-09	
12	13.4	23.8	59	0.3204	8:13:30	3-Aug-09	
13	13.3	23.8	60	0.3067	8:14:30	3-Aug-09	
14	12.9	23.8	60	0.3078	8:15:30	3-Aug-09	
15	12.8	23.8	60	0.3109	8:16:30	3-Aug-09	
16	14.1	23.8	60	0.389	8:17:30	3-Aug-09	14.8
17	14.2	23.8	61	0.3456	8:18:30	3-Aug-09	13.7
18	13.3	23.8	61	0.345	8:19:30	3-Aug-09	13.5
19	13.5	23.8	61	0.318	8:20:30	3-Aug-09	13.5
20	13.7	23.8	61	0.3626	8:21:30	3-Aug-09	13.5
21	13.3	23.8	61	0.3246	8:22:30	3-Aug-09	13.5
22	13.4	23.8	61	0.3139	8:23:30	3-Aug-09	13.5
23	13.6	23.8	61	0.3241	8:24:30	3-Aug-09	13.6
24	13.6	23.8	61	0.333	8:25:30	3-Aug-09	13.5
25	13.6	23.9	62	0.3143	8:26:30	3-Aug-09	13.5
26	13.6	23.9	62	0.3029	8:27:30	3-Aug-09	13.5
27	13.9	23.9	62	0.3441	8:28:30	3-Aug-09	13.5
28	13	23.9	62	0.3306	8:29:30	3-Aug-09	13.5
29	13	23.9	62	0.3165	8:30:30	3-Aug-09	13.5
30	12.9	24	62	0.322	8:31:30	3-Aug-09	13.5
31	12.8	24	62	0.294	8:32:30	3-Aug-09	13.5
32	13	24	62	0.29	8:33:30	3-Aug-09	13.4
33	12.8	24	62	0.299	8:34:30	3-Aug-09	13.3
34	12.2	24	62	0.2765	8:35:30	3-Aug-09	13.2
35	12.3	24	62	0.3182	8:36:30	3-Aug-09	13.2
36	11.8	24.1	62	0.2981	8:37:30	3-Aug-09	13.1
37	11.1	24.1	62	0.2965	8:38:30	3-Aug-09	12.9
38	11.5	24.1	62	0.277	8:39:30	3-Aug-09	12.8
39	11.6	24.1	62	0.269	8:40:30	3-Aug-09	12.7
40	11.9	24.2	62	0.288	8:41:30	3-Aug-09	12.6
41	12.2	24.2	62	0.3117	8:42:30	3-Aug-09	12.5
42	11.6	24.2	62	0.304	8:43:30	3-Aug-09	12.4
43	11.7	24.3	62	0.2693	8:44:30	3-Aug-09	12.2
44	12.5	24.3	62	0.3458	8:45:30	3-Aug-09	12.2
45	11.8	24.4	62	0.3073	8:46:30	3-Aug-09	12.1
46	11.5	24.4	62	0.2753	8:47:30	3-Aug-09	12.0
47	12	24.5	61	0.3396	8:48:30	3-Aug-09	12.0
48	12.3	24.5	61	0.3111	8:49:30	3-Aug-09	11.9
49	11.6	24.5	61	0.2789	8:50:30	3-Aug-09	11.9
50	11.2	24.5	61	0.3094	8:51:30	3-Aug-09	11.8
51	12	24.6	61	0.3125	8:52:30	3-Aug-09	11.8
52	11.2	24.6	61	0.2906	8:53:30	3-Aug-09	11.7
53	11.8	24.6	61	0.2878	8:54:30	3-Aug-09	11.8
54	11.3	24.7	61	0.2841	8:55:30	3-Aug-09	11.8
55	10.9	24.7	61	0.2758	8:56:30	3-Aug-09	11.7
56	10.8	24.7	61	0.2822	8:57:30	3-Aug-09	11.7
57	11	24.8	61	0.3073	8:58:30	3-Aug-09	11.6
58	11	24.8	61	0.2935	8:59:30	3-Aug-09	11.5
59	10.9	24.9	61	0.318	9:00:30	3-Aug-09	11.5
60	10.5	24.9	61	0.3167	9:01:30	3-Aug-09	11.4
61	10	24.9	61	0.2339	9:02:30	3-Aug-09	11.3
62	10.7	25	60	0.2655	9:03:30	3-Aug-09	11.2
63	10.5	25	60	0.321	9:04:30	3-Aug-09	11.1
64	10.4	25.1	60	0.3021	9:05:30	3-Aug-09	11.0
65	10.1	25.1	60	0.3076	9:06:30	3-Aug-09	10.9
66	9.8	25.1	60	0.3271	9:07:30	3-Aug-09	10.8
67	9.2	25.2	60	0.3165	9:08:30	3-Aug-09	10.6
68	8.6	25.2	60	0.2931	9:09:30	3-Aug-09	10.5
69	9.4	25.2	59	0.3189	9:10:30	3-Aug-09	10.3
70	9.2	25.3	59	0.3115	9:11:30	3-Aug-09	10.2
71	10.1	25.4	59	0.3251	9:12:30	3-Aug-09	10.1
72	9.2	25.4	59	0.2849	9:13:30	3-Aug-09	10.0
73	8.6	25.5	59	0.2794	9:14:30	3-Aug-09	9.9
74	8.8	25.5	59	0.309	9:15:30	3-Aug-09	9.8
75	8.4	25.6	59	0.2816	9:16:30	3-Aug-09	9.6

Appendix I
Ambient Air Dust Monitoring Results - SEAD-12 Removal Action

Seneca Army Depot Activity
Romulus, NY

DataRam 4 Dust Monitor, Serial Number D454

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
1	0	25.9	48	0.3371	9:36:06	3-Aug-09	0.0
2	0	26	50	0.3375	9:37:06	3-Aug-09	0.0
3	0	26	52	0.3375	9:38:06	3-Aug-09	0.0
4	0	26.1	53	0.3375	9:39:06	3-Aug-09	0.0
5	0	26.2	53	0.3375	9:40:06	3-Aug-09	0.0
6	0	26.3	54	0.3375	9:41:06	3-Aug-09	0.0
7	0	26.4	54	0.3375	9:42:06	3-Aug-09	0.0
8	0	26.5	55	0.3375	9:43:06	3-Aug-09	0.0
9	0	26.6	55	0.3375	9:44:06	3-Aug-09	0.0
10	0	26.6	55	0.3375	9:45:06	3-Aug-09	0.0
11	0	26.7	55	0.3375	9:46:06	3-Aug-09	0.0
12	0	26.8	55	0.3375	9:47:06	3-Aug-09	0.0
13	0	26.9	55	0.3375	9:48:06	3-Aug-09	0.0
14	0	27	55	0.3375	9:49:06	3-Aug-09	0.0
15	0	27.1	55	0.3375	9:50:06	3-Aug-09	0.0
16	0	27.2	54	0.3375	9:51:06	3-Aug-09	0.0
17	0	27.3	54	0.3375	9:52:06	3-Aug-09	0.0
18	0	27.4	54	0.3375	9:53:06	3-Aug-09	0.0
19	0	27.4	53	0.3375	9:54:06	3-Aug-09	0.0
20	0	27.5	53	0.3375	9:55:06	3-Aug-09	0.0
21	0	27.6	53	0.3375	9:56:06	3-Aug-09	0.0
22	0	27.7	53	0.3375	9:57:06	3-Aug-09	0.0
23	0	27.7	53	0.3375	9:58:06	3-Aug-09	0.0
24	0	27.8	53	0.3375	9:59:06	3-Aug-09	0.0
25	0	27.9	53	0.3375	10:00:06	3-Aug-09	0.0
26	0	28	53	0.3375	10:01:06	3-Aug-09	0.0
27	0	28.1	53	0.3375	10:02:06	3-Aug-09	0.0
28	0	28.1	52	0.3375	10:03:06	3-Aug-09	0.0
29	0	28.2	52	0.3375	10:04:06	3-Aug-09	0.0
30	0	28.3	52	0.3375	10:05:06	3-Aug-09	0.0
31	0	28.4	52	0.3375	10:06:06	3-Aug-09	0.0
32	0	28.4	52	0.3375	10:07:06	3-Aug-09	0.0
33	0	28.5	52	0.3375	10:08:06	3-Aug-09	0.0
34	0	28.5	52	0.3375	10:09:06	3-Aug-09	0.0
35	0	28.6	52	0.3375	10:10:06	3-Aug-09	0.0
36	0	28.7	52	0.3375	10:11:06	3-Aug-09	0.0
37	0	28.7	52	0.3375	10:12:06	3-Aug-09	0.0
38	0	28.8	52	0.3375	10:13:06	3-Aug-09	0.0
39	0	28.9	52	0.3375	10:14:06	3-Aug-09	0.0
40	0	29	52	0.3375	10:15:06	3-Aug-09	0.0
41	0	29	52	0.3375	10:16:06	3-Aug-09	0.0
42	0	29.1	51	0.3375	10:17:06	3-Aug-09	0.0
43	0	29.1	51	0.3375	10:18:06	3-Aug-09	0.0
44	0	29.2	50	0.3375	10:19:06	3-Aug-09	0.0
45	0	29.3	50	0.3375	10:20:06	3-Aug-09	0.0
46	0	29.4	50	0.3375	10:21:06	3-Aug-09	0.0
47	0	29.4	50	0.3375	10:22:06	3-Aug-09	0.0
48	0	29.5	49	0.3375	10:23:06	3-Aug-09	0.0
49	0	29.6	49	0.3375	10:24:06	3-Aug-09	0.0
50	0	29.6	49	0.3375	10:25:06	3-Aug-09	0.0
51	0	29.6	49	0.3375	10:26:06	3-Aug-09	0.0
52	0	29.7	49	0.3375	10:27:06	3-Aug-09	0.0
53	0	29.8	49	0.3375	10:28:06	3-Aug-09	0.0
54	0	29.8	49	0.3375	10:29:06	3-Aug-09	0.0
55	0	29.9	49	0.3375	10:30:06	3-Aug-09	0.0
56	0	30	49	0.3375	10:31:06	3-Aug-09	0.0
57	0	30.1	49	0.3375	10:32:06	3-Aug-09	0.0
58	0	30.1	49	0.3375	10:33:06	3-Aug-09	0.0
59	0	30.1	48	0.3375	10:34:06	3-Aug-09	0.0
60	0	30.2	48	0.3375	10:35:06	3-Aug-09	0.0
61	0	30.2	48	0.3375	10:36:06	3-Aug-09	0.0
62	0	30.3	48	0.3375	10:37:06	3-Aug-09	0.0
63	0	30.4	48	0.3375	10:38:06	3-Aug-09	0.0
64	0	30.4	48	0.3375	10:39:06	3-Aug-09	0.0
65	0	30.5	48	0.3375	10:40:06	3-Aug-09	0.0
66	0	30.6	47	0.3375	10:41:06	3-Aug-09	0.0
67	0	30.6	47	0.3375	10:42:06	3-Aug-09	0.0
68	0	30.6	47	0.3375	10:43:06	3-Aug-09	0.0
69	0	30.7	47	0.3375	10:44:06	3-Aug-09	0.0
70	0	30.7	47	0.3375	10:45:06	3-Aug-09	0.0
71	0	30.8	47	0.3375	10:46:06	3-Aug-09	0.0
72	0	30.8	47	0.3375	10:47:06	3-Aug-09	0.0
73	0	30.9	47	0.3375	10:48:06	3-Aug-09	0.0
74	0	31	47	0.3375	10:49:06	3-Aug-09	0.0
75	0	31	47	0.3375	10:50:06	3-Aug-09	0.0
76	0	31.1	46	0.3375	10:51:06	3-Aug-09	0.0
77	0	31.1	45	0.3375	10:52:06	3-Aug-09	0.0
78	0	31.2	45	0.3375	10:53:06	3-Aug-09	0.0
79	0	31.2	44	0.3375	10:54:06	3-Aug-09	0.0
80	0	31.3	44	0.3375	10:55:06	3-Aug-09	0.0
81	0	31.4	44	0.3375	10:56:06	3-Aug-09	0.0

DataRam 4 Dust Monitor, Serial Number D464

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
76	8.9	25.6	58	0.2752	9:17:30	3-Aug-09	9.5
77	8.8	25.6	59	0.2921	9:18:30	3-Aug-09	9.4
78	8.7	25.7	58	0.296	9:19:30	3-Aug-09	9.3
79	8.6	25.8	58	0.274	9:20:30	3-Aug-09	9.2
80	8.7	25.8	58	0.2819	9:21:30	3-Aug-09	9.1
81	8.7	25.9	58	0.2864	9:22:30	3-Aug-09	9.0
82	8.5	26	58	0.279	9:23:30	3-Aug-09	8.9
83	8	26	58	0.2808	9:24:30	3-Aug-09	8.8
84	8.1	26.1	57	0.2487	9:25:30	3-Aug-09	8.8
85	8.5	26.1	57	0.2766	9:26:30	3-Aug-09	8.7
86	8.4	26.1	57	0.2975	9:27:30	3-Aug-09	8.7
87	9.1	26.2	57	0.2949	9:28:30	3-Aug-09	8.6
88	7.6	26.2	57	0.277	9:29:30	3-Aug-09	8.5
89	7.7	26.3	56	0.2834	9:30:30	3-Aug-09	8.5
90	8.7	26.4	56	0.3228	9:31:30	3-Aug-09	8.5
91	7.9	26.5	56	0.2769	9:32:30	3-Aug-09	8.4
92	8.7	26.5	56	0.3062	9:33:30	3-Aug-09	8.4
93	8.3	26.5	56	0.334	9:34:30	3-Aug-09	8.4
94	8.3	26.6	55	0.318	9:35:30	3-Aug-09	8.4
95	7.3	26.6	55	0.27	9:36:30	3-Aug-09	8.3
96	7.9	26.7	55	0.2884	9:37:30	3-Aug-09	8.2
97	7.8	26.7	55	0.2808	9:38:30	3-Aug-09	8.2
98	8	26.8	55	0.2893	9:39:30	3-Aug-09	8.1
99	7.8	26.8	55	0.2711	9:40:30	3-Aug-09	8.1
100	7.4	26.9	55	0.2953	9:41:30	3-Aug-09	8.1
101	7.6	26.9	54	0.3253	9:42:30	3-Aug-09	8.0
102	7	27	54	0.3277	9:43:30	3-Aug-09	7.9
103	6.9	27	54	0.2609	9:44:30	3-Aug-09	7.8
104	6.3	27.1	54	0.282	9:45:30	3-Aug-09	7.7
105	6.5	27.1	54	0.2729	9:46:30	3-Aug-09	7.7
106	6.9	27.2	53	0.302	9:47:30	3-Aug-09	7.5
107	7.3	27.2	53	0.3025	9:48:30	3-Aug-09	7.5
108	7.1	27.3	53	0.3082	9:49:30	3-Aug-09	7.4
109	7	27.4	53	0.2876	9:50:30	3-Aug-09	7.3
110	6.5	27.4	52	0.2795	9:51:30	3-Aug-09	7.2
111	6.8	27.5	52	0.3095	9:52:30	3-Aug-09	7.2
112	6.3	27.6	52	0.2941	9:53:30	3-Aug-09	7.1
113	7.1	27.6	52	0.2905	9:54:30	3-Aug-09	7.0
114	7	27.7	52	0.2946	9:55:30	3-Aug-09	7.0
115	6.5	27.7	52	0.3114	9:56:30	3-Aug-09	6.9
116	6.7	27.7	51	0.2549	9:57:30	3-Aug-09	6.8
117	6.5	27.8	51	0.2823	9:58:30	3-Aug-09	6.8
118	7.1	27.9	51	0.3025	9:59:30	3-Aug-09	6.8
119	6.8	28	51	0.2882	10:00:30	3-Aug-09	6.8
120	6.5	28	51	0.2935	10:01:30	3-Aug-09	6.8
121	6.8	28	51	0.2898	10:02:30	3-Aug-09	6.8
122	7.1	28.1	51	0.3132	10:03:30	3-Aug-09	6.8
123	7.7	28.1	51	0.3199	10:04:30	3-Aug-09	6.8
124	7.4	28.2	51	0.2985	10:05:30	3-Aug-09	6.9
125	7.6	28.3	51	0.312	10:06:30	3-Aug-09	6.9
126	6.7	28.3	51	0.27	10:07:30	3-Aug-09	6.9
127	6.6	28.4	50	0.3152	10:08:30	3-Aug-09	6.9
128	6.9	28.4	50	0.273	10:09:30	3-Aug-09	6.9
129	7	28.5	50	0.2967	10:10:30	3-Aug-09	6.9
130	6.5	28.5	50	0.2891	10:11:30	3-Aug-09	6.9
131	5.7	28.6	50	0.2813	10:12:30	3-Aug-09	6.9
132	6.3	28.6	50	0.2747	10:13:30	3-Aug-09	6.8
133	5.6	28.7	50	0.2844	10:14:30	3-Aug-09	6.8
134	6.1	28.8	50	0.2855	10:15:30	3-Aug-09	6.7
135	6	28.9	50	0.265	10:16:30	3-Aug-09	6.7
136	5.6	28.9	49	0.3216	10:17:30	3-Aug-09	6.6
137	6.6	29	49	0.3211	10:18:30	3-Aug-09	6.6
138	6	29.1	49	0.291	10:19:30	3-Aug-09	6.5
139	5.6	29.1	49	0.2889	10:20:30	3-Aug-09	6.4
140	5	29.2	48	0.2585	10:21:30	3-Aug-09	6.2
141	5.6	29.3	48	0.2536	10:22:30	3-Aug-09	6.1
142	6	29.4	48	0.3204	10:23:30	3-Aug-09	6.1
143	5.4	29.4	48	0.2707	10:24:30	3-Aug-09	6.0
144	5.9	29.5	47	0.2992	10:25:30	3-Aug-09	5.9
145	5.8	29.6	48	0.2839	10:26:30	3-Aug-09	5.9
146	6	29.6	47	0.2902	10:27:30	3-Aug-09	5.8
147	5.9	29.7	47	0.2721	10:28:30	3-Aug-09	5.8
148	5.9	29.8	47	0.2778	10:29:30	3-Aug-09	5.8
149	5.6	29.9	47	0.295	10:30:30	3-Aug-09	5.8
150	5.7	29.9	46	0.3004	10:31:30	3-Aug-09	5.8
151	6.9	30	46	0.3405	10:32:30	3-Aug-09	5.8
152	6.7	30.1	46	0.3532	10:33:30	3-Aug-09	5.9
153	6.9	30.2	46	0.2775	10:34:30	3-Aug-09	5.9
154	6.3	30.2	46	0.3105	10:35:30	3-Aug-09	6.0
155	5.6	30.3	46	0.3301	10:36:30	3-Aug-09	6.0
156	5.9	30.4	46	0.2853	10:37:30	3-Aug-09	6.0
157	6.2	30.5	45	0.289	10:38:30	3-Aug-09	6.0
158	5.5	30.5	45	0.2909	10:39:30	3-Aug-09	6.0
159	5.8	30.6	45	0.2927	10:40:30	3-Aug-09	6.0
160	6.1	30.7	45	0.2989	10:41:30	3-Aug-09	6.1
161	5	30.7	45	0.3032	10:42:30	3-Aug-09	6.0
162	5.6	30.7	45	0.2597	10:43:30	3-Aug-09	6.0
163	5.8	30.8	45	0.2715	10:44:30	3-Aug-09	6.0
164	5.9	30.9	44	0.2758	10:45:30	3-Aug-09	6.0
165	6.3	31	44	0.3023	10:46:30	3-Aug-09	6.0
166	6.4	31	44	0.3166	10:47:30	3-Aug-09	6.1
167	5	31.1	44	0.3036	10:48:30	3-Aug-09	5.9
168	5.7	31.1	44	0.3012	10:49:30	3-Aug-09	5.9
169	5.2	31.2	43	0.2924	10:50:30	3-Aug-09	5.8
170	4.7	31.2	43	0.2811	10:51:30	3-Aug-09	5.7
171	5.1	31.3	42	0.3043	10:52:30	3-Aug-09	5.6
172	4.9	31.3	42	0.3406	10:53:30	3-Aug-09	5.6
173	5.1	31.4	42	0.3078	10:54:30	3-Aug-09	5.5
174	4.2	31.5	41	0.2997	10:55:30	3-Aug-09	5.4
175	5.2	31.5	41	0.3122	10:56:30	3-Aug-09	5.4

Appendix I
Ambient Air Dust Monitoring Results - SEAD-12 Removal Action

Seneca Army Depot Activity
Romulus, NY

DataRam 4 Dust Monitor, Serial Number D454

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
82	0	31.4	45	0.3375	10:57:06	3-Aug-09	0.0
83	0	31.5	45	0.3375	10:58:06	3-Aug-09	0.0
84	0	31.6	44	0.3375	10:59:06	3-Aug-09	0.0
85	0	31.6	44	0.3375	11:00:06	3-Aug-09	0.0
86	0	31.7	44	0.3375	11:01:06	3-Aug-09	0.0
87	0	31.7	43	0.3375	11:02:06	3-Aug-09	0.0
88	0	31.8	43	0.3375	11:03:06	3-Aug-09	0.0
89	0	31.9	43	0.3375	11:04:06	3-Aug-09	0.0
90	0	32	43	0.3375	11:05:06	3-Aug-09	0.0
91	0	32.1	43	0.3375	11:06:06	3-Aug-09	0.0
92	0	32.1	43	0.3375	11:07:06	3-Aug-09	0.0
93	0	32.2	42	0.3375	11:08:06	3-Aug-09	0.0
94	0	32.2	42	0.3375	11:09:06	3-Aug-09	0.0
95	0	32.3	42	0.3375	11:10:06	3-Aug-09	0.0
96	0	32.4	42	0.3375	11:11:06	3-Aug-09	0.0
97	0	32.5	42	0.3375	11:12:06	3-Aug-09	0.0
98	0	32.6	42	0.3375	11:13:06	3-Aug-09	0.0
99	0	32.6	42	0.3375	11:14:06	3-Aug-09	0.0
100	0	32.7	42	0.3375	11:15:06	3-Aug-09	0.0
101	0	32.7	42	0.3375	11:16:06	3-Aug-09	0.0
102	0	32.8	41	0.3375	11:17:06	3-Aug-09	0.0
103	0	32.9	41	0.3375	11:18:06	3-Aug-09	0.0
104	0	32.9	41	0.3375	11:19:06	3-Aug-09	0.0
105	0	33	41	0.3375	11:20:06	3-Aug-09	0.0
106	0	33.1	41	0.3375	11:21:06	3-Aug-09	0.0
107	0	33.1	40	0.3375	11:22:06	3-Aug-09	0.0
108	0	33.2	40	0.3375	11:23:06	3-Aug-09	0.0
109	0	33.2	40	0.3375	11:24:06	3-Aug-09	0.0
110	0	33.3	40	0.3375	11:25:06	3-Aug-09	0.0
111	0	33.4	40	0.3375	11:26:06	3-Aug-09	0.0
112	0	33.7	40	0.3375	11:27:06	3-Aug-09	0.0
113	0	34	40	0.3375	11:28:06	3-Aug-09	0.0
114	0	34.3	40	0.3375	11:29:06	3-Aug-09	0.0
115	0	34.5	41	0.3375	11:30:06	3-Aug-09	0.0
116	0	34.8	41	0.3375	11:31:06	3-Aug-09	0.0
117	0	35.2	41	0.3375	11:32:06	3-Aug-09	0.0
118	0	36.3	42	0.3375	11:33:06	3-Aug-09	0.0
119	0	38.3	43	0.3375	11:34:06	3-Aug-09	0.0
120	0	38.6	43	0.3375	11:35:06	3-Aug-09	0.0
121	0	38.8	43	0.3375	11:36:06	3-Aug-09	0.0
122	0	38.9	43	0.3375	11:37:06	3-Aug-09	0.0
123	0	39	43	0.3375	11:38:06	3-Aug-09	0.0
124	0	39.1	43	0.3375	11:39:06	3-Aug-09	0.0
125	0	39.1	43	0.3375	11:40:06	3-Aug-09	0.0
126	0	39.2	43	0.3375	11:41:06	3-Aug-09	0.0
127	0	39.3	43	0.3375	11:42:06	3-Aug-09	0.0
128	0	39.4	42	0.3375	11:43:06	3-Aug-09	0.0
129	0	39.4	42	0.3375	11:44:06	3-Aug-09	0.0
130	0	39.5	41	0.3375	11:45:06	3-Aug-09	0.0
131	0	39.6	41	0.3375	11:46:06	3-Aug-09	0.0
132	0	39.6	41	0.3375	11:47:06	3-Aug-09	0.0
133	0	39.7	41	0.3375	11:48:06	3-Aug-09	0.0
134	0	39.8	41	0.3375	11:49:06	3-Aug-09	0.0
135	0	39.9	40	0.3375	11:50:06	3-Aug-09	0.0
136	0	39.9	40	0.3375	11:51:06	3-Aug-09	0.0
137	0	40	40	0.3375	11:52:06	3-Aug-09	0.0
138	0	40.1	39	0.3375	11:53:06	3-Aug-09	0.0
139	0	40.1	39	0.3375	11:54:06	3-Aug-09	0.0
140	0	40.2	38	0.3375	11:55:06	3-Aug-09	0.0
141	0	40.2	38	0.3375	11:56:06	3-Aug-09	0.0
142	0	40.3	38	0.3375	11:57:06	3-Aug-09	0.0
143	0	40.4	38	0.3375	11:58:06	3-Aug-09	0.0
144	0	40.5	38	0.3375	11:59:06	3-Aug-09	0.0
145	0	40.5	38	0.3375	12:00:06	3-Aug-09	0.0
146	0	40.6	38	0.3375	12:01:06	3-Aug-09	0.0
147	0	40.6	38	0.3375	12:02:06	3-Aug-09	0.0
148	0	40.7	38	0.3375	12:03:06	3-Aug-09	0.0
149	0	40.7	38	0.3375	12:04:06	3-Aug-09	0.0
150	0	40.8	38	0.3375	12:05:06	3-Aug-09	0.0
151	0	40.8	37	0.3375	12:06:06	3-Aug-09	0.0
152	0	40.8	38	0.3375	12:07:06	3-Aug-09	0.0
153	0	40.9	38	0.3375	12:08:06	3-Aug-09	0.0
154	0	40.9	38	0.3375	12:09:06	3-Aug-09	0.0
155	0	41	38	0.3375	12:10:06	3-Aug-09	0.0
156	0	41	38	0.3375	12:11:06	3-Aug-09	0.0
157	0	41	38	0.3375	12:12:06	3-Aug-09	0.0
158	0	41.1	38	0.3375	12:13:06	3-Aug-09	0.0
159	0	41.1	37	0.3375	12:14:06	3-Aug-09	0.0
160	0	41.1	37	0.3375	12:15:06	3-Aug-09	0.0
161	0	41.2	37	0.3375	12:16:06	3-Aug-09	0.0
162	0	41.2	37	0.3375	12:17:06	3-Aug-09	0.0
163	0	41.2	37	0.3375	12:18:06	3-Aug-09	0.0
164	0	41.2	37	0.3375	12:19:06	3-Aug-09	0.0
165	0	41.3	37	0.3375	12:20:06	3-Aug-09	0.0
166	0	41.3	37	0.3375	12:21:06	3-Aug-09	0.0
167	0	41.4	37	0.3375	12:22:06	3-Aug-09	0.0
168	0	41.4	37	0.3375	12:23:06	3-Aug-09	0.0
169	0	41.5	37	0.3375	12:24:06	3-Aug-09	0.0
170	0	41.5	37	0.3375	12:25:06	3-Aug-09	0.0
171	0	41.5	37	0.3375	12:26:06	3-Aug-09	0.0
172	0	41.6	37	0.3375	12:27:06	3-Aug-09	0.0
173	0	41.6	37	0.3375	12:28:06	3-Aug-09	0.0
174	0	41.6	37	0.3375	12:29:06	3-Aug-09	0.0
175	0	41.7	37	0.3375	12:30:06	3-Aug-09	0.0
176	0	41.7	37	0.3375	12:31:06	3-Aug-09	0.0
177	0	41.7	37	0.3375	12:32:06	3-Aug-09	0.0
178	0	41.7	37	0.3375	12:33:06	3-Aug-09	0.0
179	0	41.8	37	0.3375	12:34:06	3-Aug-09	0.0
180	0	41.8	37	0.3375	12:35:06	3-Aug-09	0.0
181	0	41.8	37	0.3375	12:36:06	3-Aug-09	0.0

DataRam 4 Dust Monitor, Serial Number D464

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
176	5.2	31.6	41	0.302	10:57:30	3-Aug-09	5.3
177	4.4	31.6	41	0.3036	10:58:30	3-Aug-09	5.3
178	4.2	31.7	40	0.3105	10:59:30	3-Aug-09	5.2
179	4.7	31.7	40	0.2846	11:00:30	3-Aug-09	5.1
180	5.4	31.7	40	0.3068	11:01:30	3-Aug-09	5.1
181	4.2	31.8	40	0.2746	11:02:30	3-Aug-09	5.0
182	4.5	31.9	40	0.2674	11:03:30	3-Aug-09	4.9
183	5.1	32	40	0.2821	11:04:30	3-Aug-09	4.9
184	5	32	40	0.2727	11:05:30	3-Aug-09	4.8
185	4.7	32.1	39	0.3028	11:06:30	3-Aug-09	4.8
186	4.7	32.1	39	0.3081	11:07:30	3-Aug-09	4.8
187	5.1	32.2	39	0.3053	11:08:30	3-Aug-09	4.8
188	5	32.2	39	0.2679	11:09:30	3-Aug-09	4.8
189	5.5	32.3	39	0.3022	11:10:30	3-Aug-09	4.8
190	4.7	32.4	39	0.2798	11:11:30	3-Aug-09	4.9
191	4.9	32.5	39	0.241	11:12:30	3-Aug-09	4.8
192	4.9	32.5	39	0.2814	11:13:30	3-Aug-09	4.8
193	4.9	32.6	39	0.2752	11:14:30	3-Aug-09	4.8
194	4.9	32.7	39	0.2701	11:15:30	3-Aug-09	4.9
195	4.3	32.7	38	0.2912	11:16:30	3-Aug-09	4.9
196	5.2	32.7	38	0.2958	11:17:30	3-Aug-09	4.9
197	4.9	32.8	38	0.2763	11:18:30	3-Aug-09	4.9
198	4	32.9	39	0.2567	11:19:30	3-Aug-09	4.9
199	4.3	33	38	0.27	11:20:30	3-Aug-09	4.8
200	4.6	33	38	0.2618	11:21:30	3-Aug-09	4.8
201	4.1	33.1	38	0.2721	11:22:30	3-Aug-09	4.8
202	4.5	33.1	38	0.2904	11:23:30	3-Aug-09	4.7
203	4.5	33.2	37	0.294	11:24:30	3-Aug-09	4.7
204	4.7	33.2	37	0.2893	11:25:30	3-Aug-09	4.7
205	4.7	33.2	37	0.2648	11:26:30	3-Aug-09	4.6
206	4.7	33.3	37	0.2644	11:27:30	3-Aug-09	4.6
207	5	33.3	37	0.2585	11:28:30	3-Aug-09	4.6
208	4.7	33.4	37	0.2729	11:29:30	3-Aug-09	4.6
209	4.9	33.4	37	0.301	11:30:30	3-Aug-09	4.6
210	4	33.5	37	0.2763	11:31:30	3-Aug-09	4.6
211	4.4	33.5	36	0.2568	11:32:30	3-Aug-09	4.6
212	4.5	33.5	36	0.2563	11:33:30	3-Aug-09	4.5
213	4.6	33.6	36	0.2828	11:34:30	3-Aug-09	4.5
214	4.3	33.6	36	0.2935	11:35:30	3-Aug-09	4.5
215	4.5	33.6	36	0.2841	11:36:30	3-Aug-09	4.5
216	5	33.7	36	0.2799	11:37:30	3-Aug-09	4.6
217	4.3	33.7	36	0.2882	11:38:30	3-Aug-09	4.6
218	5.5	33.7	36	0.3165	11:39:30	3-Aug-09	4.6
219	5.8	33.8	36	0.2695	11:40:30	3-Aug-09	4.7
220	11.8	33.8	35	0.3062	11:41:30	3-Aug-09	5.2
221	5.3	33.9	35	0.3022	11:42:30	3-Aug-09	5.2
222	4.8	33.9	35	0.2647	11:43:30	3-Aug-09	5.2
223	4.9	34	35	0.2949	11:44:30	3-Aug-09	5.2
224	4.4	34	35	0.2985	11:45:30	3-Aug-09	5.2
225	4.8	34	34	0.2796	11:46:30	3-Aug-09	5.2
226	4.5	34.1	34	0.2739	11:47:30	3-Aug-09	5.2
227	4.1	34.1	34	0.2735	11:48:30	3-Aug-09	5.2
228	4.8	34.2	34	0.279	11:49:30	3-Aug-09	5.2
229	3.9	34.2	34	0.2765	11:50:30	3-Aug-09	5.2
230	4.7	34.2	34	0.2792	11:51:30	3-Aug-09	5.2
231	4.3	34.3	33	0.3095	11:52:30	3-Aug-09	5.2
232	4.1	34.3	33	0.2881	11:53:30	3-Aug-09	5.1
233	4.3	34.4	33	0.2838	11:54:30	3-Aug-09	5.1
234	4.8	34.5	33	0.2699	11:55:30	3-Aug-09	5.1
235	4.2	34.5	33	0.2632	11:56:30	3-Aug-09	5.0
236	4.7	34.5	32	0.2723	11:57:30	3-Aug-09	4.5
237	4.4	34.6	32	0.3027	11:58:30	3-Aug-09	4.5
238	4.8	34.6	32	0.2877	11:59:30	3-Aug-09	4.5
239	4.9	34.7	33	0.2683	12:00:30	3-Aug-09	4.5
240	4.6	34.7	33	0.2653	12:01:30	3-Aug-09	4.5
241	6.3	34.7	33	0.2842	12:02:30	3-Aug-09	4.6
242	4.3	34.8	33	0.2554	12:03:30	3-Aug-09	4.6
243	4.5	34.9	33	0.2449	12:04:30	3-Aug-09	4.6
244	4.3	34.9	33	0.2583	12:05:30	3-Aug-09	4.6
245	3.9	35	32	0.2588	12:06:30	3-Aug-09	4.6
246	4.1	35	32	0.2761	12:07:30	3-Aug-09	4.5
247	4.5	35.1	32	0.2816	12:08:30	3-Aug-09	4.5
248	4.3	35.1	32	0.2961	12:09:30	3-Aug-09	4.6
249	4.5	35.1	32	0.2725	12:10:30	3-Aug-09	4.6
250	5	35.2	31	0.2512	12:11:30	3-Aug-09	4.6
251	4.1	35.2	31	0.2721	12:12:30	3-Aug-09	4.6
252	4.3	35.2	31	0.2656	12:13:30	3-Aug-09	4.6
253	4.5	35.2	31	0.2646	12:14:30	3-Aug-09	4.6
254	5.1	35.2	31	0.2579	12:15:30	3-Aug-09	4.6
255	4.7	35.3	32	0.2623	12:16:30	3-Aug-09	4.6
256	5	35.3	32	0.2783	12:17:30	3-Aug-09	4.6
257	4.4	35.3	31	0.2684	12:18:30	3-Aug-09	4.5
258	5	35.3	32	0.2782	12:19:30	3-Aug-09	4.5
259	4.6	35.3	32	0.2661	12:20:30	3-Aug-09	4.5
260	4.6	35.4	32	0.2653	12:21:30	3-Aug-09	4.5
261	4.6	35.4	31	0.2524	12:22:30	3-Aug-09	4.6
262	4	35.4	32	0.2677	12:23:30	3-Aug-09	4.6
263	4.4	35.4	32	0.2737	12:24:30	3-Aug-09	4.6
264	4.5	35.4	32	0.2619	12:25:30	3-Aug-09	4.6
265	4.7	35.5	31	0.2714	12:26:30	3-Aug-09	4.6
266	4.8	35.5	31	0.2929	12:27:30	3-Aug-09	4.6
267	4.5	35.5	31	0.286	12:28:30	3-Aug-09	4.6
268	4.6	35.5	31	0.2811	12:29:30	3-Aug-09	4.6
269	4.5	35.5	32	0.271	12:30:30	3-Aug-09	4.6
270	4.7	35.5	31	0.2865	12:31:30	3-Aug-09	4.6
271	4.9	35.6	31	0.2707	12:32:30	3-Aug-09	4.6
272	4.5	35.6	31	0.2674	12:33:30	3-Aug-09	4.6
273	4.4	35.6	31	0.2701	12:34:30	3-Aug-09	4.6
274	4	35.6	31	0.2708	12:35:30	3-Aug-09	4.5
275	4.9	35.7	31	0.2675	12:36:30	3-Aug-09	4.5

Appendix I
Ambient Air Dust Monitoring Results - SEAD-12 Removal Action

Seneca Army Depot Activity
Romulus, NY

DataRam 4 Dust Monitor, Serial Number D454

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
182	0	41.9	37	0.3375	12:37:06	3-Aug-09	0.0
183	0	41.9	37	0.3375	12:38:06	3-Aug-09	0.0
184	0	42	37	0.3375	12:39:06	3-Aug-09	0.0
185	0	42	37	0.3375	12:40:06	3-Aug-09	0.0
186	0	42	36	0.3375	12:41:06	3-Aug-09	0.0
187	0	42.1	36	0.3375	12:42:06	3-Aug-09	0.0
188	0	42.1	36	0.3375	12:43:06	3-Aug-09	0.0
189	0	42.1	36	0.3375	12:44:06	3-Aug-09	0.0
190	0	42.2	36	0.3375	12:45:06	3-Aug-09	0.0
191	0	42.2	36	0.3375	12:46:06	3-Aug-09	0.0
192	0	42.3	36	0.3375	12:47:06	3-Aug-09	0.0
193	0	42.3	36	0.3375	12:48:06	3-Aug-09	0.0
194	0	42.3	36	0.3375	12:49:06	3-Aug-09	0.0
195	0	42.4	36	0.3375	12:50:06	3-Aug-09	0.0
196	0	42.5	36	0.3375	12:51:06	3-Aug-09	0.0
197	0	42.5	36	0.3375	12:52:06	3-Aug-09	0.0
198	0	42.6	35	0.3375	12:53:06	3-Aug-09	0.0
199	0	42.6	36	0.3375	12:54:06	3-Aug-09	0.0
200	0	42.7	35	0.3375	12:55:06	3-Aug-09	0.0
201	0	42.7	36	0.3375	12:56:06	3-Aug-09	0.0
202	0	42.7	36	0.3375	12:57:06	3-Aug-09	0.0
203	0	42.7	36	0.3375	12:58:06	3-Aug-09	0.0
204	0	42.8	36	0.3375	12:59:06	3-Aug-09	0.0
205	0	42.8	36	0.3375	13:00:06	3-Aug-09	0.0
206	0	42.8	36	0.3375	13:01:06	3-Aug-09	0.0
207	0	42.9	36	0.3375	13:02:06	3-Aug-09	0.0
208	0	42.9	36	0.3375	13:03:06	3-Aug-09	0.0
209	0	43	36	0.3375	13:04:06	3-Aug-09	0.0
210	0	43	36	0.3375	13:05:06	3-Aug-09	0.0
211	0	43	35	0.3375	13:06:06	3-Aug-09	0.0
212	0	43.1	35	0.3375	13:07:06	3-Aug-09	0.0
213	0	43.1	35	0.3375	13:08:06	3-Aug-09	0.0
214	0	43.1	35	0.3375	13:09:06	3-Aug-09	0.0
215	0	43.2	35	0.3375	13:10:06	3-Aug-09	0.0
216	0	43.2	35	0.3375	13:11:06	3-Aug-09	0.0
217	0	43.3	35	0.3375	13:12:06	3-Aug-09	0.0
218	0	43.3	35	0.3375	13:13:06	3-Aug-09	0.0
219	0	43.4	35	0.3375	13:14:06	3-Aug-09	0.0
220	0	43.4	35	0.3375	13:15:06	3-Aug-09	0.0
221	0	43.5	35	0.3375	13:16:06	3-Aug-09	0.0
222	0	43.6	35	0.3375	13:17:06	3-Aug-09	0.0
223	0	43.6	35	0.3375	13:18:06	3-Aug-09	0.0
224	0	43.7	35	0.3375	13:19:06	3-Aug-09	0.0
225	0	43.7	35	0.3375	13:20:06	3-Aug-09	0.0
226	0	43.8	35	0.3375	13:21:06	3-Aug-09	0.0
227	0	43.8	35	0.3375	13:22:06	3-Aug-09	0.0
228	0	43.9	35	0.3375	13:23:06	3-Aug-09	0.0
229	0	44	35	0.3375	13:24:06	3-Aug-09	0.0
230	0	44	35	0.3375	13:25:06	3-Aug-09	0.0
231	0	44.1	35	0.3375	13:26:06	3-Aug-09	0.0
232	0	44.1	35	0.3375	13:27:06	3-Aug-09	0.0
233	0	44.2	35	0.3375	13:28:06	3-Aug-09	0.0
234	0	44.2	35	0.3375	13:29:06	3-Aug-09	0.0
235	0	44.3	34	0.3375	13:30:06	3-Aug-09	0.0
236	0	44.3	34	0.3375	13:31:06	3-Aug-09	0.0
237	0	44.4	34	0.3375	13:32:06	3-Aug-09	0.0
238	0	44.5	34	0.3375	13:33:06	3-Aug-09	0.0
239	0	44.5	34	0.3375	13:34:06	3-Aug-09	0.0
240	0	44.5	34	0.3375	13:35:06	3-Aug-09	0.0
241	0	44.5	33	0.3375	13:36:06	3-Aug-09	0.0
242	0	44.6	33	0.3375	13:37:06	3-Aug-09	0.0
243	0	44.6	33	0.3375	13:38:06	3-Aug-09	0.0
244	0	44.7	33	0.3375	13:39:06	3-Aug-09	0.0
245	0	44.7	34	0.3375	13:40:06	3-Aug-09	0.0
246	0	44.7	33	0.3375	13:41:06	3-Aug-09	0.0
247	0	44.8	33	0.3375	13:42:06	3-Aug-09	0.0
248	0	44.9	33	0.3375	13:43:06	3-Aug-09	0.0
249	0	45	33	0.3375	13:44:06	3-Aug-09	0.0
250	0	45	33	0.3375	13:45:06	3-Aug-09	0.0
251	0	45.1	33	0.3375	13:46:06	3-Aug-09	0.0
252	0	45.1	33	0.3375	13:47:06	3-Aug-09	0.0
253	0	45.1	33	0.3375	13:48:06	3-Aug-09	0.0
254	0	45.2	33	0.3375	13:49:06	3-Aug-09	0.0
255	0	45.2	33	0.3375	13:50:06	3-Aug-09	0.0
256	0	45.3	33	0.3375	13:51:06	3-Aug-09	0.0
257	0	45.3	33	0.3375	13:52:06	3-Aug-09	0.0
258	0	45.4	33	0.3375	13:53:06	3-Aug-09	0.0
259	0	45.4	33	0.3375	13:54:06	3-Aug-09	0.0
260	0	45.5	33	0.3375	13:55:06	3-Aug-09	0.0
261	0	45.5	33	0.3375	13:56:06	3-Aug-09	0.0
262	0	45.5	33	0.3375	13:57:06	3-Aug-09	0.0
263	0	45.5	32	0.3375	13:58:06	3-Aug-09	0.0
264	0	45.6	32	0.3375	13:59:06	3-Aug-09	0.0
265	0	45.6	32	0.3375	14:00:06	3-Aug-09	0.0
266	0	45.6	32	0.3375	14:01:06	3-Aug-09	0.0
267	0	45.6	32	0.3375	14:02:06	3-Aug-09	0.0
268	0	45.7	32	0.3375	14:03:06	3-Aug-09	0.0
269	0	45.7	32	0.3375	14:04:06	3-Aug-09	0.0
270	0	45.7	32	0.3375	14:05:06	3-Aug-09	0.0
271	0	44.7	31	0.3375	14:06:06	3-Aug-09	0.0
272	0	44.3	31	0.3375	14:07:06	3-Aug-09	0.0
273	0	43.9	30	0.3375	14:08:06	3-Aug-09	0.0
274	0	43.9	30	0.3375	14:09:06	3-Aug-09	0.0
275	0	43.9	30	0.3375	14:10:06	3-Aug-09	0.0
276	0	43.9	31	0.3375	14:11:06	3-Aug-09	0.0
277	0	43.7	30	0.3375	14:12:06	3-Aug-09	0.0
278	0	43.7	30	0.3375	14:13:06	3-Aug-09	0.0
279	0	43.7	30	0.3375	14:14:06	3-Aug-09	0.0
280	0	43.6	30	0.3375	14:15:06	3-Aug-09	0.0
281	0	43.6	30	0.3375	14:16:06	3-Aug-09	0.0

DataRam 4 Dust Monitor, Serial Number D464

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
276	4.6	35.7	31	0.2631	12:37:30	3-Aug-09	4.5
277	4.8	35.7	31	0.2665	12:38:30	3-Aug-09	4.6
278	4.7	35.7	31	0.2611	12:39:30	3-Aug-09	4.6
279	4.3	35.7	31	0.2581	12:40:30	3-Aug-09	4.6
280	4.5	35.8	31	0.2577	12:41:30	3-Aug-09	4.6
281	4.2	35.8	31	0.2717	12:42:30	3-Aug-09	4.6
282	5.7	35.8	31	0.2792	12:43:30	3-Aug-09	4.6
283	4.3	35.9	31	0.2643	12:44:30	3-Aug-09	4.6
284	4.1	35.9	31	0.2498	12:45:30	3-Aug-09	4.6
285	4.3	35.9	31	0.2756	12:46:30	3-Aug-09	4.6
286	4.8	35.9	30	0.2723	12:47:30	3-Aug-09	4.6
287	4.6	36	30	0.2734	12:48:30	3-Aug-09	4.5
288	4.2	36	30	0.2482	12:49:30	3-Aug-09	4.5
289	4.5	36	30	0.2411	12:50:30	3-Aug-09	4.5
290	4.7	36.1	30	0.2651	12:51:30	3-Aug-09	4.6
291	4.8	36.1	30	0.2863	12:52:30	3-Aug-09	4.6
292	4.3	36.1	30	0.2849	12:53:30	3-Aug-09	4.6
293	3.9	36.1	30	0.2972	12:54:30	3-Aug-09	4.5
294	4.3	36.1	30	0.2819	12:55:30	3-Aug-09	4.5
295	4.4	36.2	30	0.2664	12:56:30	3-Aug-09	4.5
296	5	36.2	30	0.2522	12:57:30	3-Aug-09	4.5
297	5	36.2	30	0.2894	12:58:30	3-Aug-09	4.6
298	4.1	36.2	30	0.2612	12:59:30	3-Aug-09	4.5
299	4.1	36.2	30	0.2667	13:00:30	3-Aug-09	4.4
300	4.6	36.2	30	0.2706	13:01:30	3-Aug-09	4.5
301	4.6	36.2	30	0.2717	13:02:30	3-Aug-09	4.5
302	4.4	36.2	30	0.2589	13:03:30	3-Aug-09	4.5
303	4.3	36.2	30	0.2491	13:04:30	3-Aug-09	4.5
304	4.6	36.3	31	0.2478	13:05:30	3-Aug-09	4.5
305	4.9	36.3	30	0.2755	13:06:30	3-Aug-09	4.5
306	4.9	36.3	31	0.2653	13:07:30	3-Aug-09	4.5
307	4.3	36.3	31	0.2715	13:08:30	3-Aug-09	4.5
308	4.9	36.4	30	0.2621	13:09:30	3-Aug-09	4.5
309	4.3	36.4	31	0.2861	13:10:30	3-Aug-09	4.5
310	4.7	36.4	30	0.2604	13:11:30	3-Aug-09	4.6
311	4.4	36.5	30	0.2786	13:12:30	3-Aug-09	4.6
312	4.5	36.5	30	0.2845	13:13:30	3-Aug-09	4.5
313	5	36.5	30	0.2674	13:14:30	3-Aug-09	4.5
314	4.7	36.5	30	0.2767	13:15:30	3-Aug-09	4.6
315	4.9	36.6	30	0.2963	13:16:30	3-Aug-09	4.6
316	5.1	36.6	30	0.2756	13:17:30	3-Aug-09	4.7
317	5.2	36.6	30	0.2576	13:18:30	3-Aug-09	4.7
318	4.4	36.7	30	0.2676	13:19:30	3-Aug-09	4.7
319	4.6	36.7	30	0.2798	13:20:30	3-Aug-09	4.7
320	4.4	36.7	30	0.2719	13:21:30	3-Aug-09	4.7
321	4.6	36.7	30	0.2856	13:22:30	3-Aug-09	4.7
322	4.7	36.8	30	0.2713	13:23:30	3-Aug-09	4.7
323	5.2	36.8	29	0.2781	13:24:30	3-Aug-09	4.7
324	4.8	36.8	30	0.2757	13:25:30	3-Aug-09	4.7
325	4.5	36.9	30	0.2564	13:26:30	3-Aug-09	4.7
326	4.6	36.9	30	0.2596	13:27:30	3-Aug-09	4.7
327	4.6	36.9	30	0.2613	13:28:30	3-Aug-09	4.7
328	4.5	37	30	0.2773	13:29:30	3-Aug-09	4.7
329	4.8	37	30	0.2666	13:30:30	3-Aug-09	4.7
330	4.2	37	30	0.2643	13:31:30	3-Aug-09	4.7
331	4.6	37	29	0.2745	13:32:30	3-Aug-09	4.7
332	3.9	37.1	29	0.2597	13:33:30	3-Aug-09	4.6
333	4.2	37.1	29	0.2509	13:34:30	3-Aug-09	4.5
334	5	37.1	29	0.2505	13:35:30	3-Aug-09	4.6
335	4.4	37.1	29	0.256	13:36:30	3-Aug-09	4.6
336	4.3	37.1	29	0.2583	13:37:30	3-Aug-09	4.6
337	4.1	37.2	29	0.2663	13:38:30	3-Aug-09	4.5
338	5	37.2	29	0.2518	13:39:30	3-Aug-09	4.5
339	4.5	37.2	29	0.284	13:40:30	3-Aug-09	4.5
340	4.6	37.2	29	0.2904	13:41:30	3-Aug-09	4.5
341	4.4	37.3	29	0.2887	13:42:30	3-Aug-09	4.5
342	4.3	37.3	29	0.2735	13:43:30	3-Aug-09	4.5
343	4	37.3	29	0.2823	13:44:30	3-Aug-09	4.4
344	4.6	37.3	29	0.2823	13:45:30	3-Aug-09	4.4
345	4.4	37.4	29	0.2955	13:46:30	3-Aug-09	4.4
346	4.8	37.4	29	0.258	13:47:30	3-Aug-09	4.4
347	4.5	37.4	29	0.2544	13:48:30	3-Aug-09	4.4
348	4.4	37.4	29	0.258	13:49:30	3-Aug-09	4.5
349	4.7	37.5	29	0.2636	13:50:30	3-Aug-09	4.5
350	3.9	37.5	29	0.2788	13:51:30	3-Aug-09	4.4
351	4.5	37.5	29	0.277	13:52:30	3-Aug-09	4.4
352	4.2	37.5	29	0.2461	13:53:30	3-Aug-09	4.4
353	4.7	37.5	29	0.2795	13:54:30	3-Aug-09	4.5
354	4.8	37.5	29	0.2785	13:55:30	3-Aug-09	4.5
355	4.1	37.6	29	0.2681	13:56:30	3-Aug-09	4.4
356	4.5	37.6	28	0.2585	13:57:30	3-Aug-09	4.4
357	4.3	37.6	28	0.2542	13:58:30	3-Aug-09	4.4
358	4.8	37.6	28	0.2539	13:59:30	3-Aug-09	4.5
359	4.5	37.6	28	0.2814	14:00:30	3-Aug-09	4.5
360	4.5	37.6	28	0.2602	14:01:30	3-Aug-09	4.5
361	5	37.6	28	0.2732	14:02:30	3-Aug-09	4.5
362	3.9	37.7	28	0.2833	14:03:30	3-Aug-09	4.5
363	4.5	37.7	28	0.261	14:04:30	3-Aug-09	4.5
364	4.8	37.7	28	0.2493	14:05:30	3-Aug-09	4.5
365	4.1	37.7	28	0.254	14:06:30	3-Aug-09	4.4
366	4.4	37.7	28	0.2483	14:07:30	3-Aug-09	4.5
367	4.2	37.7	28	0.2614	14:08:30	3-Aug-09	4.5
368	4.1	37.7	28	0.2782	14:09:30	3-Aug-09	4.5
369	5.3	37.8	28	0.2658	14:10:30	3-Aug-09	4.5
370	5	37.7	28	0.2594	14:11:30	3-Aug-09	4.5
371	7.8	37.8	28	0.2727	14:12:30	3-Aug-09	4.7
372	5.4	37.7	28	0.2626	14:13:30	3-Aug-09	4.8
373	4.4	37.8	28	0.2699	14:14:30	3-Aug-09	4.8
374	5.1	37.8	28	0.2871	14:15:30	3-Aug-09	4.8
375	4.9	37.8	28	0.2922	14:16:30	3-Aug-09	4.8

Appendix I
Ambient Air Dust Monitoring Results - SEAD-12 Removal Action

Seneca Army Depot Activity
Romulus, NY

DataRam 4 Dust Monitor, Serial Number D454

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
282	0	43.8	30	0.3375	14:17:06	3-Aug-09	0.0
283	0	43.8	29	0.3375	14:18:06	3-Aug-09	0.0
284	0	43.6	29	0.3375	14:19:06	3-Aug-09	0.0
285	0	43.9	30	0.3375	14:20:06	3-Aug-09	0.0
286	0	43.8	29	0.3375	14:21:06	3-Aug-09	0.0
287	0	43.7	30	0.3375	14:22:06	3-Aug-09	0.0
288	0	43.8	30	0.3375	14:23:06	3-Aug-09	0.0
289	0	43.7	30	0.3375	14:24:06	3-Aug-09	0.0
290	0	43.8	30	0.3375	14:25:06	3-Aug-09	0.0
291	0	43.8	29	0.3375	14:26:06	3-Aug-09	0.0
292	0	43.7	29	0.3375	14:27:06	3-Aug-09	0.0
293	0	43.9	29	0.3375	14:28:06	3-Aug-09	0.0
294	0	43.7	29	0.3375	14:29:06	3-Aug-09	0.0
295	0	43.9	29	0.3375	14:30:06	3-Aug-09	0.0
296	0	43.7	29	0.3375	14:31:06	3-Aug-09	0.0
297	0	43.8	29	0.3375	14:32:06	3-Aug-09	0.0
298	0	43.7	29	0.3375	14:33:06	3-Aug-09	0.0
299	0	43.6	29	0.3375	14:34:06	3-Aug-09	0.0
300	0	43.7	29	0.3375	14:35:06	3-Aug-09	0.0
301	0	43.5	29	0.3375	14:36:06	3-Aug-09	0.0
302	0	43.7	30	0.3375	14:37:06	3-Aug-09	0.0
303	0	43.4	30	0.3375	14:38:06	3-Aug-09	0.0
304	0	43.6	30	0.3375	14:39:06	3-Aug-09	0.0
305	0	43.5	30	0.3375	14:40:06	3-Aug-09	0.0
306	0	43.5	30	0.3375	14:41:06	3-Aug-09	0.0
307	0	43.5	30	0.3375	14:42:06	3-Aug-09	0.0
308	0	43.4	29	0.3375	14:43:06	3-Aug-09	0.0
309	0	43.5	29	0.3375	14:44:06	3-Aug-09	0.0
310	0	43.3	29	0.3375	14:45:06	3-Aug-09	0.0
311	0	43.5	29	0.3375	14:46:06	3-Aug-09	0.0
312	0	43.4	29	0.3375	14:47:06	3-Aug-09	0.0
313	0	43.4	29	0.3375	14:48:06	3-Aug-09	0.0
314	0	43.5	29	0.3375	14:49:06	3-Aug-09	0.0
315	0	43.3	30	0.3375	14:50:06	3-Aug-09	0.0
316	0	43.6	30	0.3375	14:51:06	3-Aug-09	0.0
317	0	43.3	29	0.3375	14:52:06	3-Aug-09	0.0
318	0	43.5	29	0.3375	14:53:06	3-Aug-09	0.0
319	0	43.4	29	0.3375	14:54:06	3-Aug-09	0.0
320	0	43.4	29	0.3375	14:55:06	3-Aug-09	0.0
321	0	43.5	29	0.3375	14:56:06	3-Aug-09	0.0
322	0	43.4	29	0.3375	14:57:06	3-Aug-09	0.0
323	0	43.5	29	0.3375	14:58:06	3-Aug-09	0.0
324	0	43.3	29	0.3375	14:59:06	3-Aug-09	0.0
325	0	43.5	29	0.3375	15:00:06	3-Aug-09	0.0
326	0	43.4	29	0.3375	15:01:06	3-Aug-09	0.0
327	0	43.5	29	0.3375	15:02:06	3-Aug-09	0.0
328	0	43.4	29	0.3375	15:03:06	3-Aug-09	0.0
329	0	43.4	29	0.3375	15:04:06	3-Aug-09	0.0
330	0	43.5	29	0.3375	15:05:06	3-Aug-09	0.0
331	0	43.3	29	0.3375	15:06:06	3-Aug-09	0.0
332	0	43.5	29	0.3375	15:07:06	3-Aug-09	0.0
333	0	43.3	29	0.3375	15:08:06	3-Aug-09	0.0
334	0	43.4	29	0.3375	15:09:06	3-Aug-09	0.0
335	0	43.3	29	0.3375	15:10:06	3-Aug-09	0.0
336	0	43.3	29	0.3375	15:11:06	3-Aug-09	0.0
337	0	43.4	29	0.3375	15:12:06	3-Aug-09	0.0
338	0	43.2	29	0.3375	15:13:06	3-Aug-09	0.0
339	0	43.4	29	0.3375	15:14:06	3-Aug-09	0.0
340	0	43.1	29	0.3375	15:15:06	3-Aug-09	0.0
341	0	43.4	29	0.3375	15:16:06	3-Aug-09	0.0
342	0	43.2	29	0.3375	15:17:06	3-Aug-09	0.0
343	0	43.2	30	0.3375	15:18:06	3-Aug-09	0.0
344	0	43.2	30	0.3375	15:19:06	3-Aug-09	0.0
345	0	43.1	30	0.3375	15:20:06	3-Aug-09	0.0
346	0	43.2	30	0.3375	15:21:06	3-Aug-09	0.0
347	0	43	30	0.3375	15:22:06	3-Aug-09	0.0
348	0	43.2	30	0.3375	15:23:06	3-Aug-09	0.0
349	0	43.2	30	0.3375	15:24:06	3-Aug-09	0.0
350	0	43.2	30	0.3375	15:25:06	3-Aug-09	0.0
351	0	43.5	30	0.3375	15:26:06	3-Aug-09	0.0
352	0	43.3	30	0.3375	15:27:06	3-Aug-09	0.0
353	0	43.3	30	0.3375	15:28:06	3-Aug-09	0.0
354	0	43.3	30	0.3375	15:29:06	3-Aug-09	0.0
355	0	43.7	30	0.3375	15:30:06	3-Aug-09	0.0
356	0	43.9	30	0.3375	15:31:06	3-Aug-09	0.0
357	0	44	30	0.3375	15:32:06	3-Aug-09	0.0
358	0	43.8	30	0.3375	15:33:06	3-Aug-09	0.0
359	0	44.1	30	0.3375	15:34:06	3-Aug-09	0.0
360	0	44.1	31	0.3375	15:35:06	3-Aug-09	0.0
361	0	44.2	31	0.3375	15:36:06	3-Aug-09	0.0
362	0	44.1	31	0.3375	15:37:06	3-Aug-09	0.0
363	0	44	31	0.3375	15:38:06	3-Aug-09	0.0
364	0	44.1	31	0.3375	15:39:06	3-Aug-09	0.0
365	0	43.9	31	0.3375	15:40:06	3-Aug-09	0.0
366	0	44.1	31	0.3375	15:41:06	3-Aug-09	0.0
367	0	44	31	0.3375	15:42:06	3-Aug-09	0.0
368	0	44.2	31	0.3375	15:43:06	3-Aug-09	0.0
369	0	44	31	0.3375	15:44:06	3-Aug-09	0.0
370	0	44	32	0.3375	15:45:06	3-Aug-09	0.0
371	0	44.1	32	0.3375	15:46:06	3-Aug-09	0.0
372	0	44.2	32	0.3375	15:47:06	3-Aug-09	0.0
373	0	44.3	32	0.3375	15:48:06	3-Aug-09	0.0
374	0	44.1	32	0.3375	15:49:06	3-Aug-09	0.0
375	0	44.4	32	0.3375	15:50:06	3-Aug-09	0.0
376	0	44.7	33	0.3375	15:51:06	3-Aug-09	0.0
377	0	44.6	32	0.3375	15:52:06	3-Aug-09	0.0
378	0	44.6	33	0.3375	15:53:06	3-Aug-09	0.0
379	0	44.6	33	0.3375	15:54:06	3-Aug-09	0.0
380	0	44.6	33	0.3375	15:55:06	3-Aug-09	0.0
381	0	44.6	33	0.3375	15:56:06	3-Aug-09	0.0

DataRam 4 Dust Monitor, Serial Number D464

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
376	4.5	37.8	28	0.2914	14:17:30	3-Aug-09	4.8
377	4.7	37.8	27	0.2902	14:18:30	3-Aug-09	4.8
378	4.5	37.8	27	0.2829	14:19:30	3-Aug-09	4.9
379	4.2	37.8	27	0.2654	14:20:30	3-Aug-09	4.8
380	3.9	37.8	27	0.2563	14:21:30	3-Aug-09	4.8
381	4.4	37.8	27	0.2503	14:22:30	3-Aug-09	4.8
382	4.4	37.8	27	0.2686	14:23:30	3-Aug-09	4.8
383	5.2	37.8	27	0.2742	14:24:30	3-Aug-09	4.9
384	5.2	37.8	27	0.253	14:25:30	3-Aug-09	4.9
385	4.4	37.9	27	0.2728	14:26:30	3-Aug-09	4.9
386	4.7	37.8	27	0.2665	14:27:30	3-Aug-09	4.9
387	4.6	37.8	27	0.2421	14:28:30	3-Aug-09	4.7
388	5	37.8	27	0.24	14:29:30	3-Aug-09	4.6
389	4.8	37.8	27	0.2577	14:30:30	3-Aug-09	4.7
390	5.5	37.7	27	0.2482	14:31:30	3-Aug-09	4.7
391	5.3	37.7	27	0.2583	14:32:30	3-Aug-09	4.7
392	4.9	37.6	27	0.2523	14:33:30	3-Aug-09	4.7
393	4.6	37.6	27	0.2469	14:34:30	3-Aug-09	4.7
394	4.2	37.6	27	0.2398	14:35:30	3-Aug-09	4.7
395	4.7	37.5	27	0.2562	14:36:30	3-Aug-09	4.7
396	4.5	37.5	27	0.2713	14:37:30	3-Aug-09	4.8
397	5	37.5	28	0.2784	14:38:30	3-Aug-09	4.8
398	4.8	37.5	28	0.2691	14:39:30	3-Aug-09	4.8
399	4.4	37.4	28	0.2549	14:40:30	3-Aug-09	4.8
400	4.5	37.4	28	0.2586	14:41:30	3-Aug-09	4.7
401	4.8	37.3	28	0.2686	14:42:30	3-Aug-09	4.8
402	5	37.3	28	0.2808	14:43:30	3-Aug-09	4.8
403	4.7	37.3	27	0.2741	14:44:30	3-Aug-09	4.8
404	4.4	37.3	27	0.2596	14:45:30	3-Aug-09	4.8
405	4.7	37.3	27	0.2547	14:46:30	3-Aug-09	4.8
406	5.3	37.3	28	0.2586	14:47:30	3-Aug-09	4.7
407	5.3	37.3	28	0.2683	14:48:30	3-Aug-09	4.7
408	5.3	37.3	27	0.2645	14:49:30	3-Aug-09	4.8
409	5.2	37.3	28	0.27	14:50:30	3-Aug-09	4.8
410	4.7	37.3	28	0.2868	14:51:30	3-Aug-09	4.8
411	5	37.4	28	0.2724	14:52:30	3-Aug-09	4.9
412	5.1	37.3	28	0.2472	14:53:30	3-Aug-09	4.9
413	4.9	37.3	28	0.2409	14:54:30	3-Aug-09	4.9
414	4.8	37.3	28	0.2514	14:55:30	3-Aug-09	4.9
415	5.4	37.3	28	0.2477	14:56:30	3-Aug-09	4.9
416	5.4	37.4	28	0.2406	14:57:30	3-Aug-09	5.0
417	5.1	37.4	28	0.2434	14:58:30	3-Aug-09	5.0
418	4.9	37.4	28	0.255	14:59:30	3-Aug-09	5.0
419	5.2	37.4	28	0.2541	15:00:30	3-Aug-09	5.0
420	5.1	37.4	27	0.2404	15:01:30	3-Aug-09	5.1
421	5	37.4	28	0.2497	15:02:30	3-Aug-09	5.1
422	4.9	37.4	28	0.2513	15:03:30	3-Aug-09	5.1
423	6	37.4	28	0.2442	15:04:30	3-Aug-09	5.1
424	5.5	37.4	28	0.2602	15:05:30	3-Aug-09	5.1
425	5.3	37.4	28	0.2479	15:06:30	3-Aug-09	5.1
426	4.8	37.4	28	0.2449	15:07:30	3-Aug-09	5.2
427	5.3	37.4	28	0.2531	15:08:30	3-Aug-09	5.2
428	5	37.5	28	0.2597	15:09:30	3-Aug-09	5.2
429	4.8	37.4	28	0.2524	15:10:30	3-Aug-09	5.2
430	5.7	37.5	28	0.2457	15:11:30	3-Aug-09	5.2
431	5.2	37.5	28	0.2557	15:12:30	3-Aug-09	5.2
432	5.6	37.5	27	0.251	15:13:30	3-Aug-09	5.2
433	5.7	37.5	27	0.2503	15:14:30	3-Aug-09	5.3
434	5.6	37.5	28	0.266	15:15:30	3-Aug-09	5.3
435	5.1	37.5	28	0.2529	15:16:30	3-Aug-09	5.3
436	5.2	37.5	28	0.24	15:17:30	3-Aug-09	5.3
437	5	37.5	28	0.2581	15:18:30	3-Aug-09	5.3
438	5.2	37.5	28	0.2331	15:19:30	3-Aug-09	5.3
439	5.1	37.5	28	0.2376	15:20:30	3-Aug-09	5.3
440	5.2	37.5	28	0.2299	15:21:30	3-Aug-09	5.2
441	5.9	37.4	28	0.2675	15:22:30	3-Aug-09	5.3
442	5.5	37.4	28	0.2649	15:23:30	3-Aug-09	5.3
443	5.9	37.4	28	0.2381	15:24:30	3-Aug-09	5.4
444	5.1	37.4	28	0.243	15:25:30	3-Aug-09	5.4
445	5.7	37.3	28	0.2583	15:26:30	3-Aug-09	5.4
446	5.4	37.3	28	0.2385	15:27:30	3-Aug-09	5.4
447	5.5	37.3	28	0.2599	15:28:30	3-Aug-09	5.4
448	5.6	37.3	28	0.2626	15:29:30	3-Aug-09	5.4
449	5.2	37.3	28	0.2516	15:30:30	3-Aug-09	5.4
450	5	37.2	28	0.2293	15:31:30	3-Aug-09	5.4
451	5.2	37.2	28	0.2456	15:32:30	3-Aug-09	5.4
452	5.6	37.2	28	0.26	15:33:30	3-Aug-09	5.4
453	5.9	37.2	28	0.2492	15:34:30	3-Aug-09	5.4
454	5	37.2	28	0.2549	15:35:30	3-Aug-09	5.4
455	5.8	37.2	28	0.2362	15:36:30	3-Aug-09	5.5
456	5.7	37.2	28	0.2463	15:37:30	3-Aug-09	5.5
457	4.9	37.2	28	0.2469	15:38:30	3-Aug-09	5.4
458	5.5	37.1	28	0.2445	15:39:30	3-Aug-09	5.4
459	5.9	37.1	28	0.2403	15:40:30	3-Aug-09	5.4
460	5.8	37.1	28	0.2382	15:41:30	3-Aug-09	5.5
461	5.2	37.1	28	0.2477	15:42:30	3-Aug-09	5.5
462	5.8	37.1	28	0.2467	15:43:30	3-Aug-09	5.5
463	5.4	37.1	28	0.2523	15:44:30	3-Aug-09	5.5
464	5.5	37.1	28	0.2396	15:45:30	3-Aug-09	5.5
465	6.1	37.1	28	0.2284	15:46:30	3-Aug-09	5.5
466	5.7	37	28	0.251	15:47:30	3-Aug-09	5.6
467	5.5	37	28	0.2325	15:48:30	3-Aug-09	5.6
468	5.6	37	28	0.2331	15:49:30	3-Aug-09	5.6
469	5	37	28	0.2398	15:50:30	3-Aug-09	5.5
470	5.4	37	28	0.2445	15:51:30	3-Aug-09	5.6
471	5.2	37	28	0.2367	15:52:30	3-Aug-09	5.5
472	5.4	37	28	0.2219	15:53:30	3-Aug-09	5.5
473	5.6	36.9	28	0.2447	15:54:30	3-Aug-09	5.5
474	5.9	36.9	29	0.2391	15:55:30	3-Aug-09	5.6
475	5.7	36.9	29	0.237	15:56:30	3-Aug-09	5.6

Appendix I
Ambient Air Dust Monitoring Results - SEAD-12 Removal Action

Seneca Army Depot Activity
Romulus, NY

DataRam 4 Dust Monitor, Serial Number D454

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
382	0	44.6	33	0.3375	15:57:06	3-Aug-09	0.0
383	0	44.6	33	0.3375	15:58:06	3-Aug-09	0.0
384	0	44.6	33	0.3375	15:59:06	3-Aug-09	0.0
385	0	44.6	33	0.3375	16:00:06	3-Aug-09	0.0
386	0	44.6	32	0.3375	16:01:06	3-Aug-09	0.0
387	0	44.6	32	0.3375	16:02:06	3-Aug-09	0.0
388	0	44.6	32	0.3375	16:03:06	3-Aug-09	0.0
389	0	44.6	32	0.3375	16:04:06	3-Aug-09	0.0
390	0	44.6	32	0.3375	16:05:06	3-Aug-09	0.0
391	0	44.6	32	0.3375	16:06:06	3-Aug-09	0.0
392	0	44.5	32	0.3375	16:07:06	3-Aug-09	0.0
393	0	44.5	32	0.3375	16:08:06	3-Aug-09	0.0
394	0	44.5	33	0.3375	16:09:06	3-Aug-09	0.0
395	0	44.5	32	0.3375	16:10:06	3-Aug-09	0.0
396	0	44.5	32	0.3375	16:11:06	3-Aug-09	0.0
397	0	44.5	32	0.3375	16:12:06	3-Aug-09	0.0
398	0	44.5	32	0.3375	16:13:06	3-Aug-09	0.0
399	0	44.5	32	0.3375	16:14:06	3-Aug-09	0.0
400	0	44.5	33	0.3375	16:15:06	3-Aug-09	0.0
401	0	44.5	32	0.3375	16:16:06	3-Aug-09	0.0
402	0	44.5	32	0.3375	16:17:06	3-Aug-09	0.0
403	0	44.5	32	0.3375	16:18:06	3-Aug-09	0.0
404	0	44.5	33	0.3375	16:19:06	3-Aug-09	0.0
405	0	44.5	33	0.3375	16:20:06	3-Aug-09	0.0
406	0	44.5	33	0.3375	16:21:06	3-Aug-09	0.0
407	0	44.5	33	0.3375	16:22:06	3-Aug-09	0.0
408	0	44.5	32	0.3375	16:23:06	3-Aug-09	0.0
409	0	44.5	32	0.3375	16:24:06	3-Aug-09	0.0
410	0	44.5	32	0.3375	16:25:06	3-Aug-09	0.0
411	0	44.5	32	0.3375	16:26:06	3-Aug-09	0.0
412	0	44.6	32	0.3375	16:27:06	3-Aug-09	0.0
413	0	44.5	33	0.3375	16:28:06	3-Aug-09	0.0
414	0	44.5	32	0.3375	16:29:06	3-Aug-09	0.0
415	0	44.6	32	0.3375	16:30:06	3-Aug-09	0.0
416	0	44.5	32	0.3375	16:31:06	3-Aug-09	0.0
417	0	44.5	32	0.3375	16:32:06	3-Aug-09	0.0
418	0	44.5	32	0.3375	16:33:06	3-Aug-09	0.0
419	0	44.5	32	0.3375	16:34:06	3-Aug-09	0.0
420	0	44.5	32	0.3375	16:35:06	3-Aug-09	0.0
421	0	44.5	32	0.3375	16:36:06	3-Aug-09	0.0
422	0	44.5	33	0.3375	16:37:06	3-Aug-09	0.0
423	0	44.5	32	0.3375	16:38:06	3-Aug-09	0.0
424	0	44.5	32	0.3375	16:39:06	3-Aug-09	0.0
425	0	44.5	33	0.3375	16:40:06	3-Aug-09	0.0
426	0	44.5	33	0.3375	16:41:06	3-Aug-09	0.0
427	0	44.5	32	0.3375	16:42:06	3-Aug-09	0.0
428	0	44.5	32	0.3375	16:43:06	3-Aug-09	0.0

DataRam 4 Dust Monitor, Serial Number D464

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
476	5.7	36.9	29	0.2188	15:57:30	3-Aug-09	5.5
477	6.1	36.8	29	0.2432	15:58:30	3-Aug-09	5.6
478	5.8	36.8	29	0.2522	15:59:30	3-Aug-09	5.6
479	6.2	36.8	29	0.2458	16:00:30	3-Aug-09	5.7
480	5.7	36.8	29	0.2491	16:01:30	3-Aug-09	5.7
481	5.7	36.8	29	0.2391	16:02:30	3-Aug-09	5.6
482	5.1	36.8	29	0.2486	16:03:30	3-Aug-09	5.6
483	5.5	36.7	29	0.2683	16:04:30	3-Aug-09	5.6
484	5.8	36.8	29	0.2402	16:05:30	3-Aug-09	5.6
485	5.1	36.7	29	0.2488	16:06:30	3-Aug-09	5.6
486	4.9	36.7	29	0.25	16:07:30	3-Aug-09	5.6
487	6.9	36.7	29	0.2335	16:08:30	3-Aug-09	5.7
488	6	36.7	29	0.2562	16:09:30	3-Aug-09	5.7
489	5.9	36.7	29	0.2312	16:10:30	3-Aug-09	5.8
490	5.4	36.7	29	0.2319	16:11:30	3-Aug-09	5.7
491	5.8	36.7	29	0.2282	16:12:30	3-Aug-09	5.7
492	5.9	36.7	29	0.2259	16:13:30	3-Aug-09	5.7
493	5.9	36.7	29	0.2481	16:14:30	3-Aug-09	5.7
494	5.7	36.8	29	0.2367	16:15:30	3-Aug-09	5.7
495	5.5	36.8	29	0.2416	16:16:30	3-Aug-09	5.7
496	5.5	36.8	29	0.2399	16:17:30	3-Aug-09	5.7
497	6.1	36.8	29	0.242	16:18:30	3-Aug-09	5.7
498	5.4	36.8	29	0.2426	16:19:30	3-Aug-09	5.7
499	5.8	36.8	29	0.2466	16:20:30	3-Aug-09	5.7
500	6	36.8	29	0.2212	16:21:30	3-Aug-09	5.7
501	5.7	36.8	29	0.2491	16:22:30	3-Aug-09	5.8
502	5.9	36.8	29	0.2477	16:23:30	3-Aug-09	5.8
503	6.7	36.8	29	0.2422	16:24:30	3-Aug-09	5.8
504	5.8	36.8	29	0.2217	16:25:30	3-Aug-09	5.8
505	5.7	36.8	29	0.2252	16:26:30	3-Aug-09	5.8
506	5.6	36.8	29	0.228	16:27:30	3-Aug-09	5.8
507	6.5	36.8	29	0.2217	16:28:30	3-Aug-09	5.9
508	6	36.8	29	0.2151	16:29:30	3-Aug-09	5.9
509	7.4	36.8	29	0.237	16:30:30	3-Aug-09	6.0
510	6.3	36.8	29	0.2292	16:31:30	3-Aug-09	6.0
511	6.1	36.8	29	0.2343	16:32:30	3-Aug-09	6.0
512	6.3	36.8	29	0.2265	16:33:30	3-Aug-09	6.1
513	6.1	36.8	29	0.2164	16:34:30	3-Aug-09	6.1
514	6.2	36.8	29	0.2311	16:35:30	3-Aug-09	6.1
515	6.2	36.7	29	0.2261	16:36:30	3-Aug-09	6.2

1	40.4	25.1	35	0.1808	6:43:22	4-Aug-09	
2	41.3	25	40	0.1753	6:44:22	4-Aug-09	
3	43.5	25	43	0.1762	6:45:22	4-Aug-09	
4	43.7	25	46	0.1768	6:46:22	4-Aug-09	
5	43.8	24.9	48	0.1832	6:47:22	4-Aug-09	
6	44.1	24.9	49	0.177	6:48:22	4-Aug-09	
7	45	24.9	51	0.1745	6:49:22	4-Aug-09	
8	44.9	24.8	52	0.1743	6:50:22	4-Aug-09	
9	45.6	25.3	53	0.1917	6:51:22	4-Aug-09	
10	45.3	28.9	56	0.1726	6:52:22	4-Aug-09	
11	45.9	29.1	57	0.173	6:53:22	4-Aug-09	
12	45.7	29.1	58	0.163	6:54:22	4-Aug-09	
13	45.9	29.1	58	0.1699	6:55:22	4-Aug-09	
14	46.2	29.1	59	0.1773	6:56:22	4-Aug-09	
15	46.3	29.1	59	0.1785	6:57:22	4-Aug-09	
16	45.6	29.1	60	0.1691	6:58:22	4-Aug-09	44.6
17	45.7	29.1	60	0.1705	6:59:22	4-Aug-09	44.9
18	47	29.1	60	0.1715	7:00:22	4-Aug-09	45.3
19	45.8	29.1	61	0.1705	7:01:22	4-Aug-09	45.4
20	45.7	29.1	61	0.1683	7:02:22	4-Aug-09	45.5
21	46.5	29.1	62	0.162	7:03:22	4-Aug-09	45.7
22	47.2	29	62	0.1712	7:04:22	4-Aug-09	45.9
23	47.8	29	62	0.1836	7:05:22	4-Aug-09	46.1
24	47.5	29	63	0.1768	7:06:22	4-Aug-09	46.2
25	47.6	29	63	0.1699	7:07:22	4-Aug-09	46.4
26	48.6	29	63	0.182	7:08:22	4-Aug-09	46.6
27	48.6	29	63	0.1918	7:09:22	4-Aug-09	46.7
28	48	29	64	0.1813	7:10:22	4-Aug-09	46.9
29	48.3	29	64	0.1762	7:11:22	4-Aug-09	47.0
30	48.6	29	64	0.1789	7:12:22	4-Aug-09	47.2
31	47.8	29	64	0.1717	7:13:22	4-Aug-09	47.3
32	48.7	29	65	0.1795	7:14:22	4-Aug-09	47.5
33	47.8	29	65	0.1712	7:15:22	4-Aug-09	47.6
34	48.2	29	65	0.176	7:16:22	4-Aug-09	47.7
35	47.2	29	65	0.1819	7:17:22	4-Aug-09	47.8
36	46.6	29	65	0.1751	7:18:22	4-Aug-09	47.8
37	46.5	29	65	0.1675	7:19:22	4-Aug-09	47.8
38	47.6	29	66	0.176	7:20:22	4-Aug-09	47.8
39	46.7	29	66	0.181	7:21:22	4-Aug-09	47.8
40	47	29	66	0.1678	7:22:22	4-Aug-09	47.7
41	46.1	29	66	0.1704	7:23:22	4-Aug-09	47.6
42	46.1	29.1	66	0.1729	7:24:22	4-Aug-09	47.5

1	30.9	25	36	0.2506	6:35:52	4-Aug-09	
2	32.3	24.9	39	0.2811	6:36:52	4-Aug-09	
3	31	24.9	41	0.2834	6:37:52	4-Aug-09	
4	31.1	24.9	43	0.2846	6:38:52	4-Aug-09	
5	30.8	24.9	44	0.28	6:39:52	4-Aug-09	
6	38.1	24.8	46	0.3289	6:40:52	4-Aug-09	
7	52	24.8	47	0.5008	6:41:52	4-Aug-09	
8	45.5	24.8	48	0.4182	6:42:52	4-Aug-09	
9	34.1	24.7	49	0.3037	6:43:52	4-Aug-09	
10	30.2	24.7	49	0.268	6:44:52	4-Aug-09	
11	30.1	24.7	50	0.2687	6:45:52	4-Aug-09	
12	30.5	24.7	50	0.2691	6:46:52	4-Aug-09	
13	30.4	24.6	51	0.2524	6:47:52	4-Aug-09	
14	30.7	24.6	51	0.2607	6:48:52	4-Aug-09	
15	31.2	24.6	52	0.261	6:49:52	4-Aug-09	
16	33	24.6	52	0.2831	6:50:52	4-Aug-09	33.9
17	35.1	24.5	53	0.3186	6:51:52	4-Aug-09	34.1
18	32.3	24.5	53	0.2821	6:52:52	4-Aug-09	34.1
19	31.6	24.5	53	0.2764	6:53:52	4-Aug-09	34.2
20	32.4	24.5	54	0.2695	6:54:52	4-Aug-09	34.3
21	31	24.5	54	0.2624	6:55:52	4-Aug-09	34.3
22	31.3	24.4	54	0.2643	6:56:52	4-Aug-09	33.8
23	31	24.4	54	0.264	6:57:52	4-Aug-09	32.5
24	31.9	24.4	55	0.2788	6:58:52	4-Aug-09	31.7
25	31.7	24.3	55	0.2747	6:59:52	4-Aug-09	31.5
26	32.2	24.3	55	0.2615	7:00:52	4-Aug-09	31.7
27	32.8	24.3	55	0.2734	7:01:52	4-Aug-09	31.8
28	36.1	24.2	56	0.301	7:02:52	4-Aug-09	32.2
29	32.8	24.2	56	0.2782	7:03:52	4-Aug-09	32.3
30	31.9	24.2	56	0.2627	7:04:52	4-Aug-09	32.4
31	32.3	24.2	57	0.2657	7:05:52	4-Aug-09	32.5
32	32.1	24.2	57	0.261	7:06:52	4-Aug-09	32.4
33	32.9	24.1	57	0.2546	7:07:52	4-Aug-09	32.3
34	32.3	24.1	57	0.257	7:08:52	4-Aug-09	32.3
35	33.2	24.1	57	0.2662	7:09:52	4-Aug-09	32.4
36	33.5	24	58	0.2706	7:10:52	4-Aug-09	32.4
37	33	24	58	0.2766	7:11:52	4-Aug-09	32.6
38	33.6	24	58	0.2803	7:12:52	4-Aug-09	32.7
39	34.9	24	58	0.2858	7:13:52	4-Aug-09	33.0
40	33.7	24	58	0.2795	7:14:52	4-Aug-09	33.1
41	33.3	23.9	59	0.2641	7:15:52	4-Aug-09	33.2
42	35.2	23.9	59	0.2848	7:16:52	4-Aug-09	33.4
43	33.6	23.9	59	0.2759	7:17:52	4-Aug-09	33.4
44	33.2	23.9	59	0.2712	7:18:52	4-Aug-09	33.2
45	32.5	23.8	59	0.2734	7:19:52	4-Aug-09	33.2
46	33.1	23.8	59	0.2693	7:20:52	4-Aug-09	33.3
47	32.6	23.8	59	0.2769	7:21:52	4-Aug-09	33.3
48	32.9	23.8	59	0.2713	7:22:52	4-Aug-09	33.3
49	32.4	23.7	60	0.2617	7:23:52	4-Aug-09	33.3
50	33.2	23.7	60	0.2819	7:24:52	4-Aug-09	33.4

Appendix I
Ambient Air Dust Monitoring Results - SEAD-12 Removal Action

Seneca Army Depot Activity
Romulus, NY

DataRam 4 Dust Monitor, Serial Number D454

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
43	45.3	29.1	66	0.1696	7:25:22	4-Aug-09	47.3
44	45.6	29.1	66	0.1769	7:26:22	4-Aug-09	47.1
45	47.1	29.1	66	0.1784	7:27:22	4-Aug-09	47.1
46	45.4	29.1	66	0.1771	7:28:22	4-Aug-09	46.9
47	49.6	29.1	66	0.178	7:29:22	4-Aug-09	47.0
48	45.8	29.1	67	0.1781	7:30:22	4-Aug-09	46.8
49	44.9	29.2	67	0.179	7:31:22	4-Aug-09	46.6
50	45	29.2	67	0.1765	7:32:22	4-Aug-09	46.4
51	44.3	29.2	67	0.1686	7:33:22	4-Aug-09	46.2
52	45.8	29.2	67	0.1765	7:34:22	4-Aug-09	46.2
53	45.3	29.2	67	0.179	7:35:22	4-Aug-09	46.1
54	45.3	29.2	67	0.1766	7:36:22	4-Aug-09	46.0
55	45	29.3	67	0.1757	7:37:22	4-Aug-09	45.9
56	45.4	29.3	67	0.1756	7:38:22	4-Aug-09	45.8
57	44.7	29.3	67	0.1734	7:39:22	4-Aug-09	45.7
58	45.1	29.3	67	0.1842	7:40:22	4-Aug-09	45.6
59	46.4	29.4	67	0.1731	7:41:22	4-Aug-09	45.7
60	44.9	29.4	67	0.1746	7:42:22	4-Aug-09	45.6
61	44.8	29.4	67	0.1845	7:43:22	4-Aug-09	45.5
62	44.8	29.4	67	0.1875	7:44:22	4-Aug-09	45.4
63	44	29.4	67	0.1722	7:45:22	4-Aug-09	45.1
64	44.8	29.5	67	0.1843	7:46:22	4-Aug-09	45.0
65	42.9	29.5	67	0.1761	7:47:22	4-Aug-09	44.9
66	44	29.5	67	0.1817	7:48:22	4-Aug-09	44.8
67	44	29.5	67	0.1768	7:49:22	4-Aug-09	44.8
68	44.4	29.5	67	0.1866	7:50:22	4-Aug-09	44.7
69	45.3	29.5	67	0.1871	7:51:22	4-Aug-09	44.7
70	44.4	29.5	67	0.1811	7:52:22	4-Aug-09	44.7
71	44	29.6	67	0.1753	7:53:22	4-Aug-09	44.6
72	44.5	29.6	67	0.1854	7:54:22	4-Aug-09	44.6
73	43.5	29.6	67	0.1744	7:55:22	4-Aug-09	44.5
74	43.3	29.6	67	0.1725	7:56:22	4-Aug-09	44.4
75	43.9	29.6	67	0.1855	7:57:22	4-Aug-09	44.2
76	42.7	29.6	67	0.1726	7:58:22	4-Aug-09	44.1
77	44.3	29.7	67	0.1832	7:59:22	4-Aug-09	44.1
78	43.6	29.7	67	0.1739	8:00:22	4-Aug-09	44.0
79	43.4	29.7	67	0.176	8:01:22	4-Aug-09	43.9
80	46.9	29.8	67	0.182	8:02:22	4-Aug-09	44.1
81	43.8	29.8	67	0.1756	8:03:22	4-Aug-09	44.1
82	44.4	29.8	67	0.1794	8:04:22	4-Aug-09	44.2
83	43.4	29.9	67	0.1708	8:05:22	4-Aug-09	44.1
84	44.3	29.9	67	0.1797	8:06:22	4-Aug-09	44.1
85	43.7	30	67	0.1834	8:07:22	4-Aug-09	44.0
86	43.8	30	67	0.1727	8:08:22	4-Aug-09	44.0
87	43.6	30	67	0.1784	8:09:22	4-Aug-09	43.9
88	43.7	30	67	0.1741	8:10:22	4-Aug-09	43.9
89	43.9	30.1	67	0.1784	8:11:22	4-Aug-09	43.9
90	43	30.1	67	0.1839	8:12:22	4-Aug-09	43.9
91	44.6	30.2	67	0.1786	8:13:22	4-Aug-09	43.9
92	44.6	30.2	67	0.1747	8:14:22	4-Aug-09	44.1
93	44.5	30.3	67	0.1726	8:15:22	4-Aug-09	44.1
94	43.9	30.3	67	0.1725	8:16:22	4-Aug-09	44.1
95	43.6	30.3	67	0.1715	8:17:22	4-Aug-09	44.1
96	43.1	30.4	67	0.1824	8:18:22	4-Aug-09	43.9
97	41	30.5	67	0.1761	8:19:22	4-Aug-09	43.7
98	41.4	30.5	67	0.1765	8:20:22	4-Aug-09	43.5
99	41.9	30.5	67	0.1804	8:21:22	4-Aug-09	43.4
100	41.7	30.6	67	0.1832	8:22:22	4-Aug-09	43.3
101	40.9	30.6	67	0.1857	8:23:22	4-Aug-09	43.1
102	41.8	30.7	67	0.1865	8:24:22	4-Aug-09	43.0
103	41.7	30.7	67	0.1925	8:25:22	4-Aug-09	42.8
104	45.9	30.8	66	0.2024	8:26:22	4-Aug-09	43.0
105	41.8	30.8	67	0.1853	8:27:22	4-Aug-09	42.8
106	39.3	30.9	66	0.1724	8:28:22	4-Aug-09	42.6
107	39.5	30.9	66	0.1669	8:29:22	4-Aug-09	42.3
108	38.5	31	66	0.1677	8:30:22	4-Aug-09	41.9
109	40.3	31	66	0.1729	8:31:22	4-Aug-09	41.6
110	39.5	31.1	66	0.1658	8:32:22	4-Aug-09	41.4
111	40.1	31.1	66	0.1744	8:33:22	4-Aug-09	41.2
112	40.5	31.1	66	0.1846	8:34:22	4-Aug-09	41.0
113	41.1	31.2	66	0.1852	8:35:22	4-Aug-09	41.0
114	40	31.2	66	0.1782	8:36:22	4-Aug-09	40.9
115	40.9	31.3	66	0.1691	8:37:22	4-Aug-09	40.8
116	40.5	31.3	65	0.1744	8:38:22	4-Aug-09	40.8
117	39.2	31.3	65	0.1697	8:39:22	4-Aug-09	40.7
118	38.8	31.4	66	0.1647	8:40:22	4-Aug-09	40.5
119	39.3	31.5	65	0.1782	8:41:22	4-Aug-09	40.3
120	39.9	31.5	65	0.1886	8:42:22	4-Aug-09	40.0
121	38.1	31.6	66	0.175	8:43:22	4-Aug-09	39.7
122	38	31.6	65	0.1675	8:44:22	4-Aug-09	39.6
123	38.6	31.6	65	0.1709	8:45:22	4-Aug-09	39.6
124	38.8	31.7	65	0.177	8:46:22	4-Aug-09	39.6
125	38.8	31.7	65	0.176	8:47:22	4-Aug-09	39.5
126	45.1	31.7	65	0.1903	8:48:22	4-Aug-09	39.9
127	37.3	31.8	64	0.1761	8:49:22	4-Aug-09	39.7
128	37	31.8	64	0.1665	8:50:22	4-Aug-09	39.5
129	38	31.9	64	0.1736	8:51:22	4-Aug-09	39.3
130	37.2	32	64	0.1642	8:52:22	4-Aug-09	39.1
131	36.2	32	64	0.1724	8:53:22	4-Aug-09	38.8
132	36.4	32	64	0.1689	8:54:22	4-Aug-09	38.5
133	36.5	32.1	64	0.1642	8:55:22	4-Aug-09	38.4
134	37.4	32.1	64	0.1688	8:56:22	4-Aug-09	38.3
135	35.6	32.2	64	0.1635	8:57:22	4-Aug-09	38.1
136	35.9	32.2	64	0.173	8:58:22	4-Aug-09	37.8
137	35.9	32.2	63	0.1791	8:59:22	4-Aug-09	37.7
138	35.3	32.3	63	0.1731	9:00:22	4-Aug-09	37.5
139	52.2	32.4	63	0.2139	9:01:22	4-Aug-09	38.4
140	37.1	32.4	63	0.1962	9:02:22	4-Aug-09	38.2
141	35.3	32.5	63	0.1722	9:03:22	4-Aug-09	38.0
142	34.7	32.5	63	0.1846	9:04:22	4-Aug-09	37.4

DataRam 4 Dust Monitor, Serial Number D464

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
51	32.3	23.7	60	0.2572	7:25:52	4-Aug-09	33.3
52	33	23.8	60	0.2662	7:26:52	4-Aug-09	33.3
53	33	23.7	60	0.2716	7:27:52	4-Aug-09	33.3
54	32.3	23.7	60	0.2668	7:28:52	4-Aug-09	33.2
55	32.7	23.7	61	0.2647	7:29:52	4-Aug-09	33.1
56	32.3	23.7	61	0.2533	7:30:52	4-Aug-09	33.0
57	31.7	23.7	61	0.2524	7:31:52	4-Aug-09	32.9
58	31.8	23.7	61	0.2584	7:32:52	4-Aug-09	32.7
59	32	23.7	61	0.266	7:33:52	4-Aug-09	32.6
60	32.2	23.7	61	0.2599	7:34:52	4-Aug-09	32.5
61	31.8	23.7	61	0.2589	7:35:52	4-Aug-09	32.5
62	32.5	23.7	62	0.2654	7:36:52	4-Aug-09	32.4
63	32.7	23.7	61	0.2679	7:37:52	4-Aug-09	32.4
64	32.7	23.7	62	0.2658	7:38:52	4-Aug-09	32.4
65	32.6	23.7	62	0.2627	7:39:52	4-Aug-09	32.4
66	32.5	23.7	62	0.2667	7:40:52	4-Aug-09	32.4
67	32.1	23.7	62	0.2504	7:41:52	4-Aug-09	32.4
68	31.3	23.7	62	0.2429	7:42:52	4-Aug-09	32.3
69	32.3	23.7	62	0.2579	7:43:52	4-Aug-09	32.2
70	31.8	23.7	62	0.2632	7:44:52	4-Aug-09	32.2
71	31.9	23.7	62	0.2701	7:45:52	4-Aug-09	32.1
72	31.7	23.7	62	0.2572	7:46:52	4-Aug-09	32.1
73	31.4	23.7	62	0.2646	7:47:52	4-Aug-09	32.1
74	31.7	23.7	62	0.2647	7:48:52	4-Aug-09	32.1
75	31.6	23.7	62	0.2559	7:49:52	4-Aug-09	32.1
76	31.9	23.7	62	0.269	7:50:52	4-Aug-09	32.0
77	31.9	23.7	62	0.2641	7:51:52	4-Aug-09	32.0
78	32.3	23.6	62	0.2709	7:52:52	4-Aug-09	32.0
79	32.5	23.7	62	0.2758	7:53:52	4-Aug-09	32.0
80	32.5	23.7	62	0.2782	7:54:52	4-Aug-09	32.0
81	31.5	23.7	63	0.2621	7:55:52	4-Aug-09	31.9
82	31.8	23.7	63	0.2508	7:56:52	4-Aug-09	31.9
83	31.8	23.7	63	0.2474	7:57:52	4-Aug-09	31.9
84	32.1	23.7	63	0.2638	7:58:52	4-Aug-09	31.9
85	32.5	23.7	63	0.2739	7:59:52	4-Aug-09	31.9
86	32	23.7	63	0.2507	8:00:52	4-Aug-09	31.9
87	33	23.7	63	0.253	8:01:52	4-Aug-09	32.0
88	32.2	23.7	63	0.2522	8:02:52	4-Aug-09	32.0
89	32.5	23.7	63	0.2669	8:03:52	4-Aug-09	32.1
90	31.6	23.7	63	0.2442	8:04:52	4-Aug-09	32.1
91	33.1	23.8	63	0.2699	8:05:52	4-Aug-09	32.2
92	32.5	23.8	63	0.2632	8:06:52	4-Aug-09	32.2
93	33	23.8	63	0.2739	8:07:52	4-Aug-09	32.3
94	32.7	23.9	63	0.2592	8:08:52	4-Aug-09	32.3
95	33.1	23.9	63	0.2691	8:09:52	4-Aug-09	32.4
96	32.1	23.9	64	0.2718	8:10:52	4-Aug-09	32.3
97	31.2	23.9	64	0.2551	8:11:52	4-Aug-09	32.3
98	32.4	24	64	0.2715	8:12:52	4-Aug-09	32.4
99	31.9	24	64	0.2726	8:13:52	4-Aug-09	32.4
100	31.2	24	64	0.2596	8:14:52	4-Aug-09	32.3
101	31.7	24.1	64	0.2731	8:15:52	4-Aug-09	32.3
102	30.8	24.1	64	0.263	8:16:52	4-Aug-09	32.2
103	31.1	24.1	64	0.2568	8:17:52	4-Aug-09	32.1
104	31.1	24.1	64	0.2651	8:18:52	4-Aug-09	32.0
105	30.9	24.1	64	0.2542	8:19:52	4-Aug-09	31.9
106	31	24.2	64	0.2567	8:20:52	4-Aug-09	31.9
107	30.2	24.2	64	0.2429	8:21:52	4-Aug-09	31.7
108	30.3	24.3	64	0.2663	8:22:52	4-Aug-09	31.5
109	29.6	24.3	64	0.2609	8:23:52	4-Aug-09	31.3
110	29.2	24.4	64	0.2565	8:24:52	4-Aug-09	31.1
111	29.5	24.4	64	0.2588	8:25:52	4-Aug-09	30.9
112	29.4	24.4	64	0.2562	8:26:52	4-Aug-09	30.7
113	28.4	24.5	63	0.2459	8:27:52	4-Aug-09	30.5
114	29.5	24.5	64	0.2514	8:28:52	4-Aug-09	30.4
115	28.5	24.5	63	0.2433	8:29:52	4-Aug-09	30.2
116	29.1	24.6	63	0.2559	8:30:52	4-Aug-09	30.0
117	29	24.6	63	0.2501	8:31:52	4-Aug-09	29.9
118	29.7	24.6	63	0.2496	8:32:52	4-Aug-09	29.8
119	28.9	24.7	63	0.255	8:33:52	4-Aug-09	29.6
120	29.2	24.7	63	0.2497	8:34:52	4-Aug-09	29.5
121	28.8	24.7	63	0.2389	8:35:52	4-Aug-09	29.4
122	29.3	24.8	63	0.2476	8:36:52	4-Aug-09	29.3
123	29	24.8	63	0.2469	8:37:52	4-Aug-09	29.2
124	28.7	24.9	63	0.2404	8:38:52	4-Aug-09	29.1
125	29.3	24.9	63	0.2547	8:39:52	4-Aug-09	29.1
126	29.1	24.9	63	0.2432	8:40:52	4-Aug-09	29.1
127	28.9	25	63	0.2529	8:41:52	4-Aug-09	29.1
128	28.7	25	63	0.2515	8:42:52	4-Aug-09	29.0
129	28.8	25	63	0.2557	8:43:52	4-Aug-09	29.0
130	28.5	25.1	63	0.2562	8:44:52	4-Aug-09	29.0
131	28.5	25.1	63	0.2327	8:45:52	4-Aug-09	29.0
132	28.4	25.1	63	0.244	8:46:52	4-Aug-09	28.9
133	27.6	25.2	63	0.266	8:47:52	4-Aug-09	28.8
134	28.3	25.2	63	0.2607	8:48:52	4-Aug-09	28.8
135	27.5	25.2	63	0.2569	8:49:52	4-Aug-09	28.7
136	27.3	25.3	63	0.2444	8:50:52	4-Aug-09	28.5
137	27.2	25.4	63	0.2499	8:51:52	4-Aug-09	28.4
138	26.8	25.4	62	0.254	8:52:52	4-Aug-09	28.3
139	27.9	25.4	62	0.2708	8:53:52	4-Aug-09	28.2
140	26.7	25.5	62	0.239	8:54:52	4-Aug-09	28.1
141	27	25.5	62	0.2577	8:55:52	4-Aug-09	28.0
142	26.4	25.6	62	0.2692	8:56:52	4-Aug-09	27.8
143	26.2	25.6	62	0.2682	8:57:52	4-Aug-09	27.6
144	25.5	25.6	62	0.2439	8:58:52	4-Aug-09	27.4
145	24	25.7	62	0.2377	8:59:52	4-Aug-09	27.1
146	24.8	25.7	62	0.2487	9:00:52	4-Aug-09	26.9
147	24.3	25.8	61	0.2452	9:01:52	4-Aug-09	26.6
148	25.4	25.8	61	0.2524	9:02:52	4-Aug-09	26.4
149	24.5	25.9	61	0.2358	9:03:52	4-Aug-09	26.2
150	24.7	25.9	61	0.2383	9:04:52	4-Aug-09	26.0

Appendix I
Ambient Air Dust Monitoring Results - SEAD-12 Removal Action

Seneca Army Depot Activity
Romulus, NY

DataRam 4 Dust Monitor, Serial Number D454

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
143	34.3	32.6	62	0.1776	9:05:22	4-Aug-09	37.2
144	33.6	32.6	62	0.1681	9:06:22	4-Aug-09	37.0
145	34.2	32.7	62	0.1736	9:07:22	4-Aug-09	36.7
146	33.9	32.7	62	0.171	9:08:22	4-Aug-09	36.5
147	34.2	32.8	62	0.1701	9:09:22	4-Aug-09	36.4
148	33.8	32.8	62	0.1698	9:10:22	4-Aug-09	36.2
149	45.1	32.9	62	0.1952	9:11:22	4-Aug-09	36.8
150	34.8	33	61	0.1892	9:12:22	4-Aug-09	36.6
151	32.8	33	61	0.1735	9:13:22	4-Aug-09	36.4
152	33.7	33	61	0.1862	9:14:22	4-Aug-09	36.3
153	33.5	33.1	60	0.1736	9:15:22	4-Aug-09	36.2
154	32.5	33.1	61	0.1648	9:16:22	4-Aug-09	36.0
155	32.4	33.1	60	0.1555	9:17:22	4-Aug-09	34.7
156	33.2	33.2	60	0.167	9:18:22	4-Aug-09	34.5
157	32.6	33.2	60	0.1636	9:19:22	4-Aug-09	34.3
158	32.6	33.3	60	0.1725	9:20:22	4-Aug-09	34.2
159	41.4	33.3	60	0.1894	9:21:22	4-Aug-09	34.6
160	32.2	33.4	60	0.17	9:22:22	4-Aug-09	34.6
161	33.9	33.4	60	0.1712	9:23:22	4-Aug-09	34.5
162	33.3	33.5	60	0.1687	9:24:22	4-Aug-09	34.5
163	31.7	33.5	60	0.1699	9:25:22	4-Aug-09	34.3
164	31.5	33.6	59	0.1637	9:26:22	4-Aug-09	34.2
165	31.3	33.6	59	0.1584	9:27:22	4-Aug-09	33.3
166	31.1	33.7	59	0.1677	9:28:22	4-Aug-09	33.1
167	32.2	33.7	59	0.168	9:29:22	4-Aug-09	33.1
168	32.3	33.8	59	0.1588	9:30:22	4-Aug-09	33.0
169	64.2	33.8	59	0.2721	9:31:22	4-Aug-09	34.9
170	32.3	33.9	58	0.2013	9:32:22	4-Aug-09	34.9
171	31.3	34	58	0.1659	9:33:22	4-Aug-09	34.8
172	31.8	34	58	0.1661	9:34:22	4-Aug-09	34.7
173	31.9	34	58	0.1602	9:35:22	4-Aug-09	34.7
174	31	34.1	58	0.1673	9:36:22	4-Aug-09	34.6
175	30.9	34.1	58	0.1625	9:37:22	4-Aug-09	33.9
176	32.6	34.2	58	0.1699	9:38:22	4-Aug-09	34.0
177	32.1	34.3	58	0.1726	9:39:22	4-Aug-09	33.8
178	48.3	34.3	58	0.1836	9:40:22	4-Aug-09	34.8
179	33.5	34.4	58	0.2172	9:41:22	4-Aug-09	34.9
180	31.9	34.4	57	0.1787	9:42:22	4-Aug-09	34.9
181	31.2	34.5	57	0.1754	9:43:22	4-Aug-09	34.9
182	31.1	34.6	57	0.1735	9:44:22	4-Aug-09	34.9
183	30.8	34.6	57	0.1588	9:45:22	4-Aug-09	34.8
184	30.2	34.6	57	0.1532	9:46:22	4-Aug-09	34.7
185	30.8	34.7	57	0.1709	9:47:22	4-Aug-09	32.6
186	34.4	34.7	57	0.1738	9:48:22	4-Aug-09	32.7
187	61.6	34.8	57	0.2711	9:49:22	4-Aug-09	34.6
188	32.9	34.8	56	0.1817	9:50:22	4-Aug-09	34.7
189	31.3	34.9	56	0.1648	9:51:22	4-Aug-09	34.7
190	30.8	34.9	56	0.1536	9:52:22	4-Aug-09	34.7
191	31.8	35	56	0.1586	9:53:22	4-Aug-09	34.7
192	33.5	35	56	0.1776	9:54:22	4-Aug-09	34.8
193	31.4	35.1	56	0.177	9:55:22	4-Aug-09	34.7
194	21.4	35.2	56	0.1833	9:56:22	4-Aug-09	33.0
195	13.5	35.2	56	0.1774	9:57:22	4-Aug-09	31.8
196	11.9	35.2	56	0.2262	9:58:22	4-Aug-09	30.5
197	5.8	35.3	56	0.2976	9:59:22	4-Aug-09	29.0
198	0.4	35.4	56	0.329	10:00:22	4-Aug-09	27.0
199	0.4	35.4	55	0.3297	10:01:22	4-Aug-09	25.1
200	0.1	35.5	55	0.336	10:02:22	4-Aug-09	23.3
201	0.3	35.5	55	0.3322	10:03:22	4-Aug-09	21.3
202	65.9	35.5	55	0.3111	10:04:22	4-Aug-09	23.3
203	13.8	35.6	55	0.6744	10:05:22	4-Aug-09	20.3
204	3.3	35.6	55	0.4291	10:06:22	4-Aug-09	18.5
205	6.8	35.7	55	0.8098	10:07:22	4-Aug-09	16.9
206	2.7	35.7	55	0.6954	10:08:22	4-Aug-09	15.2
207	25.4	35.8	55	0.3175	10:09:22	4-Aug-09	14.8
208	6.5	35.8	55	0.646	10:10:22	4-Aug-09	13.1
209	26.6	35.9	54	1.3052	10:11:22	4-Aug-09	12.8
210	18.3	36	54	1.101	10:12:22	4-Aug-09	12.6
211	5.8	36	54	0.6077	10:13:22	4-Aug-09	12.1
212	12	36.1	54	0.2801	10:14:22	4-Aug-09	12.1
213	13.5	36.1	54	0.2737	10:15:22	4-Aug-09	12.6
214	20	36.2	54	0.2863	10:16:22	4-Aug-09	13.8
215	30.1	36.2	54	0.7345	10:17:22	4-Aug-09	15.7
216	7.4	36.3	53	0.304	10:18:22	4-Aug-09	16.2
217	0.8	36.3	53	0.3205	10:19:22	4-Aug-09	16.2
218	6.3	36.4	53	0.1992	10:20:22	4-Aug-09	12.5
219	5.6	36.4	53	0.2331	10:21:22	4-Aug-09	11.9
220	1	36.5	53	0.3006	10:22:22	4-Aug-09	11.8
221	28.3	36.5	53	0.2599	10:23:22	4-Aug-09	13.1
222	20.6	36.6	53	0.609	10:24:22	4-Aug-09	14.3
223	0	36.6	53	0.3402	10:25:22	4-Aug-09	12.7
224	0.9	36.6	53	0.3831	10:26:22	4-Aug-09	12.3
225	0	36.6	52	0.3384	10:27:22	4-Aug-09	10.7
226	0.3	36.7	52	0.3519	10:28:22	4-Aug-09	9.5
227	0.4	36.7	53	0.3542	10:29:22	4-Aug-09	9.2
228	0.3	36.8	53	0.3581	10:30:22	4-Aug-09	8.5
229	1.5	36.8	53	0.3582	10:31:22	4-Aug-09	7.7
230	1.3	36.9	52	0.3411	10:32:22	4-Aug-09	6.6
231	0.3	36.9	52	0.3378	10:33:22	4-Aug-09	4.7
232	1.1	37	52	0.3299	10:34:22	4-Aug-09	4.3
233	1.1	37.1	52	0.3091	10:35:22	4-Aug-09	4.3
234	1.6	37.1	52	0.3089	10:36:22	4-Aug-09	4.0
235	28.2	37.1	52	0.1243	10:37:22	4-Aug-09	5.4
236	28.5	37.2	52	0.1574	10:38:22	4-Aug-09	7.2
237	28.3	37.2	52	0.15	10:39:22	4-Aug-09	7.2
238	28.6	37.2	52	0.1592	10:40:22	4-Aug-09	7.7
239	28.6	37.3	52	0.1654	10:41:22	4-Aug-09	9.4
240	28.3	37.3	51	0.1553	10:42:22	4-Aug-09	11.2
241	29.3	37.4	51	0.1662	10:43:22	4-Aug-09	13.0
242	34.5	37.4	52	0.1851	10:44:22	4-Aug-09	15.1

DataRam 4 Dust Monitor, Serial Number D464

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
151	25	25.9	61	0.2475	9:05:52	4-Aug-09	25.9
152	24.7	26	61	0.2472	9:06:52	4-Aug-09	25.7
153	24.1	26	61	0.2419	9:07:52	4-Aug-09	25.5
154	23.7	26.1	61	0.2277	9:08:52	4-Aug-09	25.3
155	23.1	26.1	61	0.2367	9:09:52	4-Aug-09	25.0
156	23.6	26.2	60	0.2381	9:10:52	4-Aug-09	24.8
157	23.1	26.2	60	0.2445	9:11:52	4-Aug-09	24.6
158	23.1	26.3	60	0.2376	9:12:52	4-Aug-09	24.4
159	22.7	26.3	60	0.2212	9:13:52	4-Aug-09	24.1
160	23.1	26.4	60	0.2312	9:14:52	4-Aug-09	24.0
161	22.9	26.5	60	0.2377	9:15:52	4-Aug-09	23.9
162	22.9	26.5	60	0.2493	9:16:52	4-Aug-09	23.8
163	22.5	26.5	59	0.2407	9:17:52	4-Aug-09	23.7
164	22.7	26.6	59	0.252	9:18:52	4-Aug-09	23.5
165	22.3	26.6	59	0.2379	9:19:52	4-Aug-09	23.4
166	22.8	26.7	59	0.2354	9:20:52	4-Aug-09	23.3
167	23.4	26.7	59	0.2489	9:21:52	4-Aug-09	23.2
168	22.5	26.8	59	0.2514	9:22:52	4-Aug-09	23.0
169	22.1	26.8	59	0.2294	9:23:52	4-Aug-09	22.9
170	22	26.9	58	0.243	9:24:52	4-Aug-09	22.8
171	21	27	58	0.2204	9:25:52	4-Aug-09	22.7
172	21.7	27	58	0.2237	9:26:52	4-Aug-09	22.6
173	21.9	27	58	0.2254	9:27:52	4-Aug-09	22.5
174	21.6	27.1	58	0.2337	9:28:52	4-Aug-09	22.4
175	21.5	27.1	58	0.2375	9:29:52	4-Aug-09	22.3
176	22.5	27.2	58	0.2558	9:30:52	4-Aug-09	22.3
177	22.1	27.2	57	0.2527	9:31:52	4-Aug-09	22.2
178	21.7	27.2	57	0.2469	9:32:52	4-Aug-09	22.1
179	22.4	27.3	57	0.2458	9:33:52	4-Aug-09	22.1
180	22.6	27.3	57	0.2416	9:34:52	4-Aug-09	22.1
181	21.7	27.4	57	0.2413	9:35:52	4-Aug-09	22.1
182	21.7	27.4	57	0.2391	9:36:52	4-Aug-09	22.0
183	21.4	27.5	57	0.2379	9:37:52	4-Aug-09	21.9
184	20.9	27.5	57	0.2249	9:38:52	4-Aug-09	21.8
185	21.5	27.5	57	0.2172	9:39:52	4-Aug-09	21.8
186	22.3	27.6	57	0.2342	9:40:52	4-Aug-09	21.8
187	22.1	27.6	57	0.2375	9:41:52	4-Aug-09	21.9
188	21.6	27.7	57	0.2293	9:42:52	4-Aug-09	21.8
189	21.9	27.7	56	0.2375	9:43:52	4-Aug-09	21.8
190	22	27.7	56	0.241	9:44:52	4-Aug-09	21.9
191	22.3	27.8	56	0.2493	9:45:52	4-Aug-09	21.9
192	21.3	27.8	56	0.2396	9:46:52	4-Aug-09	21.8
193	20.9	27.9	56	0.2405	9:47:52	4-Aug-09	21.8
194	21.6	28	56	0.2392	9:48:52	4-Aug-09	21.8
195	21.4	28	56	0.2273	9:49:52	4-Aug-09	21.7
196	20.9	28	56	0.226	9:50:52	4-Aug-09	21.6
197	21.1	28.1	56	0.2159	9:51:52	4-Aug-09	21.6
198	21.5	28.1	55	0.2219	9:52:52	4-Aug-09	21.5
199	21.5	28.1	55	0.2399	9:53:52	4-Aug-09	21.6
200	21.6	28.2	55	0.2342	9:54:52	4-Aug-09	21.6
201	21.9	28.2	55	0.2278	9:55:52	4-Aug-09	21.6
202	20.6	28.2	55	0.2261	9:56:52	4-Aug-09	21.5
203	21.6	28.3	55	0.2348	9:57:52	4-Aug-09	21.5
204	21.7	28.3	55	0.2432	9:58:52	4-Aug-09	21.5
205	21	28.4	55	0.224	9:59:52	4-Aug-09	21.4
206	22.1	28.4	55	0.2434	10:00:52	4-Aug-09	21.4
207	22	28.5	55	0.2528	10:01:52	4-Aug-09	21.4
208	21	28.5	55	0.2228	10:02:52	4-Aug-09	21.4
209	21	28.5	55	0.222	10:03:52	4-Aug-09	21.4
210	21	28.6	54	0.2338	10:04:52	4-Aug-09	21.4
211	21.3	28.6	54	0.2316	10:05:52	4-Aug-09	21.4
212	20.8	28.6	54	0.2216	10:06:52	4-Aug-09	21.4
213	20.6	28.7	54	0.2116	10:07:52	4-Aug-09	21.3
214	20.5	28.7	54	0.2349	10:08:52	4-Aug-09	21.3
215	20.9	28.8	54	0.2323	10:09:52	4-Aug-09	21.2
216	20.6	28.8	54	0.2241	10:10:52	4-Aug-09	21.2
217	20.9	28.9	54	0.2434	10:11:52	4-Aug-09	21.1
218	20.8	29	54	0.2276	10:12:52	4-Aug-09	21.1
219	20.1	29	53	0.2309	10:13:52	4-Aug-09	21.0
220	20	29	53	0.224	10:14:52	4-Aug-09	20.9
221	20.9	29.1	53	0.2305	10:15:52	4-Aug-09	20.9
222	21.6	29.1	53	0.2478	10:16:52	4-Aug-09	20.9
223	20.8	29.1	53	0.2293	10:17:52	4-Aug-09	20.8
224	21.1	29.1	53	0.224	10:18:52	4-Aug-09	20.8
225	19.9	29.2	53	0.2121	10:19:52	4-Aug-09	20.7
226	21.5	29.2	53	0.2282	10:20:52	4-Aug-09	20.8
227	21.7	29.2	53	0.2645	10:21:52	4-Aug-09	20.8
228	20.7	29.3	53	0.2379	10:22:52	4-Aug-09	20.8
229	20.5	29.3	53	0.2297	10:23:52	4-Aug-09	20.8
230	20.2	29.4	53	0.2488	10:24:52	4-Aug-09	20.8
231	20.3	29.4	53	0.2273	10:25:52	4-Aug-09	20.7
232	20.2	29.5	53	0.2194	10:26:52	4-Aug-09	20.7
233	20.7	29.5	53	0.2418	10:27:52	4-Aug-09	20.7
234	20.2	29.5	53	0.2421	10:28:52	4-Aug-09	20.7
235	19.5	29.6	52	0.2292	10:29:52	4-Aug-09	20.6
236	20.2	29.6	52	0.2283	10:30:52	4-Aug-09	20.6
237	20	29.7	52	0.2385	10:31:52	4-Aug-09	20.6
238	19.9	29.7	52	0.2143	10:32:52	4-Aug-09	20.5
239	19.3	29.8	52	0.2115	10:33:52	4-Aug-09	20.4
240	19.5	29.8	52	0.2211	10:34:52	4-Aug-09	20.3
241	19.8	29.9	52	0.2169	10:35:52	4-Aug-09	20.3
242	19.5	30	52	0.2226	10:36:52	4-Aug-09	20.1
243	20.1	30	52	0.224	10:37:52	4-Aug-09	20.0
244	19.2	30.1	52	0.2048	10:38:52	4-Aug-09	19.9
245	18.6	30.1	52	0.2152	10:39:52	4-Aug-09	19.8
246	19.2	30.2	52	0.217	10:40:52	4-Aug-09	19.8
247	20	30.2	51	0.2274	10:41:52	4-Aug-09	19.7
248	19.1	30.3	51	0.2284	10:42:52	4-Aug-09	19.7
249	20.1	30.3	51	0.2335	10:43:52	4-Aug-09	19.6
250	19.6	30.4	51	0.2423	10:44:52	4-Aug-09	19.6

Appendix I
Ambient Air Dust Monitoring Results - SEAD-12 Removal Action

Seneca Army Depot Activity
Romulus, NY

DataRam 4 Dust Monitor, Serial Number D454

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
243	29.3	37.4	52	0.1701	10:45:22	4-Aug-09	16.9
244	29.2	37.5	51	0.1629	10:46:22	4-Aug-09	18.7
245	29	37.5	51	0.1593	10:47:22	4-Aug-09	20.5
246	29.2	37.6	51	0.1711	10:48:22	4-Aug-09	22.2
247	29.7	37.6	51	0.1624	10:49:22	4-Aug-09	24.0
248	29.6	37.7	51	0.1732	10:50:22	4-Aug-09	25.8
249	28.3	37.7	51	0.1517	10:51:22	4-Aug-09	27.5
250	5	37.8	51	0.2814	10:52:22	4-Aug-09	27.7
251	0.6	37.8	51	0.3468	10:53:22	4-Aug-09	26.0
252	0.8	37.9	51	0.3505	10:54:22	4-Aug-09	24.3
253	106.6	38	51	1.6887	10:55:22	4-Aug-09	29.2
254	26	38	51	3.0065	10:56:22	4-Aug-09	29.0
255	0.6	38.1	51	0.4925	10:57:22	4-Aug-09	27.3
256	0	38.1	51	0.3409	10:58:22	4-Aug-09	25.5
257	0.2	38.2	50	0.3812	10:59:22	4-Aug-09	23.7
258	38	38.2	50	1.7311	11:00:22	4-Aug-09	23.9
259	15.5	38.3	50	1.3472	11:01:22	4-Aug-09	23.0
260	1.8	38.4	50	0.4847	11:02:22	4-Aug-09	21.3
261	0.3	38.4	50	0.3573	11:03:22	4-Aug-09	19.5
262	4.2	38.5	50	0.6221	11:04:22	4-Aug-09	18.0
263	106.3	38.5	50	1.4194	11:05:22	4-Aug-09	22.7
264	6	38.6	49	2.3925	11:06:22	4-Aug-09	21.3
265	13.1	38.6	49	3.269	11:07:22	4-Aug-09	20.3
266	5.1	38.6	49	2.1488	11:08:22	4-Aug-09	20.3
267	6.4	38.7	50	2.0036	11:09:22	4-Aug-09	20.7
268	23.9	38.7	50	3.9818	11:10:22	4-Aug-09	22.1
269	15.4	38.8	49	3.9504	11:11:22	4-Aug-09	16.4
270	12.7	38.8	49	3.8738	11:12:22	4-Aug-09	15.6
271	10	38.9	49	3.1507	11:13:22	4-Aug-09	16.2
272	18.4	39	49	2.9264	11:14:22	4-Aug-09	17.3
273	4.5	39	49	1.9152	11:15:22	4-Aug-09	17.6
274	1.4	39	49	0.7851	11:16:22	4-Aug-09	15.3
275	1.3	39.1	49	0.7349	11:17:22	4-Aug-09	14.4
276	4.2	39.1	49	0.5141	11:18:22	4-Aug-09	14.6
277	11.2	39.1	49	1.4108	11:19:22	4-Aug-09	15.3
278	4.2	39.2	48	0.4277	11:20:22	4-Aug-09	15.3
279	2.8	39.2	48	0.4059	11:21:22	4-Aug-09	8.8
280	195.9	39.3	48	1.9133	11:22:22	4-Aug-09	20.7
281	47.5	39.3	48	3.5845	11:23:22	4-Aug-09	22.8
282	0.7	39.4	48	0.5124	11:24:22	4-Aug-09	22.5
283	0.9	39.4	48	0.4023	11:25:22	4-Aug-09	22.2
284	0.7	39.5	47	0.3782	11:26:22	4-Aug-09	20.7
285	1.1	39.5	47	0.385	11:27:22	4-Aug-09	19.8
286	1.5	39.5	47	0.4023	11:28:22	4-Aug-09	19.1
287	62.4	39.6	48	1.4012	11:29:22	4-Aug-09	22.4
288	53.2	39.6	47	2.7726	11:30:22	4-Aug-09	24.6
289	4.1	39.6	47	1.3679	11:31:22	4-Aug-09	24.6
290	2.9	39.6	48	0.4594	11:32:22	4-Aug-09	24.7
291	159.6	39.7	48	0.6811	11:33:22	4-Aug-09	34.6
292	7.5	39.7	48	0.4827	11:34:22	4-Aug-09	34.8
293	0.7	39.8	48	0.4085	11:35:22	4-Aug-09	34.1
294	0.8	39.8	47	0.3849	11:36:22	4-Aug-09	33.9
295	0	39.9	47	0.3394	11:37:22	4-Aug-09	33.7
296	33.9	39.9	47	0.5133	11:38:22	4-Aug-09	23.6
297	87.4	39.9	47	1.0436	11:39:22	4-Aug-09	26.1
298	2.2	40	47	0.486	11:40:22	4-Aug-09	26.2
299	4	40	47	0.5634	11:41:22	4-Aug-09	26.4
300	22.3	40	47	1.8478	11:42:22	4-Aug-09	27.7
301	92.2	40	47	1.8043	11:43:22	4-Aug-09	33.4
302	9.5	40	47	1.4596	11:44:22	4-Aug-09	33.9
303	9.1	40.1	47	0.5516	11:45:22	4-Aug-09	30.6
304	7	40.1	47	0.7458	11:46:22	4-Aug-09	27.7
305	5.2	40.1	47	0.5523	11:47:22	4-Aug-09	27.8
306	7.3	40.2	47	0.8352	11:48:22	4-Aug-09	28.0
307	39.5	40.2	47	0.5784	11:49:22	4-Aug-09	20.5
308	31.9	40.2	46	0.9003	11:50:22	4-Aug-09	22.1
309	2.8	40.3	47	0.8096	11:51:22	4-Aug-09	22.2
310	0.8	40.3	46	0.6463	11:52:22	4-Aug-09	22.2
311	2.2	40.3	46	1.2407	11:53:22	4-Aug-09	22.3
312	1.4	40.3	46	0.8295	11:54:22	4-Aug-09	20.3
313	311.5	40.4	46	1.4369	11:55:22	4-Aug-09	34.3
314	3.5	40.3	46	0.9629	11:56:22	4-Aug-09	34.4
315	10.5	40.4	46	2.4926	11:57:22	4-Aug-09	34.8
316	6.6	40.4	46	1.4095	11:58:22	4-Aug-09	33.8
317	3	40.4	46	1.1378	11:59:22	4-Aug-09	28.2
318	80.4	40.4	46	2.1048	12:00:22	4-Aug-09	32.7
319	16.2	40.4	46	1.23	12:01:22	4-Aug-09	33.1
320	2.5	40.4	46	0.5576	12:02:22	4-Aug-09	32.8
321	4.1	40.4	46	1.6591	12:03:22	4-Aug-09	32.8
322	2.2	40.4	46	1.202	12:04:22	4-Aug-09	32.4
323	5.1	40.4	46	2.55	12:05:22	4-Aug-09	30.3
324	2.2	40.4	46	0.9156	12:06:22	4-Aug-09	28.4
325	291.1	40.4	46	1.9874	12:07:22	4-Aug-09	46.5
326	33.3	40.4	46	3.058	12:08:22	4-Aug-09	48.5
327	5.9	40.4	46	2.8234	12:09:22	4-Aug-09	48.7
328	3.5	40.5	46	1.921	12:10:22	4-Aug-09	48.9
329	2.3	40.5	46	1.3881	12:11:22	4-Aug-09	29.5
330	4.3	40.4	46	2.0158	12:12:22	4-Aug-09	29.6
331	2.7	40.5	46	1.3256	12:13:22	4-Aug-09	29.1
332	7.4	40.5	46	3.0745	12:14:22	4-Aug-09	29.1
333	7.7	40.5	46	3.5361	12:15:22	4-Aug-09	29.4
334	6.4	40.5	46	2.9741	12:16:22	4-Aug-09	24.8
335	6.3	40.5	46	2.7814	12:17:22	4-Aug-09	24.2
336	6.3	40.5	46	2.4396	12:18:22	4-Aug-09	24.4
337	18	40.5	46	2.1417	12:19:22	4-Aug-09	25.3
338	236.2	40.6	46	2.4815	12:20:22	4-Aug-09	39.9
339	11.6	40.6	46	3.3686	12:21:22	4-Aug-09	40.3
340	14.2	40.6	46	1.8865	12:22:22	4-Aug-09	41.1
341	13.5	40.7	46	0.2694	12:23:22	4-Aug-09	23.7
342	223.2	40.7	46	0.6875	12:24:22	4-Aug-09	35.6

DataRam 4 Dust Monitor, Serial Number D464

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
251	19.3	30.5	51	0.2211	10:45:52	4-Aug-09	19.6
252	18.9	30.5	51	0.2079	10:46:52	4-Aug-09	19.5
253	19.6	30.6	51	0.2252	10:47:52	4-Aug-09	19.5
254	19.7	30.6	51	0.2242	10:48:52	4-Aug-09	19.5
255	19.8	30.7	51	0.2277	10:49:52	4-Aug-09	19.5
256	19.6	30.7	51	0.2358	10:50:52	4-Aug-09	19.5
257	19.5	30.8	50	0.2326	10:51:52	4-Aug-09	19.5
258	19.1	30.8	50	0.2145	10:52:52	4-Aug-09	19.5
259	20	30.9	50	0.2422	10:53:52	4-Aug-09	19.5
260	19	31	50	0.2116	10:54:52	4-Aug-09	19.4
261	19.1	31	50	0.2115	10:55:52	4-Aug-09	19.5
262	18.8	31.1	50	0.2163	10:56:52	4-Aug-09	19.5
263	19	31.1	50	0.2188	10:57:52	4-Aug-09	19.4
264	18.8	31.2	49	0.2179	10:58:52	4-Aug-09	19.4
265	19.2	31.2	49	0.2164	10:59:52	4-Aug-09	19.3
266	19.3	31.2	49	0.2279	11:00:52	4-Aug-09	19.3
267	19.2	31.3	49	0.2312	11:01:52	4-Aug-09	19.3
268	19.8	31.4	49	0.2185	11:02:52	4-Aug-09	19.3
269	19.6	31.4	49	0.2294	11:03:52	4-Aug-09	19.3
270	19.8	31.5	49	0.2393	11:04:52	4-Aug-09	19.4
271	19.2	31.5	49	0.2122	11:05:52	4-Aug-09	19.3
272	19.3	31.5	49	0.2261	11:06:52	4-Aug-09	19.3
273	18.5	31.6	49	0.2162	11:07:52	4-Aug-09	19.2
274	18.6	31.6	48	0.2159	11:08:52	4-Aug-09	19.2
275	19.1	31.7	48	0.2174	11:09:52	4-Aug-09	19.1
276	18.7	31.7	48	0.2111	11:10:52	4-Aug-09	19.1
277	19	31.8	48	0.2188	11:11:52	4-Aug-09	19.1
278	18.6	31.8	48	0.2045	11:12:52	4-Aug-09	19.1
279	19.6	31.8	48	0.2325	11:13:52	4-Aug-09	19.1
280	18.9	31.9	48	0.2378	11:14:52	4-Aug-09	19.2
281	19.4	31.9	47	0.2409	11:15:52	4-Aug-09	19.2
282	19	32	48	0.2297	11:16:52	4-Aug-09	19.1
283	18.7	32	47	0.2182	11:17:52	4-Aug-09	19.1
284	18.3	32	47	0.2115	11:18:52	4-Aug-09	19.0
285	19.3	32.1	47	0.2234	11:19:52	4-Aug-09	19.0
286	19.2	32.1	47	0.2204	11:20:52	4-Aug-09	19.0
287	18.4	32.1	47	0.2104	11:21:52	4-Aug-09	18.9
288	20	32.1	47	0.2109	11:22:52	4-Aug-09	19.0
289	18.4	32.2	47	0.1981	11:23:52	4-Aug-09	19.0
290	19.6	32.2	47	0.2431	11:24:52	4-Aug-09	19.0
291	18.7	32.2	47	0.2035	11:25:52	4-Aug-09	19.0
292	17.9	32.2	47	0.1929	11:26:52	4-Aug-09	18.9
293	18.8	32.3	47	0.2092	11:27:52	4-Aug-09	18.9
294	18.5	32.3	47	0.2122	11:28:52	4-Aug-09	18.9
295	18.1	32.3	47	0.2029	11:29:52	4-Aug-09	18.8
296	18.3	32.4	46	0.2045	11:30:52	4-Aug-09	18.8
297	19.3	32.4	46	0.2394	11:31:52	4-Aug-09	18.8
298	18.7	32.4	46	0.2232	11:32:52	4-Aug-09	18.8
299	18	32.5	46	0.2039	11:33:52	4-Aug-09	18.7
300	18.4	32.5	46	0.1917	11:34:52	4-Aug-09	18.7
301	19.1	32.5	47	0.2168	11:35:52	4-Aug-09	18.7
302	19	32.6	46	0.2196	11:36:52	4-Aug-09	18.7
303	18.9	32.6	46	0.2172	11:37:52	4-Aug-09	18.7
304	18.8	32.6	46	0.212	11:38:52	4-Aug-09	18.7
305	19.2	32.6	46	0.2124	11:39:52	4-Aug-09	18.7
306	19.1	32.7	46	0.2232	11:40:52	4-Aug-09	18.7
307	18.8	32.7	46	0.2307	11:41:52	4-Aug-09	18.7
308	18.5	32.7	46	0.2084	11:42:52	4-Aug-09	18.7
309	18.3	32.7	46	0.2057	11:43:52	4-Aug-09	18.7
310	18.6	32.8	46	0.2143	11:44:52	4-Aug-09	18.7
311	19.6	32.8	46	0.2202	11:45:52	4-Aug-09	18.8
312	19	32.8	46	0.2262	11:46:52	4-Aug-09	18.8
313	19.2	32.9	46	0.2159	11:47:52	4-Aug-09	18.8
314	20.5	32.9	46	0.2434	11:48:52	4-Aug-09	18.9
315	20	32.9	46	0.2021	11:49:52	4-Aug-09	19.1
316	21.2	32.9	46	0.2333	11:50:52	4-Aug-09	19.2
317	18.9	33	46	0.1969	11:51:52	4-Aug-09	19.2
318	19.2	33	46	0.223	11:52:52	4-Aug-09	19.2
319	20.2	33	46	0.2397	11:53:52	4-Aug-09	19.3
320	18.3	33	46	0.2019	11:54:52	4-Aug-09	19.3
321	18.8	33.1	46	0.2087	11:55:52	4-Aug-09	19.3
322	18.9	33.1	46	0.2113	11:56:52	4-Aug-09	19.3
323	18.4	33.1	46	0.2021	11:57:52	4-Aug-09	19.2
324	19.4	33.1	46	0.2148	11:58:52	4-Aug-09	19.3
325	19.1	33.2	45	0.2082	11:59:52	4-Aug-09	19.3
326	19	33.2	45	0.2137	12:00:52	4-Aug-09	19.4
327	18.4	33.2	45	0.2148	12:01:52	4-Aug-09	19.3
328	19.9	33.2	45	0.2194	12:02:52	4-Aug-09	19.3
329	20.9	33.3	45	0.2351	12:03:52	4-Aug-09	19.4
330	19.4	33.3	45	0.2176	12:04:52	4-Aug-09	19.4
331	18.8	33.4	45	0.2011	12:05:52	4-Aug-09	19.3
332	19.4	33.4	45	0.2012	12:06:52	4-Aug-09	19.2
333	19.4	33.4	45	0.2226	12:07:52	4-Aug-09	19.2
334	18.5	33.4	45	0.2096	12:08:52	4-Aug-09	19.2
335	18.9	33.5	45	0.2114	12:09:52	4-Aug-09	19.1
336	18.1	33.5	45	0.2003	12:10:52	4-Aug-09	19.1
337	20.3	33.5	45	0.2396	12:11:52	4-Aug-09	19.2
338	18.3	33.6	45	0.2205	12:12:52	4-Aug-09	19.1
339	18.5	33.6	45	0.2109	12:13:52	4-Aug-09	19.1
340	19.4	33.6	45	0.2136	12:14:52	4-Aug-09	19.1
341	19.4	33.7	45	0.226	12:15:52	4-Aug-09	19.2
342	19.1	33.7	45	0.2244	12:16:52	4-Aug-09	19.2
343	18.3	33.7	45	0.2065	12:17:52	4-Aug-09	19.2
344	19.3	33.8	45	0.2148	12:18:52	4-Aug-09	19.1
345	18.7	33.8	44	0.2118	12:19:52	4-Aug-09	19.0
346	21.5	33.9	44	0.238	12:20:52	4-Aug-09	19.1
347	19.1	33.9	44	0.2345	12:21:52	4-Aug-09	19.1
348	18.7	33.9	44	0.2039	12:22:52	4-Aug-09	19.1
349	18.4	33.9	44	0.2034	12:23:52	4-Aug-09	19.0
350	18.4	34	44	0.2087	12:24:52	4-Aug-09	19.0

Appendix I
Ambient Air Dust Monitoring Results - SEAD-12 Removal Action

Seneca Army Depot Activity
Romulus, NY

DataRam 4 Dust Monitor, Serial Number D454

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
343	103.3	40.7	46	0.7073	12:25:22	4-Aug-09	41.7
344	14.2	40.8	46	0.2869	12:26:22	4-Aug-09	42.4
345	14.4	40.8	46	0.2341	12:27:22	4-Aug-09	43.1
346	22	40.9	46	0.2717	12:28:22	4-Aug-09	44.2
347	34.9	40.9	46	0.701	12:29:22	4-Aug-09	46.2
348	7.9	41	46	0.4681	12:30:22	4-Aug-09	46.3
349	96.4	41	46	0.4292	12:31:22	4-Aug-09	51.8
350	111.2	41	46	0.8791	12:32:22	4-Aug-09	58.4
351	20.1	41.1	46	0.6036	12:33:22	4-Aug-09	59.2
352	8.8	41.1	46	0.6546	12:34:22	4-Aug-09	59.4
353	9.2	41.2	46	0.7386	12:35:22	4-Aug-09	58.8
354	100.4	41.2	45	0.5399	12:36:22	4-Aug-09	50.3
355	58.2	41.2	46	0.7095	12:37:22	4-Aug-09	53.2
356	14.4	41.3	45	0.4927	12:38:22	4-Aug-09	53.3
357	14.3	41.4	45	0.2835	12:39:22	4-Aug-09	53.3
358	17.4	41.4	45	0.2728	12:40:22	4-Aug-09	40.4
359	28.4	41.5	45	0.2552	12:41:22	4-Aug-09	35.8
360	250.4	41.5	45	0.5158	12:42:22	4-Aug-09	50.5
361	17.5	41.6	45	0.2927	12:43:22	4-Aug-09	50.7
362	20.7	41.6	45	0.2851	12:44:22	4-Aug-09	50.6
363	16.6	41.6	45	0.272	12:45:22	4-Aug-09	49.5
364	185.4	41.6	45	0.2962	12:46:22	4-Aug-09	60.6
365	84.4	41.7	45	0.546	12:47:22	4-Aug-09	59.8
366	19.5	41.7	44	0.2496	12:48:22	4-Aug-09	54.1
367	17.9	41.7	44	0.2231	12:49:22	4-Aug-09	54.0
368	18.9	41.8	44	0.2607	12:50:22	4-Aug-09	54.6
369	84.1	41.8	44	0.3997	12:51:22	4-Aug-09	59.3
370	24.1	41.9	44	0.3289	12:52:22	4-Aug-09	54.5
371	27.7	41.9	44	0.3079	12:53:22	4-Aug-09	52.6
372	18.8	41.9	44	0.2406	12:54:22	4-Aug-09	52.9
373	20.8	41.9	43	0.2405	12:55:22	4-Aug-09	53.3
374	17.3	41.9	43	0.2627	12:56:22	4-Aug-09	53.3
375	17.5	41.9	43	0.2153	12:57:22	4-Aug-09	52.6
376	25.4	41.9	43	0.2466	12:58:22	4-Aug-09	38.5
377	29.7	42	43	0.4022	12:59:22	4-Aug-09	39.3
378	27.2	41.9	43	0.4689	13:00:22	4-Aug-09	39.7
379	15.3	42	43	0.419	13:01:22	4-Aug-09	39.6
380	56.7	42	43	0.4248	13:02:22	4-Aug-09	31.6
381	40.8	42	43	0.3393	13:03:22	4-Aug-09	28.9
382	17.9	42	42	0.2871	13:04:22	4-Aug-09	28.8
383	13.8	41.9	42	0.5673	13:05:22	4-Aug-09	28.5
384	20.9	41.9	42	0.4142	13:06:22	4-Aug-09	28.6
385	27.9	42	42	0.3492	13:07:22	4-Aug-09	25.1
386	241.7	42	42	0.5845	13:08:22	4-Aug-09	38.7
387	21.4	41.9	42	0.3986	13:09:22	4-Aug-09	38.3
388	32.2	42	42	0.342	13:10:22	4-Aug-09	39.2
389	247.1	42	42	0.5964	13:11:22	4-Aug-09	53.3
390	100.9	42	42	0.7354	13:12:22	4-Aug-09	58.5
391	16.7	42	42	0.3414	13:13:22	4-Aug-09	58.5
392	16	42	42	0.412	13:14:22	4-Aug-09	57.9
393	19.6	42	42	0.5012	13:15:22	4-Aug-09	57.3
394	14.4	42	42	0.3168	13:16:22	4-Aug-09	56.5
395	27.9	42	42	0.4337	13:17:22	4-Aug-09	57.2
396	11.9	42	42	0.4125	13:18:22	4-Aug-09	54.4
397	13.2	41.9	42	0.339	13:19:22	4-Aug-09	52.7
398	125.8	42	42	0.7036	13:20:22	4-Aug-09	59.5
399	25	41.9	41	0.7794	13:21:22	4-Aug-09	60.2
400	43	41.9	41	0.4652	13:22:22	4-Aug-09	61.5
401	66.3	41.9	41	1.0918	13:23:22	4-Aug-09	63.9
402	13.2	41.9	41	0.5177	13:24:22	4-Aug-09	49.7
403	9.2	41.8	41	0.3709	13:25:22	4-Aug-09	48.9
404	9.7	41.9	41	1.6889	13:26:22	4-Aug-09	47.5
405	12.1	41.8	41	0.4982	13:27:22	4-Aug-09	32.8
406	48.9	41.8	41	0.4443	13:28:22	4-Aug-09	29.6
407	126.7	41.8	42	1.0146	13:29:22	4-Aug-09	36.4
408	7.3	41.7	42	0.7396	13:30:22	4-Aug-09	35.9
409	13.3	41.7	42	0.7659	13:31:22	4-Aug-09	35.5
410	10.7	41.7	42	0.4289	13:32:22	4-Aug-09	35.3
411	298.9	41.7	42	0.6641	13:33:22	4-Aug-09	52.2
412	214.6	41.7	42	1.1692	13:34:22	4-Aug-09	64.9
413	13.5	41.7	43	2.0422	13:35:22	4-Aug-09	64.9
414	11.7	41.7	42	1.867	13:36:22	4-Aug-09	57.8
415	12.8	41.7	42	0.7539	13:37:22	4-Aug-09	57.0
416	68.6	41.7	42	0.9723	13:38:22	4-Aug-09	58.6
417	127.4	41.8	42	0.965	13:39:22	4-Aug-09	62.4
418	43.7	41.8	43	0.8566	13:40:22	4-Aug-09	64.3
419	19.3	41.8	42	0.5441	13:41:22	4-Aug-09	65.0
420	22.4	41.8	42	0.5012	13:42:22	4-Aug-09	65.7
421	667.5	41.8	43	1.0461	13:43:22	4-Aug-09	106.7
422	35.6	41.8	42	2.8722	13:44:22	4-Aug-09	105.9
423	15.1	41.9	42	1.12	13:45:22	4-Aug-09	98.9
424	13.1	41.9	42	2.8634	13:46:22	4-Aug-09	99.3
425	11.6	41.9	42	0.8999	13:47:22	4-Aug-09	99.2
426	14.6	41.9	42	0.6543	13:48:22	4-Aug-09	99.4
427	80.8	41.9	42	0.763	13:49:22	4-Aug-09	85.8
428	131.3	42	42	1.0532	13:50:22	4-Aug-09	80.6
429	35.6	42	42	0.477	13:51:22	4-Aug-09	81.9
430	8.5	41.9	42	0.5074	13:52:22	4-Aug-09	81.7
431	109.5	42	42	0.7282	13:53:22	4-Aug-09	87.8
432	222.5	42	42	0.956	13:54:22	4-Aug-09	97.4
433	42.3	42	42	0.5588	13:55:22	4-Aug-09	92.1
434	25.4	42	42	0.8623	13:56:22	4-Aug-09	90.9
435	8.1	42	42	0.7377	13:57:22	4-Aug-09	90.2
436	72.1	42.1	42	0.8119	13:58:22	4-Aug-09	93.4
437	45	42.1	42	1.6826	13:59:22	4-Aug-09	54.4
438	39	42.1	42	2.5811	14:00:22	4-Aug-09	54.7
439	14	42.1	42	2.1028	14:01:22	4-Aug-09	54.6
440	15.9	42.1	41	0.5905	14:02:22	4-Aug-09	54.8
441	470.5	42.1	41	0.8762	14:03:22	4-Aug-09	83.4
442	58.9	42.2	41	0.7963	14:04:22	4-Aug-09	86.2

DataRam 4 Dust Monitor, Serial Number D464

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
351	18.7	34	44	0.2207	12:25:52	4-Aug-09	19.0
352	18	34	44	0.2065	12:26:52	4-Aug-09	19.0
353	17.5	34.1	44	0.2099	12:27:52	4-Aug-09	18.8
354	17.3	34.1	44	0.2168	12:28:52	4-Aug-09	18.8
355	17.8	34.1	43	0.205	12:29:52	4-Aug-09	18.7
356	21.5	34.2	44	0.2376	12:30:52	4-Aug-09	18.9
357	18.3	34.2	44	0.2136	12:31:52	4-Aug-09	18.8
358	18.1	34.2	44	0.2069	12:32:52	4-Aug-09	18.7
359	18.1	34.2	44	0.2035	12:33:52	4-Aug-09	18.7
360	18.2	34.3	44	0.2048	12:34:52	4-Aug-09	18.6
361	18.8	34.3	44	0.2223	12:35:52	4-Aug-09	18.7
362	19.3	34.4	44	0.2151	12:36:52	4-Aug-09	18.5
363	18.8	34.4	43	0.2072	12:37:52	4-Aug-09	18.5
364	18.7	34.4	43	0.208	12:38:52	4-Aug-09	18.5
365	18.5	34.5	43	0.1905	12:39:52	4-Aug-09	18.5
366	19.5	34.5	43	0.1896	12:40:52	4-Aug-09	18.6
367	19.5	34.5	44	0.2144	12:41:52	4-Aug-09	18.6
368	19.6	34.6	44	0.215	12:42:52	4-Aug-09	18.7
369	19	34.6	43	0.2107	12:43:52	4-Aug-09	18.8
370	19.9	34.6	43	0.2076	12:44:52	4-Aug-09	19.0
371	19.5	34.7	43	0.2051	12:45:52	4-Aug-09	19.1
372	19.1	34.7	43	0.2094	12:46:52	4-Aug-09	18.9
373	19.2	34.8	43	0.2067	12:47:52	4-Aug-09	19.0
374	19.3	34.8	43	0.2308	12:48:52	4-Aug-09	19.1
375	20	34.8	43	0.2205	12:49:52	4-Aug-09	19.2
376	19.4	34.9	43	0.2301	12:50:52	4-Aug-09	19.3
377	19.4	34.9	43	0.2355	12:51:52	4-Aug-09	19.3
378	19.3	34.9	43	0.2158	12:52:52	4-Aug-09	19.3
379	18.9	35	43	0.2137	12:53:52	4-Aug-09	19.3
380	19.5	35	43	0.217	12:54:52	4-Aug-09	19.4
381	19.2	35	42	0.1979	12:55:52	4-Aug-09	19.4
382	18.5	35	42	0.2055	12:56:52	4-Aug-09	19.3
383	20.9	35	42	0.2306	12:57:52	4-Aug-09	19.4
384	18.7	35.1	42	0.2095	12:58:52	4-Aug-09	19.4
385	20.8	35.1	42	0.2334	12:59:52	4-Aug-09	19.5
386	19.6	35.1	42	0.2498	13:00:52	4-Aug-09	19.5
387	19.8	35.1	41	0.2366	13:01:52	4-Aug-09	19.5
388	19.2	35.1	41	0.2187	13:02:52	4-Aug-09	19.5
389	18.8	35.1	41	0.2173	13:03:52	4-Aug-09	19.5
390	17.5	35.1	41	0.2046	13:04:52	4-Aug-09	19.3
391	18.1	35.1	41	0.1994	13:05:52	4-Aug-09	19.2
392	18.6	35.1	41	0.2092	13:06:52	4-Aug-09	19.2
393	18.7	35.1	41	0.2078	13:07:52	4-Aug-09	19.1
394	18.9	35.1	41	0.2049	13:08:52	4-Aug-09	19.1
395	19	35.2	41	0.2292	13:09:52	4-Aug-09	19.1
396	17.9	35.2	40	0.2094	13:10:52	4-Aug-09	19.0
397	17.7	35.2	40	0.2113	13:11:52	4-Aug-09	18.9
398	17.7	35.2	40	0.2209	13:12:52	4-Aug-09	18.9
399	19	35.2	40	0.2328	13:13:52	4-Aug-09	18.8
400	17.3	35.3	40	0.2021	13:14:52	4-Aug-09	18.7
401	17.1	35.3	40	0.2041	13:15:52	4-Aug-09	18.4
402	17.6	35.3	40	0.201	13:16:52	4-Aug-09	18.3
403	17.7	35.3	39	0.2003	13:17:52	4-Aug-09	18.2
404	17.1	35.3	39	0.181	13:18:52	4-Aug-09	18.0
405	17.1	35.3	39	0.2055	13:19:52	4-Aug-09	17.9
406	17.2	35.4	39	0.2078	13:20:52	4-Aug-09	17.9
407	18.3	35.4	39	0.2298	13:21:52	4-Aug-09	17.9
408	17.6	35.4	39	0.2099	13:22:52	4-Aug-09	17.9
409	17.7	35.4	39	0.2175	13:23:52	4-Aug-09	17.8
410	17.2	35.4	39	0.1983	13:24:52	4-Aug-09	17.7
411	17.6	35.4	39	0.2121	13:25:52	4-Aug-09	17.6
412	18.2	35.4	39	0.2157	13:26:52	4-Aug-09	17.6
413	17.5	35.4	39	0.1978	13:27:52	4-Aug-09	17.6
414	19.8	35.4	39	0.2294	13:28:52	4-Aug-09	17.8
415	18.7	35.4	39	0.2399	13:29:52	4-Aug-09	17.7
416	17.3	35.4	39	0.1925	13:30:52	4-Aug-09	17.7
417	18.3	35.4	39	0.2142	13:31:52	4-Aug-09	17.8
418	18.8	35.4	39	0.231	13:32:52	4-Aug-09	17.9
419	18.6	35.4	39	0.227	13:33:52	4-Aug-09	17.9
420	17.7	35.4	39	0.2151	13:34:52	4-Aug-09	18.0
421	18.7	35.4	39	0.2113	13:35:52	4-Aug-09	18.1
422	18.1	35.5	39	0.2085	13:36:52	4-Aug-09	18.1
423	17.9	35.5	39	0.2032	13:37:52	4-Aug-09	18.1
424	18.9	35.5	39	0.2304	13:38:52	4-Aug-09	18.2
425	19.4	35.5	39	0.2401	13:39:52	4-Aug-09	18.3
426	24.4	35.5	39	0.2974	13:40:52	4-Aug-09	18.7
427	17.8	35.5	39	0.2139	13:41:52	4-Aug-09	18.8
428	18	35.5	39	0.2139	13:42:52	4-Aug-09	18.7
429	24.8	35.6	39	0.2871	13:43:52	4-Aug-09	19.2
430	32.3	35.6	39	0.3664	13:44:52	4-Aug-09	20.0
431	21.8	35.5	39	0.2406	13:45:52	4-Aug-09	20.2
432	20	35.6	39	0.2602	13:46:52	4-Aug-09	20.3
433	21.5	35.6	39	0.2555	13:47:52	4-Aug-09	20.5
434	23	35.6	39	0.2611	13:48:52	4-Aug-09	20.8
435	22.3	35.6	39	0.2577	13:49:52	4-Aug-09	21.0
436	28	35.6	39	0.2735	13:50:52	4-Aug-09	21.7
437	20.3	35.6	39	0.2504	13:51:52	4-Aug-09	21.8
438	18.4	35.7	39	0.2222	13:52:52	4-Aug-09	21.8
439	17.7	35.7	39	0.2068	13:53:52	4-Aug-09	21.8
440	18	35.7	39	0.2156	13:54:52	4-Aug-09	21.7
441	17.8	35.7	39	0.2158	13:55:52	4-Aug-09	21.6
442	18.6	35.7	39	0.2232	13:56:52	4-Aug-09	21.3
443	17.4	35.7	39	0.2048	13:57:52	4-Aug-09	21.2
444	21.8	35.7	39	0.273	13:58:52	4-Aug-09	21.5
445	30.2	35.8	39	0.3322	13:59:52	4-Aug-09	21.8
446	18.4	35.8	39	0.2183	14:00:52	4-Aug-09	21.0
447	34.7	35.9	39	0.2123	14:01:52	4-Aug-09	21.8
448	31	35.9	39	0.3604	14:02:52	4-Aug-09	22.4
449	18.9	35.9	39	0.2537	14:03:52	4-Aug-09	22.3
450	19.5	36	39	0.2348	14:04:52	4-Aug-09	22.1

Appendix I
Ambient Air Dust Monitoring Results - SEAD-12 Removal Action

Seneca Army Depot Activity
Romulus, NY

DataRam 4 Dust Monitor, Serial Number D454

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
443	32.6	42.2	41	0.5487	14:05:22	4-Aug-09	83.2
444	11.3	42.2	41	0.8961	14:06:22	4-Aug-09	75.7
445	11.4	42.3	42	0.8829	14:07:22	4-Aug-09	74.2
446	10.7	42.3	41	0.4938	14:08:22	4-Aug-09	74.3
447	9.3	42.3	41	0.7642	14:09:22	4-Aug-09	68.1
448	9.7	42.3	41	0.6568	14:10:22	4-Aug-09	54.8
449	27.7	42.3	41	2.9692	14:11:22	4-Aug-09	53.9
450	28.4	42.3	41	1.1394	14:12:22	4-Aug-09	54.0
451	10.9	42.3	41	0.545	14:13:22	4-Aug-09	54.2
452	9.8	42.4	41	0.5544	14:14:22	4-Aug-09	50.3
453	22	42.4	41	2.2376	14:15:22	4-Aug-09	48.9
454	78.8	42.4	41	1.3421	14:16:22	4-Aug-09	51.4
455	337.8	42.4	41	0.9637	14:17:22	4-Aug-09	71.6
456	14.8	42.5	40	0.4582	14:18:22	4-Aug-09	71.5
457	13.9	42.5	40	0.6763	14:19:22	4-Aug-09	43.0
458	32.7	42.5	40	0.8846	14:20:22	4-Aug-09	41.4
459	185.4	42.5	40	1.0364	14:21:22	4-Aug-09	50.9
460	8.1	42.5	40	0.6186	14:22:22	4-Aug-09	50.7
461	16.5	42.5	40	0.6996	14:23:22	4-Aug-09	51.0
462	9.4	42.5	40	2.3204	14:24:22	4-Aug-09	51.0
463	138.4	42.5	40	2.7421	14:25:22	4-Aug-09	59.0
464	31.4	42.5	40	1.0814	14:26:22	4-Aug-09	60.4
465	10.7	42.5	40	1.1123	14:27:22	4-Aug-09	59.3
466	13.7	42.6	40	0.7603	14:28:22	4-Aug-09	58.4
467	13.6	42.6	40	0.803	14:29:22	4-Aug-09	58.6
468	282.9	42.6	40	0.7263	14:30:22	4-Aug-09	75.6
469	101.2	42.6	40	2.2007	14:31:22	4-Aug-09	80.6
470	13.7	42.6	40	1.1596	14:32:22	4-Aug-09	76.5
471	10.7	42.7	40	0.6943	14:33:22	4-Aug-09	56.1
472	12.2	42.6	40	3.2485	14:34:22	4-Aug-09	55.9
473	9.3	42.7	40	3.2612	14:35:22	4-Aug-09	55.6
474	10.1	42.7	40	3.5016	14:36:22	4-Aug-09	54.2
475	9.6	42.7	40	3.5872	14:37:22	4-Aug-09	43.2
476	58	42.7	40	2.8407	14:38:22	4-Aug-09	46.3
477	23.4	42.8	40	1.003	14:39:22	4-Aug-09	46.8
478	17.5	42.7	39	0.5951	14:40:22	4-Aug-09	47.3
479	16.8	42.7	39	0.7704	14:41:22	4-Aug-09	39.7
480	19.6	42.7	39	0.842	14:42:22	4-Aug-09	38.9
481	50.3	42.9	39	0.7995	14:43:22	4-Aug-09	41.4
482	181.2	42.8	39	1.0181	14:44:22	4-Aug-09	51.9
483	49.7	42.9	38	1.1792	14:45:22	4-Aug-09	54.1
484	23.1	42.8	38	1.6417	14:46:22	4-Aug-09	37.9
485	26	42.9	38	0.8199	14:47:22	4-Aug-09	33.2
486	24.3	42.8	38	0.9238	14:48:22	4-Aug-09	33.9
487	28.5	42.8	38	1.5859	14:49:22	4-Aug-09	35.0
488	332.6	42.8	38	1.6337	14:50:22	4-Aug-09	55.0
489	48	42.8	38	1.3627	14:51:22	4-Aug-09	57.4
490	98.1	42.8	38	1.4691	14:52:22	4-Aug-09	62.9
491	46	42.8	38	3.0589	14:53:22	4-Aug-09	65.2
492	37.6	42.8	38	4.0463	14:54:22	4-Aug-09	63.9
493	26	42.9	38	4.127	14:55:22	4-Aug-09	64.1
494	215.1	42.9	38	4.127	14:56:22	4-Aug-09	76.4
495	48.4	42.8	38	3.9277	14:57:22	4-Aug-09	78.4
496	33	42.8	38	4.127	14:58:22	4-Aug-09	79.2
497	61.9	42.9	38	3.9165	14:59:22	4-Aug-09	80.0
498	26.3	42.9	38	4.127	15:00:22	4-Aug-09	70.3
499	226.2	42.9	38	4.127	15:01:22	4-Aug-09	81.3
500	157.1	42.9	38	2.1825	15:02:22	4-Aug-09	89.7
501	27.3	42.9	38	4.0446	15:03:22	4-Aug-09	89.8
502	33.3	43	38	4.127	15:04:22	4-Aug-09	90.3
503	30	42.8	38	4.127	15:05:22	4-Aug-09	90.4
504	26.1	42.8	38	3.6255	15:06:22	4-Aug-09	71.3
505	27.3	42.9	38	0.753	15:07:22	4-Aug-09	70.0
506	27.2	43	38	0.6481	15:08:22	4-Aug-09	65.6
507	341.3	43	38	0.5296	15:09:22	4-Aug-09	84.0
508	19.9	43	38	0.2487	15:10:22	4-Aug-09	82.9
509	14.9	43	38	0.1344	15:11:22	4-Aug-09	82.2
510	219	43	38	0.22	15:12:22	4-Aug-09	82.5
511	25.5	43	38	0.2021	15:13:22	4-Aug-09	81.0
512	15.3	43	37	0.0497	15:14:22	4-Aug-09	79.9
513	251.9	43	37	0.1976	15:15:22	4-Aug-09	91.8
514	76.5	43.1	37	0.4618	15:16:22	4-Aug-09	94.9
515	12.7	43	37	0.0346	15:17:22	4-Aug-09	81.6
516	10.8	43.1	37	0.0403	15:18:22	4-Aug-09	72.4
517	15.3	43.1	37	0.028	15:19:22	4-Aug-09	71.7
518	23.2	43	37	0.0294	15:20:22	4-Aug-09	71.1
519	186	43	37	0.2607	15:21:22	4-Aug-09	80.8
520	44.7	43	37	0.2208	15:22:22	4-Aug-09	82.0
521	35	43.1	37	0.1258	15:23:22	4-Aug-09	82.5
522	39	43	37	0.1552	15:24:22	4-Aug-09	83.2
523	33.7	43	37	0.1573	15:25:22	4-Aug-09	64.0
524	30.1	43	37	0.1361	15:26:22	4-Aug-09	64.6
525	50.6	43	37	0.2011	15:27:22	4-Aug-09	66.8
526	232.5	43.1	37	0.2448	15:28:22	4-Aug-09	67.7
527	105	43	37	0.3919	15:29:22	4-Aug-09	72.6
528	31.8	43	37	0.2179	15:30:22	4-Aug-09	73.7
529	28.6	42.9	37	0.1661	15:31:22	4-Aug-09	59.7
530	26.4	42.9	37	0.1784	15:32:22	4-Aug-09	56.6
531	30.7	43	37	0.1873	15:33:22	4-Aug-09	57.7
532	130.6	43	37	0.2416	15:34:22	4-Aug-09	65.2
533	63.3	42.9	37	0.3324	15:35:22	4-Aug-09	68.2
534	63.1	43	37	0.3039	15:36:22	4-Aug-09	70.7
535	146.2	43	38	0.5135	15:37:22	4-Aug-09	68.2
536	258.8	42.9	38	0.3702	15:38:22	4-Aug-09	81.6
537	73.3	43	37	0.4203	15:39:22	4-Aug-09	84.0
538	29.3	43	37	0.1795	15:40:22	4-Aug-09	83.4
539	39.7	42.9	38	0.1922	15:41:22	4-Aug-09	83.8
540	31.7	43	37	0.1855	15:42:22	4-Aug-09	83.9
541	35.3	43	37	0.1829	15:43:22	4-Aug-09	82.9
542	56.7	43.1	37	0.21	15:44:22	4-Aug-09	71.9

DataRam 4 Dust Monitor, Serial Number D464

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
451	18.6	36	39	0.2135	14:05:52	4-Aug-09	21.8
452	17.1	36	39	0.1986	14:06:52	4-Aug-09	21.2
453	17.2	36.1	39	0.1801	14:07:52	4-Aug-09	21.0
454	17.5	36.1	38	0.1962	14:08:52	4-Aug-09	20.9
455	17.9	36.2	38	0.2088	14:09:52	4-Aug-09	20.9
456	18.9	36.2	38	0.2026	14:10:52	4-Aug-09	21.0
457	17.9	36.2	38	0.2167	14:11:52	4-Aug-09	21.0
458	17.9	36.3	38	0.2062	14:12:52	4-Aug-09	20.9
459	18.1	36.3	37	0.2208	14:13:52	4-Aug-09	21.0
460	18.5	36.3	37	0.213	14:14:52	4-Aug-09	20.8
461	17.9	36.4	37	0.2111	14:15:52	4-Aug-09	20.0
462	18.6	36.4	37	0.2035	14:16:52	4-Aug-09	20.0
463	18	36.4	37	0.2151	14:17:52	4-Aug-09	19.0
464	18	36.5	37	0.2267	14:18:52	4-Aug-09	18.2
465	17.9	36.5	37	0.1982	14:19:52	4-Aug-09	18.1
466	18.7	36.5	37	0.1998	14:20:52	4-Aug-09	18.0
467	17.9	36.5	37	0.2149	14:21:52	4-Aug-09	18.0
468	17.6	36.6	37	0.1966	14:22:52	4-Aug-09	18.0
469	17.7	36.6	37	0.2021	14:23:52	4-Aug-09	18.1
470	17.9	36.6	37	0.2097	14:24:52	4-Aug-09	18.1
471	17.1	36.6	37	0.1914	14:25:52	4-Aug-09	18.0
472	17.8	36.6	37	0.2136	14:26:52	4-Aug-09	18.0
473	17.5	36.7	36	0.1967	14:27:52	4-Aug-09	17.9
474	17.2	36.7	36	0.2013	14:28:52	4-Aug-09	17.9
475	17.3	36.7	36	0.2087	14:29:52	4-Aug-09	17.9
476	17.6	36.7	36	0.2074	14:30:52	4-Aug-09	17.8
477	18.2	36.7	36	0.2036	14:31:52	4-Aug-09	17.8
478	17.8	36.8	37	0.2039	14:32:52	4-Aug-09	17.8
479	17.5	36.8	36	0.2076	14:33:52	4-Aug-09	17.7
480	17.4	36.8	36	0.1985	14:34:52	4-Aug-09	17.7
481	18	36.8	36	0.2007	14:35:52	4-Aug-09	17.7
482	16.8	36.9	36	0.1871	14:36:52	4-Aug-09	17.6
483	17	36.9	36	0.1853	14:37:52	4-Aug-09	17.5
484	16.7	36.9	36	0.185	14:38:52	4-Aug-09	17.5
485	17	36.9	36	0.1919	14:39:52	4-Aug-09	17.4
486	16.1	37	36	0.2	14:40:52	4-Aug-09	17.3
487	16.6	37	35	0.182	14:41:52	4-Aug-09	17.3
488	16.9	37	35	0.1941	14:42:52	4-Aug-09	17.2
489	17.1	37.1	35	0.2031	14:43:52	4-Aug-09	17.2
490	17.7	37.1	35	0.213	14:44:52	4-Aug-09	17.2
491	17.5	37.1	35	0.1989	14:45:52	4-Aug-09	17.2
492	17.2	37.1	35	0.1921	14:46:52	4-Aug-09	17.2
493	18.3	37.1	35	0.2087	14:47:52	4-Aug-09	17.2
494	17.6	37.1	35	0.1989	14:48:52	4-Aug-09	17.2
495	18.4	37.2	35	0.2049	14:49:52	4-Aug-09	17.3
496	18.3	37.2	35	0.2061	14:50:52	4-Aug-09	17.3
497	17.9	37.2	35	0.2042	14:51:52	4-Aug-09	17.3
498	18.1	37.2	35	0.2205	14:52:52	4-Aug-09	17.4
499	18.7	37.2	34	0.2119	14:53:52	4-Aug-09	17.5
500	19	37.2	35	0.2285	14:54:52	4-Aug-09	17.7
501	18.8	37.2	35	0.2098	14:55:52	4-Aug-09	17.8
502	18.3	37.2	35	0.2131	14:56:52	4-Aug-09	17.9
503	18.1	37.3	35	0.2116	14:57:52	4-Aug-09	18.0
504	18.3	37.3	35	0.2051	14:58:52	4-Aug-09	18.1
505	16.8	37.3	35	0.1948	14:59:52	4-Aug-09	18.1
506	17.7	37.4	34	0.1949	15:00:52	4-Aug-09	18.1
507	18.5	37.4	34	0.2157	15:01:52	4-Aug-09	18.1
508	17.8	37.4	34	0.199	15:02:52	4-Aug-09	18.2
509	17.8	37.4	34	0.1983	15:03:52	4-Aug-09	18.1
510	18.1	37.5	34	0.203	15:04:52	4-Aug-09	18.2
511	17.7	37.5	34	0.2017	15:05:52	4-Aug-09	18.1
512	17.2	37.5	34	0.2002	15:06:52	4-Aug-09	18.1
513	17.5	37.5	34	0.1869	15:07:52	4-Aug-09	18.0
514	17.5	37.5	34	0.1892	15:08:52	4-Aug-09	18.0
515	17.3	37.6	34	0.1913	15:09:52	4-Aug-09	17.9
516	17.4	37.6	34	0.1941	15:10:52	4-Aug-09	17.8
517	17.8	37.6	33	0.2035	15:11:52	4-Aug-09	17.7
518	17.8	37.7	33	0.2126	15:12:52	4-Aug-09	17.7
519	17.8	37.7	33	0.2139	15:13:52	4-Aug-09	17.7
520	17.5	37.7	33	0.202	15:14:52	4-Aug-09	17.6
521	17.5	37.8	33	0.2046	15:15:52	4-Aug-09	17.7
522	17.6	37.8	33	0.2038	15:16:52	4-Aug-09	17.7
523	17.2	37.8	33	0.1926	15:17:52	4-Aug-09	17.6
524	17.8	37.8	33	0.2111	15:18:52	4-Aug-09	17.6
525	17.7	37.8	33	0.2145	15:19:52	4-Aug-09	17.6
526	17.9	37.9	33	0.198	15:20:52	4-Aug-09	17.6
527	17.8	37.9	33	0.2014	15:21:52	4-Aug-09	17.6
528	17.7	37.9	33	0.1898	15:22:52	4-Aug-09	17.6
529	17.5	37.9	33	0.1858	15:23:52	4-Aug-09	17.6
530	17.4	37.9	33	0.1966	15:24:52	4-Aug-09	17.6
531	17.3	37.9	33	0.1894	15:25:52	4-Aug-09	17.6
532	18.4	37.9	33	0.2098	15:26:52	4-Aug-09	17.7
533	18.1	37.9	32	0.2157	15:27:52	4-Aug-09	17.7
534	17.7	37.9	32	0.1844	15:28:52	4-Aug-09	17.7
535	19.3	37.9	32	0.215	15:29:52	4-Aug-09	17.8
536	17.6	37.9	32	0.1955	15:30:52	4-Aug-09	17.8
537	19	37.9	32	0.1918	15:31:52	4-Aug-09	17.9
538	19.3	37.9	33	0.2179	15:32:52	4-Aug-09	18.0
539	19.2	37.9	33	0.2192	15:33:52	4-Aug-09	18.1
540	18.4	37.9	33	0.2045	15:34:52	4-Aug-09	18.1
541	17	37.9	33	0.1796	15:35:52	4-Aug-09	18.1
542	17.6	37.9	33	0.1975	15:36:52	4-Aug-09	18.1
543	18	37.9	33	0.196	15:37:52	4-Aug-09	18.1
544	18.4	37.9	33	0.2075	15:38:52	4-Aug-09	18.1
545	18.3	37.9	33	0.199	15:39:52	4-Aug-09	18.2
546	18	38	33	0.1919	15:40:52	4-Aug-09	18.2
547	18.3	38	33	0.2061	15:41:52	4-Aug-09	18.3
548	18.6	38	33	0.2142	15:42:52	4-Aug-09	18.3
549	17.9	38	33	0.197	15:43:52	4-Aug-09	18.3
550	18.9	38	33	0.2074	15:44:52	4-Aug-09	18.4

Appendix I
Ambient Air Dust Monitoring Results - SEAD-12 Removal Action

Seneca Army Depot Activity
Romulus, NY

DataRam 4 Dust Monitor, Serial Number D454

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
543	113.7	43	37	0.3588	15:45:22	4-Aug-09	72.5
544	97.2	43	37	0.3534	15:46:22	4-Aug-09	76.5
545	43.1	43	37	0.2273	15:47:22	4-Aug-09	77.4
546	38.5	42.9	37	0.2087	15:48:22	4-Aug-09	78.2
547	418.1	42.9	38	0.2602	15:49:22	4-Aug-09	102.4
548	111.1	42.9	37	0.4169	15:50:22	4-Aug-09	101.2
549	103.3	42.9	38	0.4251	15:51:22	4-Aug-09	103.7
550	112	42.9	38	0.4137	15:52:22	4-Aug-09	106.8
551	36.9	42.9	38	0.1896	15:53:22	4-Aug-09	99.9
552	36.4	42.9	38	0.1777	15:54:22	4-Aug-09	86.0
553	206.7	42.8	38	0.2811	15:55:22	4-Aug-09	94.4
554	92.7	42.8	38	0.4692	15:56:22	4-Aug-09	98.3
555	54.2	42.9	38	0.2924	15:57:22	4-Aug-09	99.2
556	126.4	42.8	38	0.3598	15:58:22	4-Aug-09	105.1
557	54.5	42.8	38	0.3476	15:59:22	4-Aug-09	106.3
558	49.4	42.8	38	0.2467	16:00:22	4-Aug-09	105.9
559	88.4	42.8	38	0.2539	16:01:22	4-Aug-09	104.3
560	42.3	42.7	38	0.2526	16:02:22	4-Aug-09	100.9
561	39.1	42.8	38	0.2186	16:03:22	4-Aug-09	100.6
562	136.9	42.7	38	0.3175	16:04:22	4-Aug-09	106.8
563	58.7	42.7	38	0.2795	16:05:22	4-Aug-09	84.3
564	48.5	42.7	38	0.2597	16:06:22	4-Aug-09	80.4
565	63.6	42.7	38	0.273	16:07:22	4-Aug-09	77.9
566	67.9	42.7	38	0.2966	16:08:22	4-Aug-09	75.2
567	46.8	42.7	38	0.2409	16:09:22	4-Aug-09	75.8
568	46.4	42.7	38	0.2411	16:10:22	4-Aug-09	76.4
569	45.8	42.7	38	0.2095	16:11:22	4-Aug-09	66.4
570	68.2	42.7	38	0.2698	16:12:22	4-Aug-09	64.8
571	40.5	42.6	38	0.2071	16:13:22	4-Aug-09	64.0
572	37.4	42.6	39	0.1814	16:14:22	4-Aug-09	58.4
573	40.8	42.6	39	0.1931	16:15:22	4-Aug-09	57.5
574	38	42.6	39	0.1879	16:16:22	4-Aug-09	56.8
575	38.1	42.6	39	0.1828	16:17:22	4-Aug-09	53.7
576	38.2	42.6	39	0.1849	16:18:22	4-Aug-09	53.4
577	39	42.6	39	0.1893	16:19:22	4-Aug-09	53.4
578	47.7	42.6	39	0.1946	16:20:22	4-Aug-09	47.9
579	551.9	42.6	39	0.3582	16:21:22	4-Aug-09	78.7
580	137.9	42.6	39	0.5609	16:22:22	4-Aug-09	84.3
581	66.2	42.6	39	0.3365	16:23:22	4-Aug-09	84.4
582	48.2	42.6	39	0.2463	16:24:22	4-Aug-09	83.2
583	48.9	42.6	39	0.2268	16:25:22	4-Aug-09	83.3
584	41.1	42.6	39	0.2068	16:26:22	4-Aug-09	83.0
585	39.1	42.6	39	0.1804	16:27:22	4-Aug-09	82.6
586	77.1	42.6	39	0.2363	16:28:22	4-Aug-09	83.1
587	47.1	42.6	39	0.233	16:29:22	4-Aug-09	83.5
588	41	42.6	39	0.1919	16:30:22	4-Aug-09	83.8
589	41.2	42.6	39	0.1938	16:31:22	4-Aug-09	83.8
590	43.3	42.6	39	0.1938	16:32:22	4-Aug-09	84.1
591	40.3	42.6	39	0.1859	16:33:22	4-Aug-09	84.3
592	44.9	42.6	39	0.1953	16:34:22	4-Aug-09	84.7
593	49.3	42.6	38	0.2025	16:35:22	4-Aug-09	85.3
594	53.9	42.6	38	0.2192	16:36:22	4-Aug-09	85.7
595	60.2	42.6	38	0.2392	16:37:22	4-Aug-09	55.0
596	44.7	42.6	38	0.2233	16:38:22	4-Aug-09	49.2
597	42.4	42.6	38	0.1847	16:39:22	4-Aug-09	47.7
598	49.4	42.6	37	0.1961	16:40:22	4-Aug-09	47.7

DataRam 4 Dust Monitor, Serial Number D464

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
551	18.4	38	33	0.1966	15:45:52	4-Aug-09	18.3
552	17.5	38	32	0.182	15:46:52	4-Aug-09	18.3
553	18.3	38	33	0.1995	15:47:52	4-Aug-09	18.3
554	18.3	38.1	33	0.1963	15:48:52	4-Aug-09	18.2
555	19.6	38.1	33	0.2028	15:49:52	4-Aug-09	18.2
556	19.4	38.1	33	0.2059	15:50:52	4-Aug-09	18.3
557	18.9	38.1	33	0.2001	15:51:52	4-Aug-09	18.4
558	19.2	38.1	33	0.1948	15:52:52	4-Aug-09	18.5
559	18.5	38.1	33	0.1991	15:53:52	4-Aug-09	18.5
560	18.8	38.1	33	0.192	15:54:52	4-Aug-09	18.6
561	18.2	38.1	33	0.1983	15:55:52	4-Aug-09	18.6
562	18.7	38.1	33	0.1932	15:56:52	4-Aug-09	18.6
563	19.1	38.1	33	0.2053	15:57:52	4-Aug-09	18.6
564	19.1	38.1	33	0.2078	15:58:52	4-Aug-09	18.7
565	19.4	38.1	32	0.2101	15:59:52	4-Aug-09	18.8
566	18.7	38	32	0.2046	16:00:52	4-Aug-09	18.8
567	19.2	38.1	33	0.1976	16:01:52	4-Aug-09	18.8
568	19.3	38.1	33	0.2073	16:02:52	4-Aug-09	18.9
569	18.8	38.1	33	0.2012	16:03:52	4-Aug-09	19.0
570	18.8	38.1	32	0.2107	16:04:52	4-Aug-09	19.0
571	19.1	38	33	0.1954	16:05:52	4-Aug-09	19.0
572	19.6	38	33	0.2056	16:06:52	4-Aug-09	19.0
573	19.5	38	33	0.2093	16:07:52	4-Aug-09	19.0
574	19.3	38	33	0.1964	16:08:52	4-Aug-09	19.0
575	19.3	38	33	0.2002	16:09:52	4-Aug-09	19.1
576	19.9	38	33	0.1902	16:10:52	4-Aug-09	19.1
577	19.6	38	33	0.1933	16:11:52	4-Aug-09	19.2
578	20.4	38	33	0.2144	16:12:52	4-Aug-09	19.3
579	20.3	38	33	0.199	16:13:52	4-Aug-09	19.4
580	20.6	38	33	0.2135	16:14:52	4-Aug-09	19.5
581	20.8	38	33	0.201	16:15:52	4-Aug-09	19.6
582	20.2	38	33	0.1903	16:16:52	4-Aug-09	19.7
583	19.8	38	33	0.2009	16:17:52	4-Aug-09	19.7
584	20.7	38	33	0.2128	16:18:52	4-Aug-09	19.8
585	20.5	37.9	33	0.2045	16:19:52	4-Aug-09	19.9
586	19.9	38	33	0.196	16:20:52	4-Aug-09	20.0
587	20.5	37.9	33	0.1992	16:21:52	4-Aug-09	20.1
588	21.3	38	33	0.2027	16:22:52	4-Aug-09	20.2
589	22	37.9	33	0.2217	16:23:52	4-Aug-09	20.3
590	21.2	37.9	33	0.2022	16:24:52	4-Aug-09	20.4
591	21.7	37.9	33	0.2163	16:25:52	4-Aug-09	20.6
592	22.1	37.9	33	0.2138	16:26:52	4-Aug-09	20.7
593	21.9	37.9	34	0.1966	16:27:52	4-Aug-09	20.9
594	21.8	37.9	33	0.1987	16:28:52	4-Aug-09	21.0
595	22	37.9	33	0.2038	16:29:52	4-Aug-09	21.1
596	22.4	37.9	33	0.2191	16:30:52	4-Aug-09	21.2
597	22.9	37.9	33	0.2066	16:31:52	4-Aug-09	21.3
598	22.2	37.9	33	0.2083	16:32:52	4-Aug-09	21.4
599	22.4	37.9	33	0.2185	16:33:52	4-Aug-09	21.6
600	22.4	37.9	33	0.2168	16:34:52	4-Aug-09	21.7
601	22	37.9	33	0.2022	16:35:52	4-Aug-09	21.8
602	23.3	37.9	33	0.2179	16:36:52	4-Aug-09	22.0

1	9.4	24.7	40	0.3171	6:04:41	5-Aug-09	
2	9.9	24.7	43	0.4776	6:05:41	5-Aug-09	
3	8.7	24.6	46	0.45	6:06:41	5-Aug-09	
4	9.6	24.6	47	0.4753	6:07:41	5-Aug-09	
5	8.5	24.6	49	0.3851	6:08:41	5-Aug-09	
6	8.6	24.5	50	0.5001	6:09:41	5-Aug-09	
7	8.3	26.2	52	0.4037	6:10:41	5-Aug-09	
8	8.6	28.4	54	0.4587	6:11:41	5-Aug-09	
9	8.5	28.5	55	0.5133	6:12:41	5-Aug-09	
10	9	28.9	56	0.5218	6:13:41	5-Aug-09	
11	8.1	28.9	56	0.4997	6:14:41	5-Aug-09	
12	8.7	28	56	0.4378	6:15:41	5-Aug-09	
13	8.8	24.3	54	0.5132	6:16:41	5-Aug-09	
14	9.4	24.3	54	0.5738	6:17:41	5-Aug-09	
15	8.3	24.3	55	0.5103	6:18:41	5-Aug-09	
16	9.4	24.2	55	0.5505	6:19:41	5-Aug-09	8.9
17	8.4	24.2	55	0.4935	6:20:41	5-Aug-09	8.8
18	8.9	24.2	56	0.6102	6:21:41	5-Aug-09	8.7
19	8.7	24.7	56	0.3901	6:22:41	5-Aug-09	8.7
20	8.6	26.7	58	0.4185	6:23:41	5-Aug-09	8.7
21	9.2	28.5	59	0.6601	6:24:41	5-Aug-09	8.7
22	8.3	28.6	60	0.3943	6:25:41	5-Aug-09	8.7
23	8.9	28.6	60	0.4356	6:26:41	5-Aug-09	8.7
24	9.1	28.5	60	0.4715	6:27:41	5-Aug-09	8.8
25	8.8	25.1	58	0.4362	6:28:41	5-Aug-09	8.8
26	9.3	24.1	57	0.4547	6:29:41	5-Aug-09	8.8
27	8.8	24	57	0.495	6:30:41	5-Aug-09	8.9
28	9.4	24	58	0.6359	6:31:41	5-Aug-09	8.9
29	9.8	24	58	0.688	6:32:41	5-Aug-09	9.0
30	9.4	24	58	0.5549	6:33:41	5-Aug-09	9.0
31	10.1	24	58	0.6056	6:34:41	5-Aug-09	9.1
32	8.8	24	58	0.5536	6:35:41	5-Aug-09	9.0
33	9.6	24	58	0.4785	6:36:41	5-Aug-09	9.1
34	9.5	23.9	59	0.4136	6:37:41	5-Aug-09	9.1
35	9.3	23.9	59	0.544	6:38:41	5-Aug-09	9.2
36	9.1	23.9	59	0.4875	6:39:41	5-Aug-09	9.2
37	9.1	23.9	59	0.4503	6:40:41	5-Aug-09	9.2
38	10	23.9	59	0.6333	6:41:41	5-Aug-09	9.3

1	4	24	40	0.3791	6:01:55	5-Aug-09	
2	3.7	24	42	0.3681	6:02:55	5-Aug-09	
3	3.4	23.9	43	0.3687	6:03:55	5-Aug-09	
4	3.7	23.8	45	0.3728	6:04:55	5-Aug-09	
5	3.7	23.8	46	0.4163	6:05:55	5-Aug-09	
6	3.7	23.7	47	0.4302	6:06:55	5-Aug-09	
7	3.5	23.7	47	0.3728	6:07:55	5-Aug-09	
8	4.1	23.7	48	0.4107	6:08:55	5-Aug-09	
9	3.2	23.6	49	0.3975	6:09:55	5-Aug-09	
10	2.8	23.6	49	0.4	6:10:55	5-Aug-09	
11	2.8	23.6	50	0.4049	6:11:55	5-Aug-09	
12	2.8	23.5	50	0.3769	6:12:55	5-Aug-09	
13	3.2	23.5	51	0.4393	6:13:55	5-Aug-09	
14	2.9	23.5	51	0.4078	6:14:55	5-Aug-09	
15	3.7	23.4	51	0.3531	6:15:55	5-Aug-09	
16	3.2	23.4	52	0.3385	6:16:55	5-Aug-09	3.4
17	2.9	23.3	52	0.3286	6:17:55	5-Aug-09	3.3
18	2.7	23.3	52	0.3448	6:18:55	5-Aug-09	3.3
19	3	23.3	52	0.4102	6:19:55	5-Aug-09	3.2
20	2.8	23.2	53	0.4099	6:20:55	5-Aug-09	3.2
21	2.4	23.2	53	0.4034	6:21:55	5-Aug-09	3.1
22	3.3	23.2	53	0.4086	6:22:55	5-Aug-09	3.1
23	3.2	23.2	53	0.3973	6:23:55	5-Aug-09	3.1
24	3.5	23.1	54	0.3964	6:24:55	5-Aug-09	3.0
25	2.9	23.1	54	0.354	6:25:55	5-Aug-09	3.0
26	2.9	23.1	54	0.3319	6:26:55	5-Aug-09	3.0
27	2.9	23	54	0.349	6:27:55	5-Aug-09	3.0
28	3.4	23	54	0.3536	6:28:55	5-Aug-09	3.1
29	3.8	23	55	0.3565	6:29:55	5-Aug-09	3.1
30	3.4	23	55	0.3543	6:30:55	5-Aug-09	3.1
31	3.2	23	55	0.3813	6:31:55	5-Aug-09	3.1
32	3.6	22.9	55	0.3953	6:32:55	5-Aug-09	3.1
33	3.5	22.9	55	0.3619	6:33:55	5-Aug-09	3.2
34	3.2	22.8	55	0.3364	6:34:55	5-Aug-09	3.2
35	3.4	22.8	56	0.3491	6:35:55	5-Aug-09	3.2
36	3.8	22.8	56	0.3974	6:36:55	5-Aug-09	3.3
37	2.8	22.7	56	0.4006	6:37:55	5-Aug-09	3.3
38	3.7	22.7	56	0.3923	6:38:55	5-Aug-09	3.3
39	3.6	22.7	56	0.3645	6:39:55	5-Aug-09	3.4
40	3.7	22.7	56	0.4271	6:40:55	5-Aug-09	3.4
41	3.4	22.7	57	0.4151	6:41:55	5-Aug-09	3.4

Appendix I
Ambient Air Dust Monitoring Results - SEAD-12 Removal Action

Seneca Army Depot Activity
Romulus, NY

DataRam 4 Dust Monitor, Serial Number D454

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
39	10.2	23.8	60	0.4685	6:42:41	5-Aug-09	9.4
40	9.9	23.8	60	0.4166	6:43:41	5-Aug-09	9.4
41	10.2	23.8	60	0.5132	6:44:41	5-Aug-09	9.5
42	10	23.8	60	0.5611	6:45:41	5-Aug-09	9.6
43	10.3	23.8	60	0.6312	6:46:41	5-Aug-09	9.7
44	10.1	23.7	60	0.6149	6:47:41	5-Aug-09	9.7
45	11.1	23.7	60	0.6216	6:48:41	5-Aug-09	9.8
46	9.4	23.7	60	0.5274	6:49:41	5-Aug-09	9.8
47	8.8	23.8	60	0.5021	6:50:41	5-Aug-09	9.7
48	8.6	23.9	61	0.5342	6:51:41	5-Aug-09	9.7
49	8.8	24.3	61	0.4237	6:52:41	5-Aug-09	9.7
50	8.7	24.4	61	0.5617	6:53:41	5-Aug-09	9.6
51	8.6	24.5	61	0.5985	6:54:41	5-Aug-09	9.6
52	9.3	24.5	61	0.5434	6:55:41	5-Aug-09	9.6
53	9.5	24.5	61	0.754	6:56:41	5-Aug-09	9.6
54	15.1	24.5	61	0.5475	6:57:41	5-Aug-09	9.9
55	10.2	24.7	62	0.6141	6:58:41	5-Aug-09	9.9
56	12.7	24.6	62	0.6717	6:59:41	5-Aug-09	10.1
57	21.1	25.1	62	0.855	7:00:41	5-Aug-09	10.8
58	9.1	25.1	62	0.4578	7:01:41	5-Aug-09	10.7
59	9	24.9	62	0.4933	7:02:41	5-Aug-09	10.6
60	10.5	24.9	62	0.5291	7:03:41	5-Aug-09	10.7
61	9.9	25.1	63	0.5534	7:04:41	5-Aug-09	10.6
62	10.1	25.1	63	0.4635	7:05:41	5-Aug-09	10.6
63	12.3	25.1	63	0.4994	7:06:41	5-Aug-09	10.8
64	9.9	25	63	0.5311	7:07:41	5-Aug-09	10.9
65	9.7	24.9	63	0.5539	7:08:41	5-Aug-09	11.0
66	9.5	25.1	63	0.4975	7:09:41	5-Aug-09	11.0
67	9.2	25	63	0.5017	7:10:41	5-Aug-09	11.1
68	58.1	25	64	0.6769	7:11:41	5-Aug-09	14.1
69	12.4	24.9	64	0.5287	7:12:41	5-Aug-09	14.3
70	14.2	24.9	64	0.433	7:13:41	5-Aug-09	14.2
71	11	24.9	64	0.4573	7:14:41	5-Aug-09	14.3
72	9.1	24.7	64	0.6144	7:15:41	5-Aug-09	14.1
73	10.3	24.9	64	0.6701	7:16:41	5-Aug-09	13.4
74	43.2	25	64	0.7206	7:17:41	5-Aug-09	15.5
75	10.6	25	64	0.58	7:18:41	5-Aug-09	15.6
76	16.5	24.9	64	0.5207	7:19:41	5-Aug-09	16.0
77	9.7	24.9	64	0.6438	7:20:41	5-Aug-09	16.0
78	8.3	25	64	0.4705	7:21:41	5-Aug-09	15.9
79	8.8	25	64	0.4516	7:22:41	5-Aug-09	15.7
80	34.1	24.8	64	0.5089	7:23:41	5-Aug-09	17.2
81	10.8	24.9	64	0.6087	7:24:41	5-Aug-09	17.2
82	16.9	24.9	64	0.5526	7:25:41	5-Aug-09	17.7
83	9.8	24.8	64	0.4823	7:26:41	5-Aug-09	17.7
84	8.3	24.8	64	0.519	7:27:41	5-Aug-09	14.6
85	8.9	24.8	64	0.5272	7:28:41	5-Aug-09	14.4
86	8.5	24.7	64	0.4602	7:29:41	5-Aug-09	14.1
87	42.1	24.9	64	0.9552	7:30:41	5-Aug-09	16.0
88	20.2	24.8	64	1.0212	7:31:41	5-Aug-09	16.7
89	14.3	24.8	64	0.7863	7:32:41	5-Aug-09	16.9
90	8.5	25	64	0.5825	7:33:41	5-Aug-09	14.8
91	9.9	24.6	64	0.6094	7:34:41	5-Aug-09	14.7
92	20	24.9	64	0.5974	7:35:41	5-Aug-09	14.9
93	27.9	24.7	64	0.589	7:36:41	5-Aug-09	16.1
94	10.6	24.8	64	0.599	7:37:41	5-Aug-09	16.2
95	15.3	24.7	64	0.5482	7:38:41	5-Aug-09	16.6
96	13.2	24.7	64	0.6544	7:39:41	5-Aug-09	15.3
97	8.5	24.6	64	0.6653	7:40:41	5-Aug-09	15.2
98	8.1	24.6	64	0.4826	7:41:41	5-Aug-09	14.6
99	9.1	24.6	64	0.5871	7:42:41	5-Aug-09	14.6
100	10.4	24.6	64	0.581	7:43:41	5-Aug-09	14.7
101	12.6	24.4	63	0.6459	7:44:41	5-Aug-09	15.0
102	38	24.6	63	0.7574	7:45:41	5-Aug-09	16.8
103	9.3	24.5	63	0.888	7:46:41	5-Aug-09	14.7
104	12.7	24.7	63	0.5244	7:47:41	5-Aug-09	14.3
105	8.1	24.7	63	0.6263	7:48:41	5-Aug-09	13.9
106	7.4	24.6	63	0.8176	7:49:41	5-Aug-09	13.8
107	15.3	24.8	63	0.6471	7:50:41	5-Aug-09	14.2
108	10.6	24.6	63	0.6136	7:51:41	5-Aug-09	13.6
109	7.8	24.5	63	0.7092	7:52:41	5-Aug-09	12.3
110	12.2	24.6	63	0.4815	7:53:41	5-Aug-09	12.4
111	7.8	24.7	63	0.5123	7:54:41	5-Aug-09	11.9
112	30.6	24.8	63	1.0072	7:55:41	5-Aug-09	13.0
113	9.2	24.7	63	0.5999	7:56:41	5-Aug-09	13.1
114	24.2	24.7	63	0.5796	7:57:41	5-Aug-09	14.1
115	21.6	24.7	63	0.7931	7:58:41	5-Aug-09	14.9
116	8.5	24.7	63	0.646	7:59:41	5-Aug-09	14.7
117	45.5	24.7	63	0.7643	8:00:41	5-Aug-09	16.8
118	14.8	24.6	63	0.6415	8:01:41	5-Aug-09	15.4
119	7.3	24.9	63	0.5317	8:02:41	5-Aug-09	15.2
120	12	24.6	63	0.6084	8:03:41	5-Aug-09	15.2
121	8.4	24.7	63	0.6319	8:04:41	5-Aug-09	15.2
122	9.6	24.7	62	0.801	8:05:41	5-Aug-09	15.3
123	12.2	24.7	63	0.6837	8:06:41	5-Aug-09	15.1
124	14	24.6	63	0.5138	8:07:41	5-Aug-09	15.4
125	8	24.8	63	0.498	8:08:41	5-Aug-09	15.4
126	7.1	24.8	62	0.4698	8:09:41	5-Aug-09	15.1
127	8.3	24.8	63	0.7174	8:10:41	5-Aug-09	15.1
128	7.5	24.9	63	0.6473	8:11:41	5-Aug-09	13.6
129	8	24.7	62	0.6875	8:12:41	5-Aug-09	13.6
130	7.3	24.5	62	0.6363	8:13:41	5-Aug-09	12.5
131	6.9	24.6	62	0.5075	8:14:41	5-Aug-09	11.6
132	7.6	24.6	62	0.7882	8:15:41	5-Aug-09	11.5
133	7.6	24.8	62	0.6076	8:16:41	5-Aug-09	9.2
134	7.2	24.7	62	0.6385	8:17:41	5-Aug-09	8.7
135	7.3	24.6	62	0.6076	8:18:41	5-Aug-09	8.7
136	67.8	24.6	62	0.7308	8:19:41	5-Aug-09	12.2
137	14.8	24.6	62	0.8241	8:20:41	5-Aug-09	12.6
138	7.9	24.7	62	0.6018	8:21:41	5-Aug-09	12.5

DataRam 4 Dust Monitor, Serial Number D464

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
42	3.1	22.6	57	0.3816	6:42:55	5-Aug-09	3.4
43	3.6	22.6	57	0.3505	6:43:55	5-Aug-09	3.5
44	3.4	22.6	57	0.348	6:44:55	5-Aug-09	3.5
45	2.8	22.6	57	0.3612	6:45:55	5-Aug-09	3.4
46	3.5	22.5	57	0.3717	6:46:55	5-Aug-09	3.4
47	3.2	22.5	57	0.378	6:47:55	5-Aug-09	3.4
48	3.9	22.5	58	0.3368	6:48:55	5-Aug-09	3.4
49	3	22.5	58	0.3644	6:49:55	5-Aug-09	3.4
50	3.1	22.4	58	0.3608	6:50:55	5-Aug-09	3.4
51	2.7	22.4	58	0.3535	6:51:55	5-Aug-09	3.3
52	2.9	22.4	58	0.351	6:52:55	5-Aug-09	3.3
53	2.7	22.4	58	0.3507	6:53:55	5-Aug-09	3.3
54	3	22.3	58	0.3541	6:54:55	5-Aug-09	3.2
55	3.5	22.3	58	0.3928	6:55:55	5-Aug-09	3.2
56	3.1	22.3	58	0.4205	6:56:55	5-Aug-09	3.2
57	4	22.2	58	0.4329	6:57:55	5-Aug-09	3.2
58	3.4	22.2	59	0.3991	6:58:55	5-Aug-09	3.2
59	3.3	22.2	59	0.392	6:59:55	5-Aug-09	3.2
60	3.3	22.2	59	0.3492	7:00:55	5-Aug-09	3.2
61	3.2	22.1	59	0.3359	7:01:55	5-Aug-09	3.2
62	3.5	22.1	59	0.3408	7:02:55	5-Aug-09	3.2
63	3.1	22.1	59	0.3449	7:03:55	5-Aug-09	3.2
64	3.6	22.1	59	0.3453	7:04:55	5-Aug-09	3.2
65	3.3	22.1	60	0.3366	7:05:55	5-Aug-09	3.2
66	3.6	22	60	0.3506	7:06:55	5-Aug-09	3.3
67	3.5	22	60	0.3562	7:07:55	5-Aug-09	3.3
68	3.5	22	60	0.3485	7:08:55	5-Aug-09	3.4
69	3.6	22	60	0.3509	7:09:55	5-Aug-09	3.4
70	3	22	60	0.3364	7:10:55	5-Aug-09	3.4
71	3.1	22	60	0.3356	7:11:55	5-Aug-09	3.4
72	3.6	22	60	0.3383	7:12:55	5-Aug-09	3.4
73	3.1	21.9	60	0.3482	7:13:55	5-Aug-09	3.4
74	3.5	21.9	60	0.3487	7:14:55	5-Aug-09	3.4
75	3.1	21.9	60	0.3769	7:15:55	5-Aug-09	3.4
76	3	21.9	61	0.3613	7:16:55	5-Aug-09	3.3
77	3.3	21.9	61	0.3596	7:17:55	5-Aug-09	3.3
78	3.5	21.9	60	0.3547	7:18:55	5-Aug-09	3.3
79	3.2	21.9	61	0.358	7:19:55	5-Aug-09	3.3
80	2.9	21.8	61	0.3686	7:20:55	5-Aug-09	3.3
81	3.3	21.8	61	0.3701	7:21:55	5-Aug-09	3.3
82	3.2	21.8	61	0.3484	7:22:55	5-Aug-09	3.3
83	3.1	21.8	61	0.347	7:23:55	5-Aug-09	3.3
84	3.4	21.8	61	0.3745	7:24:55	5-Aug-09	3.2
85	2.3	21.8	61	0.3596	7:25:55	5-Aug-09	3.2
86	3.4	21.8	61	0.3874	7:26:55	5-Aug-09	3.2
87	3.1	21.8	61	0.396	7:27:55	5-Aug-09	3.2
88	3.1	21.8	61	0.4024	7:28:55	5-Aug-09	3.2
89	3	21.8	61	0.3773	7:29:55	5-Aug-09	3.2
90	2.9	21.8	61	0.3934	7:30:55	5-Aug-09	3.1
91	2.9	21.8	62	0.3682	7:31:55	5-Aug-09	3.1
92	2.5	21.8	61	0.352	7:32:55	5-Aug-09	3.1
93	2.7	21.8	61	0.3682	7:33:55	5-Aug-09	3.0
94	2.8	21.8	61	0.3591	7:34:55	5-Aug-09	3.0
95	2.9	21.8	61	0.3523	7:35:55	5-Aug-09	3.0
96	2.4	21.8	61	0.3475	7:36:55	5-Aug-09	2.9
97	2.8	21.8	61	0.3587	7:37:55	5-Aug-09	2.9
98	2.5	21.8	61	0.362	7:38:55	5-Aug-09	2.9
99	2.8	21.8	61	0.3565	7:39:55	5-Aug-09	2.8
100	2.8	21.8	61	0.3558	7:40:55	5-Aug-09	2.8
101	2.5	21.8	61	0.3517	7:41:55	5-Aug-09	2.8
102	2.5	21.8	61	0.3457	7:42:55	5-Aug-09	2.8
103	3	21.8	61	0.3634	7:43:55	5-Aug-09	2.8
104	1.8	21.8	61	0.3549	7:44:55	5-Aug-09	2.7
105	2.1	21.8	61	0.3579	7:45:55	5-Aug-09	2.6
106	2.5	21.8	61	0.4112	7:46:55	5-Aug-09	2.6
107	2.4	21.9	61	0.3779	7:47:55	5-Aug-09	2.6
108	2.5	21.9	61	0.355	7:48:55	5-Aug-09	2.6
109	2.4	21.9	61	0.3544	7:49:55	5-Aug-09	2.5
110	2.3	21.9	61	0.3567	7:50:55	5-Aug-09	2.5
111	2.6	21.9	61	0.349	7:51:55	5-Aug-09	2.5
112	1.8	21.9	61	0.3361	7:52:55	5-Aug-09	2.5
113	2.3	21.9	61	0.3305	7:53:55	5-Aug-09	2.4
114	2.5	21.9	61	0.3447	7:54:55	5-Aug-09	2.4
115	3.1	21.9	61	0.3896	7:55:55	5-Aug-09	2.4
116	2.1	21.9	61	0.3835	7:56:55	5-Aug-09	2.4
117	3	21.9	61	0.4038	7:57:55	5-Aug-09	2.4
118	2.6	21.9	61	0.3961	7:58:55	5-Aug-09	2.4
119	2.3	21.9	61	0.3982	7:59:55	5-Aug-09	2.4
120	2.4	21.9	61	0.3917	8:00:55	5-Aug-09	2.4
121	2.5	21.9	61	0.3938	8:01:55	5-Aug-09	2.5
122	2.8	21.9	61	0.4346	8:02:55	5-Aug-09	2.5
123	2.5	21.9	61	0.4346	8:03:55	5-Aug-09	2.5
124	2.6	21.9	61	0.4259	8:04:55	5-Aug-09	2.5
125	2.5	21.9	61	0.4149	8:05:55	5-Aug-09	2.5
126	2.3	21.9	61	0.4045	8:06:55	5-Aug-09	2.5
127	3.1	21.9	61	0.416	8:07:55	5-Aug-09	2.5
128	2.3	22	61	0.4018	8:08:55	5-Aug-09	2.6
129	2.9	22	61	0.388	8:09:55	5-Aug-09	2.6
130	1.7	22	61	0.3542	8:10:55	5-Aug-09	2.5
131	1.6	22	60	0.3533	8:11:55	5-Aug-09	2.5
132	2.2	22	60	0.3557	8:12:55	5-Aug-09	2.5
133	2.1	22	60	0.3507	8:13:55	5-Aug-09	2.4
134	2	22	60	0.3492	8:14:55	5-Aug-09	2.4
135	2.3	22	60	0.3515	8:15:55	5-Aug-09	2.4
136	1.4	22	60	0.3465	8:16:55	5-Aug-09	2.3
137	1.7	22	60	0.3485	8:17:55	5-Aug-09	2.3
138	1.9	22	60	0.3485	8:18:55	5-Aug-09	2.2
139	2.2	22	60	0.3502	8:19:55	5-Aug-09	2.2
140	1.9	22	60	0.3475	8:20:55	5-Aug-09	2.1
141	2	22	60	0.3482	8:21:55	5-Aug-09	2.1

Appendix I
Ambient Air Dust Monitoring Results - SEAD-12 Removal Action

Seneca Army Depot Activity
Romulus, NY

DataRam 4 Dust Monitor, Serial Number D454

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
139	8.2	24.6	62	0.7209	8:22:41	5-Aug-09	12.2
140	8.2	24.5	62	0.7309	8:23:41	5-Aug-09	11.9
141	8.2	24.7	62	0.7252	8:24:41	5-Aug-09	11.9
142	8.8	24.7	62	0.5191	8:25:41	5-Aug-09	12.0
143	15.8	24.6	61	0.6084	8:26:41	5-Aug-09	12.4
144	7.3	24.6	61	0.5795	8:27:41	5-Aug-09	12.4
145	7.2	24.7	61	0.5262	8:28:41	5-Aug-09	12.4
146	10.2	24.7	61	0.5553	8:29:41	5-Aug-09	12.6
147	6.9	24.8	61	0.4795	8:30:41	5-Aug-09	12.6
148	7.4	24.8	61	0.4232	8:31:41	5-Aug-09	12.6
149	7.8	24.8	61	0.5584	8:32:41	5-Aug-09	12.6
150	8.7	24.8	61	0.8786	8:33:41	5-Aug-09	12.7
151	140.3	24.6	61	0.7806	8:34:41	5-Aug-09	21.0
152	11.6	24.7	61	0.8845	8:35:41	5-Aug-09	17.5
153	9	24.7	61	0.4928	8:36:41	5-Aug-09	17.1
154	8.3	24.6	61	0.5606	8:37:41	5-Aug-09	17.1
155	7.9	24.7	61	0.5105	8:38:41	5-Aug-09	17.1
156	8.2	24.7	61	0.6215	8:39:41	5-Aug-09	17.1
157	7.9	24.6	61	0.5463	8:40:41	5-Aug-09	17.1
158	30.2	24.6	61	0.4955	8:41:41	5-Aug-09	18.4
159	9.5	24.8	61	0.5464	8:42:41	5-Aug-09	18.0
160	7.9	24.9	61	0.5966	8:43:41	5-Aug-09	18.1
161	8.3	24.7	61	0.4968	8:44:41	5-Aug-09	18.1
162	7.8	24.7	61	0.5291	8:45:41	5-Aug-09	18.0
163	8.8	24.6	60	0.6269	8:46:41	5-Aug-09	18.1
164	7.7	24.4	61	0.6729	8:47:41	5-Aug-09	18.1
165	8.6	24.4	61	0.8635	8:48:41	5-Aug-09	18.2
166	7.1	24.4	60	0.548	8:49:41	5-Aug-09	18.1
167	18.4	24.5	61	0.4989	8:50:41	5-Aug-09	10.5
168	7.5	24.3	60	0.6579	8:51:41	5-Aug-09	10.2
169	10.9	24.3	60	0.546	8:52:41	5-Aug-09	10.3
170	7.8	24.3	60	0.5199	8:53:41	5-Aug-09	10.3
171	8.5	24.1	60	0.5099	8:54:41	5-Aug-09	10.3
172	12.8	24	60	0.4405	8:55:41	5-Aug-09	10.6
173	41.1	24	60	0.7108	8:56:41	5-Aug-09	12.7
174	7.6	24.1	60	0.6372	8:57:41	5-Aug-09	11.3
175	9	24.1	60	0.5394	8:58:41	5-Aug-09	11.2
176	8.7	24.2	60	0.5191	8:59:41	5-Aug-09	11.3
177	9.3	23.9	60	0.7531	9:00:41	5-Aug-09	11.4
178	8.3	24	60	0.7126	9:01:41	5-Aug-09	11.4
179	30.6	24	60	0.6114	9:02:41	5-Aug-09	12.7
180	54.1	24	60	0.8146	9:03:41	5-Aug-09	15.6
181	25.5	24	60	0.6352	9:04:41	5-Aug-09	16.7
182	33.5	24	60	0.6896	9:05:41	5-Aug-09	18.4
183	8.2	24.1	60	0.481	9:06:41	5-Aug-09	17.7
184	14.1	24	60	0.5401	9:07:41	5-Aug-09	18.1
185	7.7	24.1	60	0.5406	9:08:41	5-Aug-09	17.9
186	8	24.1	60	0.4486	9:09:41	5-Aug-09	17.9
187	7.9	24.1	60	0.466	9:10:41	5-Aug-09	17.9
188	8.4	24.1	60	0.5163	9:11:41	5-Aug-09	17.6
189	8	24.1	60	0.4993	9:12:41	5-Aug-09	15.6
190	7.7	24.1	60	0.4809	9:13:41	5-Aug-09	15.6
191	9.7	24.2	60	0.5078	9:14:41	5-Aug-09	15.6
192	8.4	24.2	60	0.4694	9:15:41	5-Aug-09	15.6
193	8	24.2	60	0.428	9:16:41	5-Aug-09	15.5
194	8.8	24.2	60	0.4097	9:17:41	5-Aug-09	15.5
195	26	24.2	60	0.5285	9:18:41	5-Aug-09	15.3
196	9.2	24.2	60	0.4227	9:19:41	5-Aug-09	12.4
197	11	24.2	59	0.443	9:20:41	5-Aug-09	11.5
198	8.2	24.2	59	0.5029	9:21:41	5-Aug-09	10.0
199	8	24.2	59	0.499	9:22:41	5-Aug-09	9.9
200	8.9	24.2	59	0.4634	9:23:41	5-Aug-09	9.6
201	8.5	24.2	59	0.4075	9:24:41	5-Aug-09	9.7
202	8.7	24.3	59	0.406	9:25:41	5-Aug-09	9.7
203	8.5	24.3	59	0.376	9:26:41	5-Aug-09	9.8
204	9.6	24.3	59	0.4399	9:27:41	5-Aug-09	9.8
205	25.3	24.3	59	0.5566	9:28:41	5-Aug-09	10.9
206	9.5	24.3	59	0.5006	9:29:41	5-Aug-09	11.0
207	9.1	24.3	59	0.4295	9:30:41	5-Aug-09	11.0
208	8.6	24.3	59	0.4481	9:31:41	5-Aug-09	11.0
209	8.4	24.3	59	0.3993	9:32:41	5-Aug-09	11.0
210	10.3	24.4	59	0.4865	9:33:41	5-Aug-09	11.1
211	12	24.4	59	0.6011	9:34:41	5-Aug-09	10.2
212	31.9	24.4	59	0.7028	9:35:41	5-Aug-09	11.7
213	8.3	24.4	59	0.4868	9:36:41	5-Aug-09	11.5
214	19.1	24.4	59	0.5217	9:37:41	5-Aug-09	12.2
215	8.1	24.5	59	0.4245	9:38:41	5-Aug-09	12.2
216	11.6	24.5	59	0.4564	9:39:41	5-Aug-09	12.3
217	10.2	24.5	59	0.4448	9:40:41	5-Aug-09	12.5
218	8	24.5	59	0.4594	9:41:41	5-Aug-09	12.4
219	9.7	24.6	59	0.5342	9:42:41	5-Aug-09	12.5
220	18.1	24.6	58	0.7116	9:43:41	5-Aug-09	13.0
221	9.3	24.6	58	0.5853	9:44:41	5-Aug-09	12.0
222	9.5	24.6	58	0.4818	9:45:41	5-Aug-09	12.0
223	8.5	24.6	58	0.5212	9:46:41	5-Aug-09	12.0
224	10.5	24.6	58	0.5271	9:47:41	5-Aug-09	12.1
225	8.9	24.6	58	0.4426	9:48:41	5-Aug-09	12.1
226	8.4	24.7	59	0.3764	9:49:41	5-Aug-09	12.0
227	8.3	24.7	58	0.4263	9:50:41	5-Aug-09	11.8
228	8.5	24.7	58	0.4693	9:51:41	5-Aug-09	10.3
229	10	24.7	58	0.4449	9:52:41	5-Aug-09	10.4
230	10.2	24.7	58	0.3866	9:53:41	5-Aug-09	9.9
231	11.6	24.7	58	0.4006	9:54:41	5-Aug-09	10.1
232	8.9	24.7	58	0.4164	9:55:41	5-Aug-09	9.9
233	8.3	24.8	58	0.4456	9:56:41	5-Aug-09	9.8
234	19.2	24.8	58	0.4588	9:57:41	5-Aug-09	10.5
235	9.5	24.8	58	0.4159	9:58:41	5-Aug-09	10.5
236	8.3	24.8	58	0.3678	9:59:41	5-Aug-09	9.9
237	10	25.6	58	0.3933	10:00:41	5-Aug-09	9.9
238	9.2	28	60	0.3702	10:01:41	5-Aug-09	9.9

DataRam 4 Dust Monitor, Serial Number D464

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
142	2.1	22	60	0.3484	8:22:55	5-Aug-09	2.1
143	2.1	22	60	0.3485	8:23:55	5-Aug-09	2.0
144	1.3	22	60	0.3444	8:24:55	5-Aug-09	2.0
145	1.6	22	60	0.3461	8:25:55	5-Aug-09	1.9
146	2.2	22	60	0.3482	8:26:55	5-Aug-09	1.9
147	2.1	22	60	0.3464	8:27:55	5-Aug-09	1.9
148	2.5	22	60	0.3484	8:28:55	5-Aug-09	2.0
149	1.9	22	60	0.3458	8:29:55	5-Aug-09	2.0
150	2.8	22	60	0.3558	8:30:55	5-Aug-09	2.0
151	2.1	22	60	0.3554	8:31:55	5-Aug-09	2.0
152	2.2	22	59	0.3583	8:32:55	5-Aug-09	2.0
153	1.8	22	60	0.3568	8:33:55	5-Aug-09	2.0
154	2.4	22	59	0.3615	8:34:55	5-Aug-09	2.1
155	2.3	22	60	0.3618	8:35:55	5-Aug-09	2.1
156	2.2	22	59	0.3599	8:36:55	5-Aug-09	2.1
157	2.8	22	59	0.3633	8:37:55	5-Aug-09	2.2
158	2.1	22	59	0.3563	8:38:55	5-Aug-09	2.2
159	2.2	22	59	0.3615	8:39:55	5-Aug-09	2.2
160	1.9	22	59	0.359	8:40:55	5-Aug-09	2.2
161	2	22	59	0.3606	8:41:55	5-Aug-09	2.2
162	2	22	59	0.3597	8:42:55	5-Aug-09	2.2
163	2.1	22	59	0.3616	8:43:55	5-Aug-09	2.2
164	2.1	22	59	0.3616	8:44:55	5-Aug-09	2.2
165	2.7	22	59	0.4101	8:45:55	5-Aug-09	2.2
166	2.5	22	59	0.4481	8:46:55	5-Aug-09	2.2
167	2.5	22	59	0.4433	8:47:55	5-Aug-09	2.2
168	2.4	22	59	0.4429	8:48:55	5-Aug-09	2.3
169	2.4	22	59	0.4442	8:49:55	5-Aug-09	2.3
170	2.2	22.1	59	0.4319	8:50:55	5-Aug-09	2.3
171	2.7	22.1	60	0.4452	8:51:55	5-Aug-09	2.3
172	2.4	22.1	59	0.4176	8:52:55	5-Aug-09	2.3
173	2.3	22.1	59	0.4146	8:53:55	5-Aug-09	2.3
174	2.6	22.1	59	0.4029	8:54:55	5-Aug-09	2.3
175	2.7	22.1	59	0.3932	8:55:55	5-Aug-09	2.3
176	2.4	22.1	59	0.3877	8:56:55	5-Aug-09	2.4
177	2.4	22.1	60	0.3827	8:57:55	5-Aug-09	2.4
178	2.1	22.1	59	0.3482	8:58:55	5-Aug-09	2.4
179	1.9	22.1	59	0.347	8:59:55	5-Aug-09	2.4
180	2.6	22.1	59	0.3922	9:00:55	5-Aug-09	2.4
181	2.3	22.2	60	0.3989	9:01:55	5-Aug-09	2.4
182	2.9	22.2	59	0.4158	9:02:55	5-Aug-09	2.4
183	2.7	22.2	59	0.3702	9:03:55	5-Aug-09	2.4
184	2.3	22.2	60	0.3561	9:04:55	5-Aug-09	2.4
185	2.2	22.2	59	0.3622	9:05:55	5-Aug-09	2.4
186	2.9	22.2	59	0.3656	9:06:55	5-Aug-09	2.5
187	2.4	22.2	59	0.3837	9:07:55	5-Aug-09	2.4
188	2.4	22.2	59	0.3787	9:08:55	5-Aug-09	2.4
189	1.9	22.3	59	0.3473	9:09:55	5-Aug-09	2.4
190	2.4	22.3	59	0.3493	9:10:55	5-Aug-09	2.4
191	2.4	22.3	59	0.3586	9:11:55	5-Aug-09	2.4
192	2.8	22.3	59	0.3664	9:12:55	5-Aug-09	2.4
193	2.3	22.4	59	0.361	9:13:55	5-Aug-09	2.4
194	2.4	22.4	59	0.3608	9:14:55	5-Aug-09	2.4
195	3.2	22.4	59	0.3653	9:15:55	5-Aug-09	2.5
196	3.1	22.4	59	0.3503	9:16:55	5-Aug-09	2.5
197	2.8	22.4	59	0.3497	9:17:55	5-Aug-09	2.6
198	2.5	22.5	59	0.3492	9:18:55	5-Aug-09	2.5
199	2.7	22.5	59	0.3565	9:19:55	5-Aug-09	2.5
200	2.6	22.5	59	0.3512	9:20:55	5-Aug-09	2.6
201	3.8	22.5	59	0.3831	9:21:55	5-Aug-09	2.7
202	2.9	22.5	59	0.3554	9:22:55	5-Aug-09	2.7
203	3.5	22.5	59	0.3679	9:23:55	5-Aug-09	2.7
204	3.4	22.5	59	0.3557	9:24:55	5-Aug-09	2.8
205	2.9	22.6	59	0.3355	9:25:55	5-Aug-09	2.9
206	3.6	22.6	59	0.3382	9:26:55	5-Aug-09	2.9
207	3.4	22.6	59	0.3272	9:27:55	5-Aug-09	3.0
208	3.1	22.6	59	0.3355	9:28:55	5-Aug-09	3.0
209	3.2	22.6	59	0.3498	9:29:55	5-Aug-09	3.1
210	2.7	22.6	59	0.3583	9:30:55	5-Aug-09	3.1
211	3.1	22.6	59	0.3589	9:31:55	5-Aug-09	3.1
212	3	22.6	59	0.3493	9:32:55	5-Aug-09	3.1
213	2.7	22.6	59	0.3422	9:33:55	5-Aug-09	3.1
214	2.9	22.7	59	0.3427	9:34:55	5-Aug-09	3.1
215	2.8	22.7	59	0.3423	9:35:55	5-Aug-09	3.1
216	3.2	22.7	59	0.3703	9:36:55	5-Aug-09	3.1
217	3.1	22.7	59	0.4012	9:37:55	5-Aug-09	3.1
218	2.8	22.7	59	0.3747	9:38:55	5-Aug-09	3.1
219	3.1	22.7	59	0.3507	9:39:55	5-Aug-09	3.1
220	3.9	22.7	58	0.3813	9:40:55	5-Aug-09	3.1
221	3	22.8	58	0.3606	9:41:55	5-Aug-09	3.1
222	3.2	22.8	58	0.3627	9:42:55	5-Aug-09	3.1
223	2.8	22.9	58	0.3474	9:43:55	5-Aug-09	3.0
224	2.8	22.9	58	0.3416	9:44:55	5-Aug-09	3.0
225	3	22.9	58	0.3148	9:45:55	5-Aug-09	3.0
226	3.1	22.9	58	0.3232	9:46:55	5-Aug-09	3.0
227	2.9	22.9	58	0.3248	9:47:55	5-Aug-09	3.0
228	2.7	22.9	58	0.3078	9:48:55	5-Aug-09	3.0
229	2.2	23	58	0.3124	9:49:55	5-Aug-09	3.0
230	3.5	23	58	0.3034	9:50:55	5-Aug-09	3.0
231	3.7	23	58	0.3131	9:51:55	5-Aug-09	3.1
232	3.9	23	58	0.3237	9:52:55	5-Aug-09	3.1
233	3.3	23.1	58	0.3511	9:53:55	5-Aug-09	3.1
234	3.1	23.1	58	0.3529	9:54:55	5-Aug-09	3.1
235	3.7	23.1	58	0.3857	9:55:55	5-Aug-09	3.2
236	3.1	23.1	58	0.3682	9:56:55	5-Aug-09	3.1
237	3.5	23.1	58	0.3554	9:57:55	5-Aug-09	3.2
238	3.2	23.1	58	0.3497	9:58:55	5-Aug-09	3.2
239	3.7	23.2	58	0.3588	9:59:55	5-Aug-09	3.2
240	3.5	23.2	58	0.3466	10:00:55	5-Aug-09	3.3
241	2.2	23.2	58	0.3422	10:01:55	5-Aug-09	3.2

Appendix I
Ambient Air Dust Monitoring Results - SEAD-12 Removal Action

Seneca Army Depot Activity
Romulus, NY

DataRam 4 Dust Monitor, Serial Number D454

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
239	11.5	29.1	60	0.4018	10:02:41	5-Aug-09	10.1
240	22.9	28.8	60	0.7877	10:03:41	5-Aug-09	10.9
241	101	29.2	60	0.7288	10:04:41	5-Aug-09	16.6
242	32.4	29.2	60	0.9898	10:05:41	5-Aug-09	18.1
243	20.7	29.3	60	0.5575	10:06:41	5-Aug-09	18.9
244	6.8	29.3	60	0.5708	10:07:41	5-Aug-09	18.8
245	8.4	29.3	59	0.6005	10:08:41	5-Aug-09	18.7
246	15.9	29.3	59	0.6809	10:09:41	5-Aug-09	19.0
247	12	29.3	59	0.5849	10:10:41	5-Aug-09	19.1
248	75.2	28.9	59	0.5768	10:11:41	5-Aug-09	23.2
249	33.8	26.5	57	0.8451	10:12:41	5-Aug-09	24.8
250	24.7	26.4	57	1.022	10:13:41	5-Aug-09	25.1
251	16.3	26.2	57	1.0075	10:14:41	5-Aug-09	25.6
252	9.3	26.4	57	0.6371	10:15:41	5-Aug-09	25.6
253	8.5	26.7	56	0.454	10:16:41	5-Aug-09	25.5
254	9.5	26.7	57	0.6817	10:17:41	5-Aug-09	25.6
255	130.5	26.9	56	0.643	10:18:41	5-Aug-09	33.0
256	35.4	27.2	57	0.6818	10:19:41	5-Aug-09	33.8
257	70.7	27.3	57	0.7444	10:20:41	5-Aug-09	31.9
258	17.8	25.4	55	0.5161	10:21:41	5-Aug-09	31.0
259	13.7	25.3	55	0.6811	10:22:41	5-Aug-09	30.5
260	10.2	25.3	55	0.6542	10:23:41	5-Aug-09	30.7
261	7.9	25.3	55	0.4624	10:24:41	5-Aug-09	30.7
262	49.3	25.4	55	0.4367	10:25:41	5-Aug-09	32.8
263	11	25.4	55	0.538	10:26:41	5-Aug-09	32.7
264	10.3	25.4	55	0.4704	10:27:41	5-Aug-09	28.7
265	10.9	25.4	55	0.4998	10:28:41	5-Aug-09	27.3
266	7.7	25.4	55	0.3656	10:29:41	5-Aug-09	26.2
267	8.2	25.4	55	0.4672	10:30:41	5-Aug-09	25.7
268	7.7	25.5	55	0.3801	10:31:41	5-Aug-09	25.6
269	340.9	25.5	55	0.9631	10:32:41	5-Aug-09	46.4
270	7.2	25.5	55	0.6284	10:33:41	5-Aug-09	46.2
271	80.7	25.5	55	0.5247	10:34:41	5-Aug-09	43.1
272	11.2	25.5	55	0.5769	10:35:41	5-Aug-09	41.6
273	8	25.5	55	0.5409	10:36:41	5-Aug-09	37.7
274	7.9	25.5	55	0.4891	10:37:41	5-Aug-09	37.1
275	105.5	25.5	55	0.4987	10:38:41	5-Aug-09	42.8
276	79.1	25.5	55	0.7454	10:39:41	5-Aug-09	47.1
277	7.8	25.5	55	0.4586	10:40:41	5-Aug-09	47.1
278	21	25.5	55	0.5198	10:41:41	5-Aug-09	45.3
279	11.4	25.5	55	0.5159	10:42:41	5-Aug-09	45.3
280	11.8	25.5	55	0.455	10:43:41	5-Aug-09	45.4
281	11.5	25.6	56	0.5761	10:44:41	5-Aug-09	45.5
282	278.9	25.6	56	0.7986	10:45:41	5-Aug-09	62.4
283	50.8	25.5	55	1.0488	10:46:41	5-Aug-09	65.1
284	35.9	25.5	55	0.539	10:47:41	5-Aug-09	66.9
285	16.1	25.6	55	0.4639	10:48:41	5-Aug-09	46.6
286	10.7	25.6	56	0.4353	10:49:41	5-Aug-09	46.8
287	14.8	25.6	55	0.5076	10:50:41	5-Aug-09	42.7
288	10	25.6	55	0.4036	10:51:41	5-Aug-09	42.6
289	8.4	25.6	55	0.3757	10:52:41	5-Aug-09	42.6
290	201.9	25.6	55	0.6441	10:53:41	5-Aug-09	54.7
291	8.3	25.6	55	0.5126	10:54:41	5-Aug-09	48.7
292	8	25.6	55	0.6805	10:55:41	5-Aug-09	44.2
293	7.6	25.6	54	0.5634	10:56:41	5-Aug-09	44.2
294	7.7	25.6	54	0.5516	10:57:41	5-Aug-09	43.4
295	6.5	25.6	54	0.4465	10:58:41	5-Aug-09	43.1
296	7.3	25.7	54	0.4768	10:59:41	5-Aug-09	42.8
297	7.4	25.6	54	0.5892	11:00:41	5-Aug-09	42.5
298	8.4	25.7	54	0.5908	11:01:41	5-Aug-09	25.6
299	259.7	25.7	53	0.6862	11:02:41	5-Aug-09	38.7
300	10	25.7	53	0.5844	11:03:41	5-Aug-09	37.1
301	87.9	25.7	53	0.5623	11:04:41	5-Aug-09	41.5
302	8.8	25.8	53	0.4269	11:05:41	5-Aug-09	41.4
303	7.7	25.8	53	0.4172	11:06:41	5-Aug-09	41.0
304	10.8	25.8	53	0.4343	11:07:41	5-Aug-09	41.0
305	8.3	25.9	53	0.4733	11:08:41	5-Aug-09	41.0
306	42.5	25.9	53	0.5033	11:09:41	5-Aug-09	31.1
307	95.2	25.9	53	0.7992	11:10:41	5-Aug-09	36.5
308	10.2	25.9	53	0.4295	11:11:41	5-Aug-09	36.6
309	7.3	26	53	0.3815	11:12:41	5-Aug-09	36.6
310	16.3	26	53	0.6014	11:13:41	5-Aug-09	37.1
311	27.8	26	52	0.5297	11:14:41	5-Aug-09	38.5
312	8.5	26.1	52	0.4531	11:15:41	5-Aug-09	38.6
313	10.8	26.1	52	0.51	11:16:41	5-Aug-09	38.8
314	18.8	26.1	52	0.5985	11:17:41	5-Aug-09	39.4
315	13.1	26.2	52	0.5477	11:18:41	5-Aug-09	24.0
316	16.4	26.2	52	0.442	11:19:41	5-Aug-09	24.4
317	18.5	26.2	52	0.5441	11:20:41	5-Aug-09	20.1
318	146.7	26.3	52	0.7168	11:21:41	5-Aug-09	28.7
319	17	26.3	52	0.8363	11:22:41	5-Aug-09	29.3
320	181.9	27.1	52	0.7421	11:23:41	5-Aug-09	40.0
321	12.6	29.8	54	0.4254	11:24:41	5-Aug-09	40.2
322	18.6	26.5	51	0.4112	11:25:41	5-Aug-09	38.7
323	11.2	26.5	51	0.62	11:26:41	5-Aug-09	33.5
324	12.5	26.5	51	0.5414	11:27:41	5-Aug-09	33.6
325	75.8	26.6	51	0.7011	11:28:41	5-Aug-09	37.9
326	21.9	26.6	51	0.5097	11:29:41	5-Aug-09	38.3
327	8.9	26.6	51	0.568	11:30:41	5-Aug-09	37.1
328	15.4	26.6	51	0.5514	11:31:41	5-Aug-09	37.5
329	14.4	26.7	51	0.5437	11:32:41	5-Aug-09	37.7
330	12.5	26.7	51	0.5332	11:33:41	5-Aug-09	37.3
331	189.4	26.8	51	0.5327	11:34:41	5-Aug-09	48.4
332	169.5	26.8	51	1.0289	11:35:41	5-Aug-09	57.9
333	46.8	27.4	51	0.6052	11:36:41	5-Aug-09	59.7
334	30.7	30.4	53	0.5038	11:37:41	5-Aug-09	52.4
335	28.4	31.2	53	0.6604	11:38:41	5-Aug-09	53.2
336	28.1	30.5	53	0.5702	11:39:41	5-Aug-09	43.5
337	12.8	29.3	52	0.5166	11:40:41	5-Aug-09	43.6
338	9.9	30.1	52	0.4856	11:41:41	5-Aug-09	43.0

DataRam 4 Dust Monitor, Serial Number D464

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
242	2.2	23.2	57	0.3377	10:02:55	5-Aug-09	3.2
243	1.9	23.2	57	0.3412	10:03:55	5-Aug-09	3.1
244	2.2	23.3	57	0.354	10:04:55	5-Aug-09	3.1
245	2.1	23.3	57	0.3523	10:05:55	5-Aug-09	3.1
246	1.4	23.3	57	0.3489	10:06:55	5-Aug-09	2.9
247	1.9	23.4	57	0.3517	10:07:55	5-Aug-09	2.8
248	1.6	23.4	56	0.3503	10:08:55	5-Aug-09	2.7
249	2.1	23.4	56	0.3529	10:09:55	5-Aug-09	2.6
250	2.1	23.4	56	0.3537	10:10:55	5-Aug-09	2.5
251	2.2	23.5	56	0.3549	10:11:55	5-Aug-09	2.4
252	1.8	23.5	56	0.3518	10:12:55	5-Aug-09	2.4
253	1.9	23.5	56	0.3523	10:13:55	5-Aug-09	2.3
254	2	23.5	56	0.3528	10:14:55	5-Aug-09	2.2
255	2.1	23.6	56	0.3535	10:15:55	5-Aug-09	2.1
256	2.2	23.6	56	0.3585	10:16:55	5-Aug-09	2.0
257	1.7	23.6	56	0.3551	10:17:55	5-Aug-09	2.0
258	1.6	23.6	55	0.354	10:18:55	5-Aug-09	1.9
259	1.9	23.6	55	0.3567	10:19:55	5-Aug-09	1.9
260	2.4	23.6	55	0.3616	10:20:55	5-Aug-09	1.9
261	3	23.6	55	0.3965	10:21:55	5-Aug-09	2.0
262	2.6	23.7	55	0.3712	10:22:55	5-Aug-09	2.1
263	2.7	23.7	55	0.365	10:23:55	5-Aug-09	2.1
264	2.8	23.7	55	0.3518	10:24:55	5-Aug-09	2.2
265	2.6	23.7	55	0.3457	10:25:55	5-Aug-09	2.2
266	2.6	23.7	55	0.3456	10:26:55	5-Aug-09	2.3
267	2.8	23.7	55	0.3464	10:27:55	5-Aug-09	2.3
268	2.2	23.8	55	0.3489	10:28:55	5-Aug-09	2.3
269	2.5	23.8	55	0.3502	10:29:55	5-Aug-09	2.4
270	2.7	23.8	55	0.3692	10:30:55	5-Aug-09	2.4
271	2.1	23.8	55	0.3615	10:31:55	5-Aug-09	2.4
272	2.6	23.8	55	0.3689	10:32:55	5-Aug-09	2.4
273	1.5	23.8	55	0.3559	10:33:55	5-Aug-09	2.4
274	2.2	23.9	55	0.3642	10:34:55	5-Aug-09	2.5
275	2.3	23.9	55	0.3633	10:35:55	5-Aug-09	2.5
276	1.7	23.9	55	0.3564	10:36:55	5-Aug-09	2.4
277	2.4	23.9	55	0.3636	10:37:55	5-Aug-09	2.4
278	2.7	24	55	0.3681	10:38:55	5-Aug-09	2.4
279	2.8	24	55	0.3637	10:39:55	5-Aug-09	2.4
280	2.4	24	55	0.344	10:40:55	5-Aug-09	2.4
281	2.2	24	55	0.3422	10:41:55	5-Aug-09	2.4
282	2.6	24	55	0.343	10:42:55	5-Aug-09	2.4
283	2.5	24	55	0.3477	10:43:55	5-Aug-09	2.3
284	2.6	24.1	55	0.3575	10:44:55	5-Aug-09	2.4
285	2.6	24.1	55	0.357	10:45:55	5-Aug-09	2.4
286	2.6	24.1	54	0.3531	10:46:55	5-Aug-09	2.4
287	3.5	24.1	54	0.3865	10:47:55	5-Aug-09	2.5
288	2.5	24.1	54	0.3931	10:48:55	5-Aug-09	2.4
289	3.1	24.1	54	0.3933	10:49:55	5-Aug-09	2.5
290	3.2	24.1	54	0.3808	10:50:55	5-Aug-09	2.6
291	2.8	24.2	54	0.3434	10:51:55	5-Aug-09	2.6
292	2.2	24.2	54	0.3448	10:52:55	5-Aug-09	2.7
293	2.4	24.2	54	0.3458	10:53:55	5-Aug-09	2.7
294	2.1	24.2	54	0.3444	10:54:55	5-Aug-09	2.6
295	2	24.2	53	0.3445	10:55:55	5-Aug-09	2.6
296	1.7	24.2	53	0.3434	10:56:55	5-Aug-09	2.5
297	1.8	24.3	53	0.3392	10:57:55	5-Aug-09	2.5
298	1.9	24.3	53	0.3437	10:58:55	5-Aug-09	2.5
299	2	24.3	53	0.3378	10:59:55	5-Aug-09	2.4
300	2.1	24.3	53	0.3354	11:00:55	5-Aug-09	2.4
301	1.5	24.3	53	0.3354	11:01:55	5-Aug-09	2.3
302	2.6	24.3	53	0.334	11:02:55	5-Aug-09	2.3
303	1.8	24.4	53	0.3349	11:03:55	5-Aug-09	2.2
304	2.3	24.4	53	0.3342	11:04:55	5-Aug-09	2.2
305	2	24.4	53	0.3348	11:05:55	5-Aug-09	2.2
306	2.3	24.5	52	0.3362	11:06:55	5-Aug-09	2.1
307	2.1	24.5	52	0.3371	11:07:55	5-Aug-09	2.1
308	2.3	24.5	52	0.3371	11:08:55	5-Aug-09	2.1
309	2.7	24.5	52	0.3354	11:09:55	5-Aug-09	2.1
310	2.7	24.6	52	0.3298	11:10:55	5-Aug-09	2.1
311	2.6	24.6	52	0.338	11:11:55	5-Aug-09	2.2
312	2.4	24.6	52	0.3375	11:12:55	5-Aug-09	2.2
313	1.9	24.7	52	0.3375	11:13:55	5-Aug-09	2.2
314	2.3	24.7	52	0.3375	11:14:55	5-Aug-09	2.2
315	2	24.7	52	0.3375	11:15:55	5-Aug-09	2.2
316	1.7	24.7	52	0.3375	11:16:55	5-Aug-09	2.2
317	2.3	24.8	52	0.3472	11:17:55	5-Aug-09	2.3
318	2.1	24.9	51	0.347	11:18:55	5-Aug-09	2.2
319	2.3	24.9	51	0.3727	11:19:55	5-Aug-09	2.3
320	2.5	24.9	51	0.3905	11:20:55	5-Aug-09	2.3
321	2.2	25	51	0.3858	11:21:55	5-Aug-09	2.3
322	2	25	51	0.3797	11:22:55	5-Aug-09	2.3
323	2	25.1	51	0.3796	11:23:55	5-Aug-09	2.3
324	2.2	25.1	51	0.3835	11:24:55	5-Aug-09	2.2
325	2	25.2	51	0.3794	11:25:55	5-Aug-09	2.2
326	1.9	25.2	50	0.3776	11:26:55	5-Aug-09	2.2
327	1.4	25.2	50	0.3677	11:27:55	5-Aug-09	2.1
328	1.8	25.3	50	0.3757	11:28:55	5-Aug-09	2.0
329	1.9	25.3	50	0.3788	11:29:55	5-Aug-09	2.0
330	1.9	25.4	50	0.3682	11:30:55	5-Aug-09	2.0
331	2.6	25.4	50	0.3723	11:31:55	5-Aug-09	2.1
332	2.5	25.5	50	0.3685	11:32:55	5-Aug-09	2.1
333	2.3	25.5	50	0.3608	11:33:55	5-Aug-09	2.1
334	2.6	25.5	50	0.3608	11:34:55	5-Aug-09	2.1
335	1.8	25.6	50	0.3513	11:35:55	5-Aug-09	2.1
336	2.6	25.6	50	0.3525	11:36:55	5-Aug-09	2.1
337	2.8	25.7	49	0.3471	11:37:55	5-Aug-09	2.1
338	2.5	25.7	49	0.3464	11:38:55	5-Aug-09	2.2
339	2.5	25.8	49	0.3457	11:39:55	5-Aug-09	2.2
340	2.8	25.9	49	0.3742	11:40:55	5-Aug-09	2.2
341	2.5	25.9	49	0.3743	11:41:55	5-Aug-09	2.3

Appendix I
Ambient Air Dust Monitoring Results - SEAD-12 Removal Action

Seneca Army Depot Activity
Romulus, NY

DataRam 4 Dust Monitor, Serial Number D454

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
339	285.7	31.3	53	0.8772	11:42:41	5-Aug-09	60.2
340	14.7	31.5	53	0.6629	11:43:41	5-Aug-09	60.3
341	9.6	31.6	52	0.4659	11:44:41	5-Aug-09	56.2
342	53.3	31.6	52	0.5042	11:45:41	5-Aug-09	58.1
343	5.6	31.7	52	0.4237	11:46:41	5-Aug-09	57.9
344	16	31.7	52	2.4719	11:47:41	5-Aug-09	58.0
345	38.8	31.8	52	4.127	11:48:41	5-Aug-09	59.5
346	40.1	31.8	52	4.127	11:49:41	5-Aug-09	61.2
347	177.4	31.9	52	4.127	11:50:41	5-Aug-09	60.5
348	103.3	32	52	3.9632	11:51:41	5-Aug-09	56.3
349	47.5	32	52	4.127	11:52:41	5-Aug-09	56.4
350	36.5	30.8	51	3.4395	11:53:41	5-Aug-09	56.7
351	27.9	28.9	49	1.7669	11:54:41	5-Aug-09	56.7
352	16.8	28.5	49	0.275	11:55:41	5-Aug-09	56.0
353	203.9	28.7	49	1.7586	11:56:41	5-Aug-09	67.9
354	21.5	28.5	49	2.1993	11:57:41	5-Aug-09	68.7
355	118.1	28.3	48	0.741	11:58:41	5-Aug-09	58.2
356	28.3	28.5	48	0.8766	11:59:41	5-Aug-09	59.0
357	31.4	28.5	48	2.4356	12:00:41	5-Aug-09	60.4
358	20.1	28.3	48	1.2852	12:01:41	5-Aug-09	58.3
359	17.5	28.4	48	1.3756	12:02:41	5-Aug-09	59.1
360	16.1	28.2	48	1.347	12:03:41	5-Aug-09	59.1
361	19.8	28.2	48	1.1991	12:04:41	5-Aug-09	57.9
362	13.7	28.4	48	0.8994	12:05:41	5-Aug-09	56.2
363	19.6	28.3	48	2.1281	12:06:41	5-Aug-09	46.4
364	16.6	28.3	47	0.9163	12:07:41	5-Aug-09	41.0
365	11.8	28.4	47	0.5296	12:08:41	5-Aug-09	38.7
366	16.1	28.4	48	1.1644	12:09:41	5-Aug-09	37.5
367	13.8	28.4	48	1.4208	12:10:41	5-Aug-09	36.6
368	9.5	28.5	48	0.6459	12:11:41	5-Aug-09	36.1
369	10.7	28.5	48	0.5664	12:12:41	5-Aug-09	24.0
370	11.4	28.5	48	0.768	12:13:41	5-Aug-09	23.4
371	19.8	28.5	47	1.8805	12:14:41	5-Aug-09	17.3
372	8.1	28.6	47	0.2746	12:15:41	5-Aug-09	16.0
373	7.1	28.6	47	0.2053	12:16:41	5-Aug-09	14.5
374	5.8	28.6	47	0.1975	12:17:41	5-Aug-09	13.6
375	7.1	28.6	47	0.1986	12:18:41	5-Aug-09	12.9
376	6.3	28.6	47	0.2183	12:19:41	5-Aug-09	12.3
377	6.9	28.6	47	0.2191	12:20:41	5-Aug-09	11.5
378	5.4	28.6	47	0.2108	12:21:41	5-Aug-09	11.0
379	10.4	28.6	47	1.2584	12:22:41	5-Aug-09	10.4
380	10.3	28.6	47	1.3257	12:23:41	5-Aug-09	10.0
381	8.6	28.7	46	0.5471	12:24:41	5-Aug-09	9.8
382	5.7	28.7	46	0.2805	12:25:41	5-Aug-09	9.2
383	2.8	28.7	46	0.2526	12:26:41	5-Aug-09	8.5
384	3.1	28.7	46	0.2438	12:27:41	5-Aug-09	8.1
385	3.4	28.7	46	0.2416	12:28:41	5-Aug-09	7.6
386	3.8	28.7	46	0.2382	12:29:41	5-Aug-09	7.2
387	3	28.7	46	0.2413	12:30:41	5-Aug-09	6.1
388	4.1	28.7	46	0.2343	12:31:41	5-Aug-09	5.9
389	3.2	28.7	46	0.2471	12:32:41	5-Aug-09	5.6
390	337.3	28.7	46	0.3192	12:33:41	5-Aug-09	26.3
391	11.5	28.7	46	0.6814	12:34:41	5-Aug-09	26.6
392	79.6	28.7	46	1.6893	12:35:41	5-Aug-09	31.2
393	11.7	28.7	46	0.5574	12:36:41	5-Aug-09	31.5
394	33.8	28.7	46	0.8818	12:37:41	5-Aug-09	33.3
395	20.4	28.7	46	0.8489	12:38:41	5-Aug-09	33.9
396	9.6	28.7	46	0.3166	12:39:41	5-Aug-09	33.9
397	358.9	28.7	46	0.6975	12:40:41	5-Aug-09	55.7
398	18.6	28.7	46	1.8179	12:41:41	5-Aug-09	56.6
399	84.9	28.7	46	0.4536	12:42:41	5-Aug-09	61.7
400	14.2	28.7	46	0.7447	12:43:41	5-Aug-09	62.4
401	6.6	28.7	46	0.2438	12:44:41	5-Aug-09	62.6
402	3.7	28.7	46	0.2389	12:45:41	5-Aug-09	62.6
403	141.3	28.8	46	0.1596	12:46:41	5-Aug-09	71.2
404	73.6	28.8	46	0.4429	12:47:41	5-Aug-09	75.6
405	61.2	28.7	46	0.4775	12:48:41	5-Aug-09	79.2
406	103.9	28.8	46	0.5036	12:49:41	5-Aug-09	64.6
407	19.3	28.8	46	0.3768	12:50:41	5-Aug-09	65.1
408	24	28.8	46	2.1522	12:51:41	5-Aug-09	61.6
409	27.4	28.8	46	2.3018	12:52:41	5-Aug-09	62.6
410	5	28.8	46	0.9331	12:53:41	5-Aug-09	60.8
411	41.6	28.8	46	0.2733	12:54:41	5-Aug-09	62.1
412	32.3	28.9	45	0.4059	12:55:41	5-Aug-09	63.5
413	27.8	28.9	45	2.1493	12:56:41	5-Aug-09	42.8
414	16.2	28.9	46	0.5497	12:57:41	5-Aug-09	42.7
415	4.2	28.9	46	0.2434	12:58:41	5-Aug-09	37.6
416	4.6	28.9	46	0.2177	12:59:41	5-Aug-09	37.0
417	3.6	28.9	45	0.2299	13:00:41	5-Aug-09	36.9
418	591.7	28.9	46	0.2749	13:01:41	5-Aug-09	73.6
419	4.1	28.9	45	0.2874	13:02:41	5-Aug-09	65.0
420	17.4	28.9	45	0.1966	13:03:41	5-Aug-09	61.5
421	6.6	28.9	45	0.2294	13:04:41	5-Aug-09	58.1
422	41.8	28.9	45	0.206	13:05:41	5-Aug-09	54.2
423	22.8	28.9	45	0.2702	13:06:41	5-Aug-09	54.4
424	25	29	46	1.3471	13:07:41	5-Aug-09	54.5
425	128.9	29	46	1.6696	13:08:41	5-Aug-09	60.9
426	15.6	29	46	0.4535	13:09:41	5-Aug-09	61.5
427	14.3	29	46	0.2599	13:10:41	5-Aug-09	59.8
428	45.2	29	46	0.325	13:11:41	5-Aug-09	60.6
429	1.2	29.1	45	0.3604	13:12:41	5-Aug-09	59.0
430	5	29.1	45	0.431	13:13:41	5-Aug-09	58.3
431	129	29.1	45	1.4473	13:14:41	5-Aug-09	66.1
432	13	29.1	45	0.7164	13:15:41	5-Aug-09	66.6
433	6	29.2	46	0.3354	13:16:41	5-Aug-09	66.7
434	443	29.2	46	1.2403	13:17:41	5-Aug-09	57.4
435	25.7	29.2	46	0.7147	13:18:41	5-Aug-09	58.8
436	40.7	29.2	46	1.9356	13:19:41	5-Aug-09	60.2
437	3.1	29.3	46	1.2334	13:20:41	5-Aug-09	60.0
438	7.5	29.3	45	1.34	13:21:41	5-Aug-09	57.9

DataRam 4 Dust Monitor, Serial Number D464

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
342	2.6	26	49	0.3841	11:42:55	5-Aug-09	2.3
343	2.3	26	48	0.369	11:43:55	5-Aug-09	2.4
344	2.2	26.1	48	0.3679	11:44:55	5-Aug-09	2.4
345	2.6	26.1	48	0.3742	11:45:55	5-Aug-09	2.4
346	2.5	26.1	48	0.3783	11:46:55	5-Aug-09	2.5
347	1.8	26.2	48	0.3679	11:47:55	5-Aug-09	2.4
348	2.3	26.2	48	0.376	11:48:55	5-Aug-09	2.4
349	2	26.3	48	0.3512	11:49:55	5-Aug-09	2.4
350	1.7	26.3	48	0.3492	11:50:55	5-Aug-09	2.3
351	2.1	26.4	48	0.3679	11:51:55	5-Aug-09	2.4
352	2.1	26.4	47	0.3866	11:52:55	5-Aug-09	2.3
353	2	26.5	47	0.3869	11:53:55	5-Aug-09	2.3
354	2.2	26.5	47	0.3892	11:54:55	5-Aug-09	2.3
355	1.9	26.6	47	0.3842	11:55:55	5-Aug-09	2.2
356	2	26.6	47	0.3851	11:56:55	5-Aug-09	2.2
357	1.4	26.6	47	0.3719	11:57:55	5-Aug-09	2.1
358	2.3	26.7	47	0.3912	11:58:55	5-Aug-09	2.1
359	2.3	26.7	47	0.3859	11:59:55	5-Aug-09	2.1
360	2	26.7	47	0.3778	12:00:55	5-Aug-09	2.1
361	2.4	26.8	46	0.3739	12:01:55	5-Aug-09	2.1
362	2.3	26.8	46	0.3721	12:02:55	5-Aug-09	2.1
363	2.9	26.9	46	0.3973	12:03:55	5-Aug-09	2.1
364	2.3	26.9	46	0.3894	12:04:55	5-Aug-09	2.1
365	2.3	27	46	0.3834	12:05:55	5-Aug-09	2.1
366	3.1	27	46	0.3965	12:06:55	5-Aug-09	2.2
367	2.4	27	46	0.3587	12:07:55	5-Aug-09	2.2
368	2.4	27	46	0.3588	12:08:55	5-Aug-09	2.3
369	2.9	27.1	46	0.3382	12:09:55	5-Aug-09	2.3
370	2.4	27.1	46	0.3183	12:10:55	5-Aug-09	2.3
371	2.2	27.1	46	0.3195	12:11:55	5-Aug-09	2.4
372	1.9	27.1	46	0.3222	12:12:55	5-Aug-09	2.3
373	2	27.2	46	0.3215	12:13:55	5-Aug-09	2.4
374	2	27.2	46	0.3269	12:14:55	5-Aug-09	2.4
375	1.7	27.2	45	0.3384	12:15:55	5-Aug-09	2.3
376	1.6	27.2	46	0.3365	12:16:55	5-Aug-09	2.3
377	2.1	27.2	45	0.3341	12:17:55	5-Aug-09	2.3
378	1.9	27.2	45	0.3344	12:18:55	5-Aug-09	2.3
379	1.5	27.2	45	0.3351	12:19:55	5-Aug-09	2.2
380	2	27.2	45	0.3342	12:20:55	5-Aug-09	2.2
381	1.4	27.3	45	0.3353	12:21:55	5-Aug-09	2.1
382	1.8	27.3	45	0.3346	12:22:55	5-Aug-09	2.0
383	1.6	27.3	45	0.3349	12:23:55	5-Aug-09	2.0
384	1.9	27.3	45	0.3345	12:24:55	5-Aug-09	1.9
385	2.1	27.3	45	0.3342	12:25:55	5-Aug-09	1.9
386	2.7	27.3	45	0.362	12:26:55	5-Aug-09	1.9
387	1.7	27.3	45	0.3474	12:27:55	5-Aug-09	1.9
388	2	27.3	45	0.3414	12:28:55	5-Aug-09	1.9
389	1.5	27.4	45	0.3406	12:29:55	5-Aug-09	1.8
390	2	27.3	45	0.3414	12:30:55	5-Aug-09	1.8
391	1.9	27.4	45	0.3413	12:31:55	5-Aug-09	1.9
392	2	27.3	45	0.3416	12:32:55	5-Aug-09	1.9
393	1.9	27.4	45	0.3412	12:33:55	5-Aug-09	1.9
394	2	27.4	45	0.3415	12:34:55	5-Aug-09	1.9
395	2	27.3	45	0.3413	12:35:55	5-Aug-09	1.9
396	1.7	27.4	45	0.3409	12:36:55	5-Aug-09	1.9
397	1.6	27.3	44	0.3407	12:37:55	5-Aug-09	1.9
398	1.6	27.4	44	0.3406	12:38:55	5-Aug-09	1.9
399	2	27.4	44	0.3415	12:39:55	5-Aug-09	1.9
400	1.7	27.4	44	0.3409	12:40:55	5-Aug-09	1.9
401	2	27.4	44	0.3414	12:41:55	5-Aug-09	1.9
402	1.6	27.4	44	0.3408	12:42:55	5-Aug-09	1.8
403	2	27.4	44	0.3358	12:43:55	5-Aug-09	1.8
404	2.3	27.4	44	0.3214	12:44:55	5-Aug-09	1.9
405	2	27.4	44	0.3235	12:45:55	5-Aug-09	1.9
406	1.8	27.4	44	0.3254	12:46:55	5-Aug-09	1.9
407	1.9	27.4	44	0.3238	12:47:55	5-Aug-09	1.9
408	1.6	27.4	44	0.3262	12:48:55	5-Aug-09	1.9
409	1.7	27.4	44	0.3438	12:49:55	5-Aug-09	1.8
410	1	27.5	44	0.3456	12:50:55	5-Aug-09	1.8
411	1.5	27.4	44	0.3533	12:51:55	5-Aug-09	1.8
412	2.5	27.5	44	0.3662	12:52:55	5-Aug-09	1.8
413	1.9	27.5	44	0.3593	12:53:55	5-Aug-09	1.8
414	2.1	27.5	44	0.3695	12:54:55	5-Aug-09	1.9
415	2.7	27.5	44	0.3802	12:55:55	5-Aug-09	1.9
416	1.5	27.5	44	0.3613	12:56:55	5-Aug-09	1.9
417	2.1	27.5	44	0.3694	12:57:55	5-Aug-09	1.9
418	1.5	27.5	44	0.3599	12:58:55	5-Aug-09	1.9
419	2.4	27.5	44	0.373	12:59:55	5-Aug-09	1.9
420	2.2	27.5	44	0.371	13:00:55	5-Aug-09	1.9
421	2.3	27.5	44	0.3717	13:01:55	5-Aug-09	1.9
422	2.4	27.5	44	0.3729	13:02:55	5-Aug-09	2.0
423	2.3	27.5	44	0.3737	13:03:55	5-Aug-09	2.0
424	3.3	27.5	44	0.4694	13:04:55	5-Aug-09	2.1
425	2.2	27.5	44	0.4259	13:05:55	5-Aug-09	2.1
426	2	27.5	44	0.397	13:06:55	5-Aug-09	2.2
427	1.4	27.5	44	0.3796	13:07:55	5-Aug-09	2.2
428	2.1	27.6	44	0.3971	13:08:55	5-Aug-09	2.2
429	2.3	27.6	44	0.3963	13:09:55	5-Aug-09	2.2
430	2.7	27.6	43	0.4316	13:10:55	5-Aug-09	2.2
431	1.7	27.6	44	0.3988	13:11:55	5-Aug-09	2.2
432	2	27.6	43	0.4064	13:12:55	5-Aug-09	2.2
433	1.6	27.6	43	0.3906	13:13:55	5-Aug-09	2.2
434	2.3	27.7	44	0.4188	13:14:55	5-Aug-09	2.2
435	1.6	27.7	44	0.3927	13:15:55	5-Aug-09	2.2
436	1.7	27.7	44	0.3961	13:16:55	5-Aug-09	2.1
437	2	27.7	44	0.4076	13:17:55	5-Aug-09	2.1
438	2	27.7	44	0.3975	13:18:55	5-Aug-09	2.1
439	2	27.8	44	0.3986	13:19:55	5-Aug-09	2.1
440	2.4	27.8	44	0.3938	13:20:55	5-Aug-09	2.0
441	2	27.9	43	0.3809	13:21:55	5-Aug-09	2.0

Appendix I
Ambient Air Dust Monitoring Results - SEAD-12 Removal Action

Seneca Army Depot Activity
Romulus, NY

DataRam 4 Dust Monitor, Serial Number D454

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
439	1.3	29.4	45	0.632	13:22:41	5-Aug-09	56.5
440	2.1	29.4	45	0.3611	13:23:41	5-Aug-09	55.1
441	1.5	29.6	45	0.2927	13:24:41	5-Aug-09	47.1
442	2.7	30.1	45	0.2476	13:25:41	5-Aug-09	46.3
443	24.5	30.1	45	0.2307	13:26:41	5-Aug-09	47.0
444	7.7	30.2	45	0.2782	13:27:41	5-Aug-09	44.6
445	1.4	30.1	45	0.318	13:28:41	5-Aug-09	44.6
446	3.8	30.1	45	0.3455	13:29:41	5-Aug-09	44.6
447	1.8	30.2	45	0.61	13:30:41	5-Aug-09	36.6
448	0.1	30	45	0.3554	13:31:41	5-Aug-09	35.8
449	0	29.9	44	0.3379	13:32:41	5-Aug-09	35.4
450	482.6	29.8	44	0.8082	13:33:41	5-Aug-09	37.9
451	0.2	29.7	44	0.343	13:34:41	5-Aug-09	36.3
452	125.3	29.8	44	2.0056	13:35:41	5-Aug-09	41.6
453	1.1	29.8	44	0.3265	13:36:41	5-Aug-09	41.5
454	0.7	29.8	43	0.3306	13:37:41	5-Aug-09	41.1
455	1.3	29.9	43	0.3252	13:38:41	5-Aug-09	41.1
456	10.5	29.9	43	0.3948	13:39:41	5-Aug-09	41.6
457	209.1	30	43	0.3166	13:40:41	5-Aug-09	54.6
458	14.5	30	43	0.2347	13:41:41	5-Aug-09	55.3
459	226.2	30	43	0.7753	13:42:41	5-Aug-09	67.9
460	25.3	30	43	2.1947	13:43:41	5-Aug-09	69.0
461	12.1	30	44	1.1205	13:44:41	5-Aug-09	69.7
462	11.9	30.1	43	0.2076	13:45:41	5-Aug-09	70.2
463	32.3	30.1	43	1.3051	13:46:41	5-Aug-09	72.1
464	44.1	30.1	43	2.4498	13:47:41	5-Aug-09	74.8
465	104.6	30.1	43	2.6997	13:48:41	5-Aug-09	81.4
466	206	30.2	43	2.0954	13:49:41	5-Aug-09	64.1
467	11.8	30.2	43	1.6265	13:50:41	5-Aug-09	64.8
468	15.1	30.2	43	0.451	13:51:41	5-Aug-09	57.9
469	12.3	30.2	43	0.2705	13:52:41	5-Aug-09	58.6
470	8.8	30.2	43	0.1939	13:53:41	5-Aug-09	59.1
471	53	30.3	43	0.1868	13:54:41	5-Aug-09	62.4
472	27.2	30.3	43	0.4005	13:55:41	5-Aug-09	63.4
473	46.5	30.3	43	0.2948	13:56:41	5-Aug-09	53.2
474	19.5	30.4	43	0.3644	13:57:41	5-Aug-09	53.5
475	23.2	30.4	43	2.2803	13:58:41	5-Aug-09	40.9
476	28.1	30.4	43	1.3522	13:59:41	5-Aug-09	41.0
477	42	30.5	43	2.3203	14:00:41	5-Aug-09	42.9
478	267.5	30.5	42	2.2034	14:01:41	5-Aug-09	58.9
479	42.9	30.5	42	0.4691	14:02:41	5-Aug-09	59.5
480	168.4	30.5	43	0.8663	14:03:41	5-Aug-09	67.3
481	14.9	30.6	43	0.5575	14:04:41	5-Aug-09	61.7
482	21.1	30.6	42	0.8413	14:05:41	5-Aug-09	50.1
483	46.3	30.6	42	1.9	14:06:41	5-Aug-09	52.3
484	6.8	30.6	42	0.3614	14:07:41	5-Aug-09	51.8
485	7.5	30.7	42	0.1864	14:08:41	5-Aug-09	51.5
486	58.4	30.7	43	0.1537	14:09:41	5-Aug-09	54.6
487	27.6	30.7	43	0.3055	14:10:41	5-Aug-09	53.0
488	23.5	30.8	42	0.2058	14:11:41	5-Aug-09	52.8
489	16.9	30.8	42	1.7179	14:12:41	5-Aug-09	50.9
490	11	30.9	42	0.9355	14:13:41	5-Aug-09	50.4
491	9.7	30.9	42	0.2697	14:14:41	5-Aug-09	49.5
492	6.7	30.9	42	0.1934	14:15:41	5-Aug-09	48.2
493	7.9	31	42	0.1709	14:16:41	5-Aug-09	46.1
494	125.9	31	42	0.1959	14:17:41	5-Aug-09	37.2
495	29.7	31	41	0.2523	14:18:41	5-Aug-09	36.4
496	229.1	31	42	0.6152	14:19:41	5-Aug-09	40.2
497	25.8	31	41	2.6003	14:20:41	5-Aug-09	40.9
498	20.1	31.1	41	0.7525	14:21:41	5-Aug-09	40.8
499	16.9	31.1	41	0.411	14:22:41	5-Aug-09	39.0
500	100	31.1	41	0.1926	14:23:41	5-Aug-09	44.8
501	284.3	31.2	41	0.4748	14:24:41	5-Aug-09	62.1
502	45.4	31.2	41	2.6282	14:25:41	5-Aug-09	61.3
503	14.6	31.2	41	1.6367	14:26:41	5-Aug-09	60.5
504	81.7	31.3	41	0.7876	14:27:41	5-Aug-09	64.1
505	3.5	31.3	41	0.442	14:28:41	5-Aug-09	63.3
506	29.5	31.3	41	0.7384	14:29:41	5-Aug-09	64.4
507	27.1	31.4	41	0.9774	14:30:41	5-Aug-09	65.5
508	7.7	31.4	41	0.2644	14:31:41	5-Aug-09	65.6
509	244	31.5	40	0.2294	14:32:41	5-Aug-09	80.3
510	59.2	31.5	40	0.9258	14:33:41	5-Aug-09	76.2
511	115.7	31.5	40	2.1339	14:34:41	5-Aug-09	81.5
512	89.3	31.9	41	1.3518	14:35:41	5-Aug-09	72.8
513	27.5	32	41	2.6784	14:36:41	5-Aug-09	72.9
514	16.2	32.3	41	1.0498	14:37:41	5-Aug-09	72.7
515	11.2	32.3	41	0.5667	14:38:41	5-Aug-09	72.3
516	61.8	32.7	41	3.1974	14:39:41	5-Aug-09	69.9
517	212.3	33.4	42	1.6025	14:40:41	5-Aug-09	65.4
518	65.8	34.3	42	3.6597	14:41:41	5-Aug-09	66.7
519	38.7	35.8	43	4.127	14:42:41	5-Aug-09	68.2
520	281.1	36	43	4.0766	14:43:41	5-Aug-09	80.7
521	15.4	36.1	43	2.2555	14:44:41	5-Aug-09	81.4
522	17.1	36.1	43	2.1942	14:45:41	5-Aug-09	80.6
523	66.9	36.1	43	2.253	14:46:41	5-Aug-09	83.1
524	158.7	36.2	43	2.0926	14:47:41	5-Aug-09	92.6
525	45.3	36.2	43	1.898	14:48:41	5-Aug-09	80.1
526	0	36.3	42	0.3375	14:49:41	5-Aug-09	76.4
527	803	36.3	42	1.9815	14:50:41	5-Aug-09	119.4
528	0	36.3	42	0.3375	14:51:41	5-Aug-09	113.8
529	1	35.6	41	0.4768	14:52:41	5-Aug-09	112.2
530	2.2	32.8	39	0.9308	14:53:41	5-Aug-09	111.3
531	1.7	33	39	0.4241	14:54:41	5-Aug-09	110.7
532	0.4	32.7	39	0.4483	14:55:41	5-Aug-09	106.9
533	773	33	39	2.5423	14:56:41	5-Aug-09	141.9
534	22.3	33.1	39	1.2049	14:57:41	5-Aug-09	139.2
535	1.2	33	39	0.4932	14:58:41	5-Aug-09	136.8
536	6.1	33.2	39	0.5553	14:59:41	5-Aug-09	119.6
537	6.1	33.2	39	0.8874	15:00:41	5-Aug-09	119.1
538	0.7	33.2	39	0.5513	15:01:41	5-Aug-09	118.0

DataRam 4 Dust Monitor, Serial Number D464

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
442	1.9	27.9	43	0.3978	13:22:55	5-Aug-09	2.0
443	1.4	27.9	43	0.3804	13:23:55	5-Aug-09	2.0
444	1.8	28	43	0.3945	13:24:55	5-Aug-09	2.0
445	2.2	28	43	0.4101	13:25:55	5-Aug-09	2.0
446	1.7	28	43	0.387	13:26:55	5-Aug-09	1.9
447	1.6	28	43	0.379	13:27:55	5-Aug-09	1.9
448	2	28.1	43	0.3853	13:28:55	5-Aug-09	1.9
449	1.9	28.1	43	0.368	13:29:55	5-Aug-09	1.9
450	1.8	28.1	43	0.3611	13:30:55	5-Aug-09	1.9
451	2.3	28.1	43	0.3683	13:31:55	5-Aug-09	1.9
452	2.2	28.1	43	0.3685	13:32:55	5-Aug-09	2.0
453	2.2	28.2	43	0.3678	13:33:55	5-Aug-09	2.0
454	2.1	28.2	42	0.366	13:34:55	5-Aug-09	2.0
455	1.9	28.2	42	0.3643	13:35:55	5-Aug-09	2.0
456	1.7	28.2	42	0.3623	13:36:55	5-Aug-09	1.9
457	1.3	28.2	42	0.3591	13:37:55	5-Aug-09	1.9
458	1.7	28.3	42	0.3675	13:38:55	5-Aug-09	1.9
459	1.8	28.3	42	0.3671	13:39:55	5-Aug-09	1.9
460	1.6	28.3	42	0.3646	13:40:55	5-Aug-09	1.9
461	1.3	28.3	42	0.3601	13:41:55	5-Aug-09	1.8
462	1.9	28.3	42	0.3695	13:42:55	5-Aug-09	1.8
463	1.7	28.4	42	0.367	13:43:55	5-Aug-09	1.8
464	1.9	28.4	42	0.3706	13:44:55	5-Aug-09	1.8
465	1.9	28.4	42	0.3831	13:45:55	5-Aug-09	1.8
466	0.8	28.4	42	0.3575	13:46:55	5-Aug-09	1.8
467	1.8	28.5	42	0.3805	13:47:55	5-Aug-09	1.7
468	1.5	28.5	42	0.3747	13:48:55	5-Aug-09	1.7
469	2	28.5	42	0.386	13:49:55	5-Aug-09	1.7
470	1.2	28.5	42	0.3689	13:50:55	5-Aug-09	1.6
471	1.4	28.6	41	0.3722	13:51:55	5-Aug-09	1.6
472	1.3	28.6	41	0.3683	13:52:55	5-Aug-09	1.6
473	1.8	28.6	41	0.3812	13:53:55	5-Aug-09	1.6
474	1.8	28.6	41	0.3791	13:54:55	5-Aug-09	1.6
475	1.4	28.7	41	0.3697	13:55:55	5-Aug-09	1.6
476	1.7	28.7	41	0.3765	13:56:55	5-Aug-09	1.6
477	1.3	28.7	41	0.3667	13:57:55	5-Aug-09	1.6
478	2	28.7	41	0.3754	13:58:55	5-Aug-09	1.6
479	1.6	28.8	41	0.356	13:59:55	5-Aug-09	1.6
480	2	28.8	41	0.3593	14:00:55	5-Aug-09	1.6
481	2.1	28.8	41	0.36	14:01:55	5-Aug-09	1.6
482	1.7	28.8	41	0.3567	14:02:55	5-Aug-09	1.7
483	1.3	28.9	41	0.3512	14:03:55	5-Aug-09	1.6
484	2.1	28.9	41	0.36	14:04:55	5-Aug-09	1.7
485	1.5	28.9	41	0.3538	14:05:55	5-Aug-09	1.6
486	1.7	29	41	0.3559	14:06:55	5-Aug-09	1.7
487	1.2	29	41	0.3588	14:07:55	5-Aug-09	1.7
488	1.5	29	41	0.3868	14:08:55	5-Aug-09	1.7
489	2.2	29	41	0.4309	14:09:55	5-Aug-09	1.7
490	2	29.1	41	0.4329	14:10:55	5-Aug-09	1.7
491	2.5	29.1	41	0.4593	14:11:55	5-Aug-09	1.8
492	2	29.1	41	0.4318	14:12:55	5-Aug-09	1.8
493	1.4	29.2	41	0.4	14:13:55	5-Aug-09	1.8
494	2	29.2	40	0.4327	14:14:55	5-Aug-09	1.8
495	1.7	29.2	40	0.4157	14:15:55	5-Aug-09	1.8
496	1.2	29.2	40	0.3921	14:16:55	5-Aug-09	1.8
497	1.6	29.3	40	0.3912	14:17:55	5-Aug-09	1.7
498	1.5	29.3	40	0.3797	14:18:55	5-Aug-09	1.7
499	1.6	29.3	40	0.3878	14:19:55	5-Aug-09	1.7
500	1	29.4	40	0.3726	14:20:55	5-Aug-09	1.7
501	1	29.4	40	0.3691	14:21:55	5-Aug-09	1.6
502	1.3	29.5	40	0.3852	14:22:55	5-Aug-09	1.6
503	2.1	29.5	40	0.4099	14:23:55	5-Aug-09	1.7
504	1	29.5	40	0.3721	14:24:55	5-Aug-09	1.6
505	1.9	29.6	40	0.403	14:25:55	5-Aug-09	1.6
506	1.6	29.6	40	0.4041	14:26:55	5-Aug-09	1.6
507	1.1	29.6	40	0.385	14:27:55	5-Aug-09	1.5
508	1.9	29.7	39	0.4238	14:28:55	5-Aug-09	1.5
509	1.3	29.7	40	0.3969	14:29:55	5-Aug-09	1.5
510	1.5	29.7	39	0.4043	14:30:55	5-Aug-09	1.5
511	1.3	29.8	39	0.3966	14:31:55	5-Aug-09	1.4
512	1.4	29.8	39	0.4023	14:32:55	5-Aug-09	1.4
513	1.3	29.9	39	0.3965	14:33:55	5-Aug-09	1.4
514	1.6	29.9	39	0.4094	14:34:55	5-Aug-09	1.4
515	1.7	29.9	39	0.409	14:35:55	5-Aug-09	1.4
516	2.2	30	40	0.4343	14:36:55	5-Aug-09	1.5
517	2	30	40	0.4083	14:37:55	5-Aug-09	1.6
518	1.5	30.1	39	0.3802	14:38:55	5-Aug-09	1.6
519	1.4	30.1	39	0.3543	14:39:55	5-Aug-09	1.5
520	1.3	30.1	39	0.3499	14:40:55	5-Aug-09	1.6
521	1.3	30.2	39	0.3495	14:41:55	5-Aug-09	1.5
522	1.2	30.2	39	0.3492	14:42:55	5-Aug-09	1.5
523	1.2	30.2	38	0.3484	14:43:55	5-Aug-09	1.5
524	1.3	30.3	39	0.3507	14:44:55	5-Aug-09	1.5
525	1.1	30.3	38	0.3477	14:45:55	5-Aug-09	1.5
526	1.4	30.4	39	0.3506	14:46:55	5-Aug-09	1.5
527	1.1	30.5	38	0.3477	14:47:55	5-Aug-09	1.4
528	1.4	30.5	38	0.3509	14:48:55	5-Aug-09	1.4
529	1.5	30.5	38	0.3629	14:49:55	5-Aug-09	1.5
530	1.9	30.6	38	0.3817	14:50:55	5-Aug-09	1.5
531	0.9	30.6	38	0.3592	14:51:55	5-Aug-09	1.4
532	2.1	30.6	38	0.3689	14:52:55	5-Aug-09	1.4
533	0.9	30.7	38	0.3475	14:53:55	5-Aug-09	1.3
534	1.1	30.7	38	0.3503	14:54:55	5-Aug-09	1.3
535	1	30.7	38	0.3498	14:55:55	5-Aug-09	1.3
536	0.8	30.8	37	0.3467	14:56:55	5-Aug-09	1.3
537	1.1	30.9	37	0.3496	14:57:55	5-Aug-09	1.3
538	2.4	30.9	37	0.4122	14:58:55	5-Aug-09	1.3
539	1.5	31	37	0.3938	14:59:55	5-Aug-09	1.3
540	2	31	37	0.4173	15:00:55	5-Aug-09	1.4
541	1.8	31	37	0.4028	15:01:55	5-Aug-09	1.4

Appendix I
Ambient Air Dust Monitoring Results - SEAD-12 Removal Action

Seneca Army Depot Activity
Romulus, NY

DataRam 4 Dust Monitor, Serial Number D454

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
539	2	33.3	38	0.9052	15:02:41	5-Aug-09	114.0
540	10.2	33.4	38	1.7426	15:03:41	5-Aug-09	104.7
541	38.4	33.5	38	1.4128	15:04:41	5-Aug-09	104.3
542	102.9	33.4	38	1.9677	15:05:41	5-Aug-09	110.7
543	28	33.6	38	2.0406	15:06:41	5-Aug-09	62.3
544	1.1	33.6	38	0.4415	15:07:41	5-Aug-09	62.3
545	56.7	33.4	37	0.5104	15:08:41	5-Aug-09	65.8
546	0.4	33.7	37	0.4126	15:09:41	5-Aug-09	65.7
547	1.4	33.7	37	0.4012	15:10:41	5-Aug-09	65.7
548	44.6	33.7	37	2.5459	15:11:41	5-Aug-09	68.4
549	597.6	33.7	37	3.2655	15:12:41	5-Aug-09	57.5
550	4	33.7	37	1.1587	15:13:41	5-Aug-09	56.3
551	36	33.7	37	0.945	15:14:41	5-Aug-09	58.5
552	15.2	33.8	37	1.5258	15:15:41	5-Aug-09	59.1
553	13	33.8	37	0.9176	15:16:41	5-Aug-09	59.5
554	3.5	33.7	37	1.2607	15:17:41	5-Aug-09	59.7
555	2.4	33.8	37	0.4577	15:18:41	5-Aug-09	59.7
556	249.2	33.9	37	0.2988	15:19:41	5-Aug-09	74.7
557	77.4	33.9	37	1.1688	15:20:41	5-Aug-09	77.1
558	8	33.9	37	0.785	15:21:41	5-Aug-09	71.2
559	31.2	33.8	37	1.8422	15:22:41	5-Aug-09	71.4
560	10.1	34	37	0.4082	15:23:41	5-Aug-09	71.9
561	19.8	33.8	37	1.83	15:24:41	5-Aug-09	69.6
562	14.4	33.9	37	1.8045	15:25:41	5-Aug-09	70.5
563	10.7	34.1	37	1.8627	15:26:41	5-Aug-09	71.1
564	4.3	33.9	37	1.2446	15:27:41	5-Aug-09	68.6
565	468.7	34	37	1.46	15:28:41	5-Aug-09	60.5
566	53.6	33.9	37	2.9739	15:29:41	5-Aug-09	63.6
567	388.9	34	37	2.4805	15:30:41	5-Aug-09	85.7
568	3.4	34	37	0.4144	15:31:41	5-Aug-09	84.9
569	134.3	34	37	0.346	15:32:41	5-Aug-09	92.5
570	239.2	34.1	37	2.1813	15:33:41	5-Aug-09	107.2
571	143.2	34.1	37	2.4282	15:34:41	5-Aug-09	116.0
572	3.2	34	37	0.5905	15:35:41	5-Aug-09	100.7
573	3.1	34.1	37	0.4262	15:36:41	5-Aug-09	96.0
574	156.5	34.3	37	1.0012	15:37:41	5-Aug-09	105.3
575	8.2	34.3	37	1.5947	15:38:41	5-Aug-09	103.9
576	72	34.3	37	1.6613	15:39:41	5-Aug-09	107.7
577	2.2	34.2	37	0.9269	15:40:41	5-Aug-09	106.6
578	639.5	34.3	37	2.1401	15:41:41	5-Aug-09	145.7
579	4.2	34.2	36	1.3803	15:42:41	5-Aug-09	145.3
580	0.8	34.6	37	0.5047	15:43:41	5-Aug-09	145.1
581	2.8	34.5	36	1.2394	15:44:41	5-Aug-09	115.9
582	1.2	34.6	36	0.7006	15:45:41	5-Aug-09	112.7
583	0.9	34.5	36	0.598	15:46:41	5-Aug-09	88.4
584	28.4	34.7	36	1.4674	15:47:41	5-Aug-09	90.0
585	1.8	34.7	36	0.6216	15:48:41	5-Aug-09	81.7
586	96.4	34.5	36	1.533	15:49:41	5-Aug-09	72.8
587	135.1	34.4	36	1.9879	15:50:41	5-Aug-09	72.3
588	5.4	34.7	36	1.4271	15:51:41	5-Aug-09	72.4
589	68.2	34.7	36	2.4358	15:52:41	5-Aug-09	76.5
590	63.7	34.8	36	3.2139	15:53:41	5-Aug-09	70.7
591	31.5	34.7	36	2.5976	15:54:41	5-Aug-09	72.1
592	52.4	34.9	36	1.8689	15:55:41	5-Aug-09	70.9
593	171.4	34.8	36	2.2711	15:56:41	5-Aug-09	81.5
594	1.2	34.7	36	0.709	15:57:41	5-Aug-09	41.6
595	97.1	34.9	36	2.5945	15:58:41	5-Aug-09	47.4
596	23.3	34.9	36	1.2986	15:59:41	5-Aug-09	48.8
597	47.2	35.1	36	2.9742	16:00:41	5-Aug-09	51.6
598	10.4	35	36	1.3448	16:01:41	5-Aug-09	52.2
599	68.5	35.2	36	1.9381	16:02:41	5-Aug-09	56.4
600	40.7	34.9	36	1.0127	16:03:41	5-Aug-09	57.1
601	209.5	35.2	36	2.8491	16:04:41	5-Aug-09	70.1
602	1.9	35.2	36	0.6161	16:05:41	5-Aug-09	64.2
603	0.6	35.4	36	0.4489	16:06:41	5-Aug-09	55.8
604	0.1	35.3	35	0.3966	16:07:41	5-Aug-09	55.5
605	0	35.4	35	0.3408	16:08:41	5-Aug-09	51.2
606	0.6	35.5	35	0.4472	16:09:41	5-Aug-09	47.3
607	0	35.7	35	0.338	16:10:41	5-Aug-09	45.3
608	162	35.6	35	1.8463	16:11:41	5-Aug-09	52.2
609	17.2	35.7	35	1.0331	16:12:41	5-Aug-09	42.5
610	0	35.8	35	0.3733	16:13:41	5-Aug-09	42.4
611	0.1	35.8	35	0.3708	16:14:41	5-Aug-09	36.4
612	1.5	35.7	35	0.3801	16:15:41	5-Aug-09	35.0
613	164	36	36	0.6654	16:16:41	5-Aug-09	42.3
614	0	36	36	0.3375	16:17:41	5-Aug-09	41.7
615	0.1	36.2	36	0.3407	16:18:41	5-Aug-09	37.4
616	0	36.2	36	0.3375	16:19:41	5-Aug-09	34.9
617	0.6	36.6	36	0.3599	16:20:41	5-Aug-09	21.8
618	0.1	37.2	36	0.3377	16:21:41	5-Aug-09	21.7
619	0	38.4	37	0.3375	16:22:41	5-Aug-09	21.6
620	0.4	38.4	37	0.3351	16:23:41	5-Aug-09	21.7
621	0	38.5	37	0.3375	16:24:41	5-Aug-09	21.7
622	0	38.5	37	0.3375	16:25:41	5-Aug-09	21.6
623	2.8	38.5	37	0.3338	16:26:41	5-Aug-09	21.8
624	0	38.5	36	0.3375	16:27:41	5-Aug-09	11.7
625	0	38.6	36	0.3375	16:28:41	5-Aug-09	10.6
626	0	38.6	36	0.3375	16:29:41	5-Aug-09	10.6
627	1.3	38.6	36	0.3558	16:30:41	5-Aug-09	10.7
628	0	38.6	35	0.3377	16:31:41	5-Aug-09	10.6
629	0	35.7	34	0.3375	16:32:41	5-Aug-09	0.3
630	0.5	34.6	33	0.3391	16:33:41	5-Aug-09	0.4
631	0.4	34.7	33	0.3332	16:34:41	5-Aug-09	0.4
632	0	34.7	33	0.3375	16:35:41	5-Aug-09	0.4
633	0.1	34.7	33	0.3367	16:36:41	5-Aug-09	0.4
634	0	34.7	32	0.337	16:37:41	5-Aug-09	0.3
635	0	34.7	32	0.3375	16:38:41	5-Aug-09	0.3
636	0.1	34.7	32	0.3368	16:39:41	5-Aug-09	0.3
637	0	34.7	32	0.3372	16:40:41	5-Aug-09	0.3
638	0.1	34.7	32	0.3369	16:41:41	5-Aug-09	0.3

DataRam 4 Dust Monitor, Serial Number D464

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
542	1.4	31	37	0.3808	15:02:55	5-Aug-09	1.4
543	2	31.1	36	0.3918	15:03:55	5-Aug-09	1.5
544	3.6	31.1	36	0.4895	15:04:55	5-Aug-09	1.6
545	1.7	31.1	36	0.4355	15:05:55	5-Aug-09	1.6
546	1.3	31.1	36	0.4035	15:06:55	5-Aug-09	1.6
547	1.2	31.1	36	0.3972	15:07:55	5-Aug-09	1.6
548	0.8	31.1	36	0.3739	15:08:55	5-Aug-09	1.5
549	2.3	31.1	36	0.4766	15:09:55	5-Aug-09	1.6
550	1.7	31.1	36	0.4231	15:10:55	5-Aug-09	1.7
551	1.4	31.1	36	0.403	15:11:55	5-Aug-09	1.7
552	1.5	31.2	36	0.4164	15:12:55	5-Aug-09	1.7
553	1.5	31.2	35	0.4361	15:13:55	5-Aug-09	1.8
554	1.7	31.2	35	0.4369	15:14:55	5-Aug-09	1.7
555	1.1	31.2	35	0.3971	15:15:55	5-Aug-09	1.7
556	1.8	31.2	35	0.4416	15:16:55	5-Aug-09	1.7
557	3.1	31.2	35	0.4258	15:17:55	5-Aug-09	1.8
558	1.8	31.2	35	0.4055	15:18:55	5-Aug-09	1.8
559	1.5	31.2	35	0.3928	15:19:55	5-Aug-09	1.8
560	1.6	31.2	35	0.3866	15:20:55	5-Aug-09	1.6
561	1.6	31.2	35	0.3739	15:21:55	5-Aug-09	1.6
562	1.1	31.2	35	0.364	15:22:55	5-Aug-09	1.6
563	1.9	31.3	35	0.3868	15:23:55	5-Aug-09	1.7
564	1	31.3	35	0.3655	15:24:55	5-Aug-09	1.7
565	1.2	31.3	35	0.3724	15:25:55	5-Aug-09	1.6
566	1.7	31.3	35	0.3831	15:26:55	5-Aug-09	1.6
567	1.3	31.3	35	0.3748	15:27:55	5-Aug-09	1.6
568	0.7	31.3	35	0.3577	15:28:55	5-Aug-09	1.5
569	1.1	31.4	35	0.3684	15:29:55	5-Aug-09	1.5
570	1.5	31.4	35	0.3817	15:30:55	5-Aug-09	1.5
571	1.2	31.4	35	0.371	15:31:55	5-Aug-09	1.5
572	1.1	31.4	35	0.3705	15:32:55	5-Aug-09	1.5
573	2	31.5	35	0.3829	15:33:55	5-Aug-09	1.4
574	1.6	31.5	35	0.3723	15:34:55	5-Aug-09	1.4
575	1.8	31.5	35	0.3634	15:35:55	5-Aug-09	1.4
576	1.1	31.5	35	0.3505	15:36:55	5-Aug-09	1.4
577	1.6	31.5	35	0.3542	15:37:55	5-Aug-09	1.4
578	1.8	31.6	35	0.3568	15:38:55	5-Aug-09	1.4
579	1.4	31.6	35	0.3543	15:39:55	5-Aug-09	1.4
580	2.2	31.6	35	0.3759	15:40:55	5-Aug-09	1.5
581	1.8	31.6	35	0.3824	15:41:55	5-Aug-09	1.5
582	1.3	31.6	35	0.375	15:42:55	5-Aug-09	1.5
583	1.9	31.7	35	0.3953	15:43:55	5-Aug-09	1.5
584	1.5	31.7	35	0.3837	15:44:55	5-Aug-09	1.6
585	1.7	31.7	35	0.3883	15:45:55	5-Aug-09	1.6
586	2.3	31.7	35	0.4346	15:46:55	5-Aug-09	1.6
587	1.9	31.7	35	0.4216	15:47:55	5-Aug-09	1.7
588	2	31.8	35	0.4235	15:48:55	5-Aug-09	1.7
589	1.6	31.8	35	0.408	15:49:55	5-Aug-09	1.7
590	1.9	31.8	35	0.4196	15:50:55	5-Aug-09	1.7
591	1.8	31.9	34	0.4073	15:51:55	5-Aug-09	1.7
592	1.9	31.9	34	0.4183	15:52:55	5-Aug-09	1.8
593	1.4	32	34	0.3935	15:53:55	5-Aug-09	1.8
594	1.7	32	34	0.4099	15:54:55	5-Aug-09	1.8
595	2.3	32	34	0.4168	15:55:55	5-Aug-09	1.8
596	1.8	32.1	34	0.3889	15:56:55	5-Aug-09	1.8
597	1.9	32.1	34	0.3872	15:57:55	5-Aug-09	1.8
598	2.2	32.1	34	0.3884	15:58:55	5-Aug-09	1.9
599	2	32.1	34	0.3854	15:59:55	5-Aug-09	1.9
600	1.9	32.2	33	0.384	16:00:55	5-Aug-09	1.9
601	1.5	32.2	33	0.3709	16:01:55	5-Aug-09	1.9
602	2.2	32.2	33	0.3824	16:02:55	5-Aug-09	1.9
603	1.9	32.2	33	0.3686	16:03:55	5-Aug-09	1.9
604	2	32.3	33	0.3671	16:04:55	5-Aug-09	1.9
605	2.6	32.3	33	0.3735	16:05:55	5-Aug-09	1.9
606	2.6	32.3	33	0.3719	16:06:55	5-Aug-09	2.0
607	1.9	32.3	33	0.3315	16:07:55	5-Aug-09	2.0
608	2.1	32.4	33	0.3245	16:08:55	5-Aug-09	2.0
609	1.5	32.4	33	0.3279	16:09:55	5-Aug-09	2.0
610	1.4	32.4	33	0.329	16:10:55	5-Aug-09	2.0
611	1.7	32.4	33	0.3268	16:11:55	5-Aug-09	2.0
612	1.6	32.4	33	0.3275	16:12:55	5-Aug-09	1.9
613	1.8	32.4	33	0.3236	16:13:55	5-Aug-09	1.9
614	1.7	32.5	33	0.3125	16:14:55	5-Aug-09	1.9
615	1.7	32.5	33	0.3123	16:15:55	5-Aug-09	1.9
616	1.8	32.5	33	0.3107	16:16:55	5-Aug-09	1.9
617	2.2	32.5	33	0.3056	16:17:55	5-Aug-09	1.9
618	3.6	32.5	33	0.3149	16:18:55	5-Aug-09	2.0
619	1.7	32.5	33	0.3242	16:19:55	5-Aug-09	2.0
620	2.1	32.6	33	0.3207	16:20:55	5-Aug-09	2.0
621	1.5	32.6	32	0.3259	16:21:55	5-Aug-09	1.9
622	1.7	32.6	32	0.3244	16:22:55	5-Aug-09	1.9
623	1.7	32.6	32	0.3242	16:23:55	5-Aug-09	1.9
624	2.2	32.6	32	0.3224	16:24:55	5-Aug-09	1.9
625	1.4	32.7	32	0.3278	16:25:55	5-Aug-09	1.9
626	1.2	32.7	32	0.3293	16:26:55	5-Aug-09	1.9
627	1.9	32.7	32	0.3309	16:27:55	5-Aug-09	1.9
628	1.1	32.7	31	0.3479	16:28:55	5-Aug-09	1.8
629	1.3	32.7	32	0.3504	16:29:55	5-Aug-09	1.8
630	1.8	32.7	31	0.355	16:30:55	5-Aug-09	1.8
631	1.2	32.7	31	0.3495	16:31:55	5-Aug-09	1.8
632	1.5	32.7	31	0.3522	16:32:55	5-Aug-09	1.8
633	1.6	32.7	31	0.3535	16:33:55	5-Aug-09	1.7
634	1.9	32.7	31	0.3707	16:34:55	5-Aug-09	1.6
635	1.6	32.7	31	0.3714	16:35:55	5-Aug-09	1.6
636	1.7	32.7	31	0.3801	16:36:55	5-Aug-09	1.6
637	1.6	32.7	31	0.3708	16:37:55	5-Aug-09	1.6
638	1.4	32.7	31	0.3626	16:38:55	5-Aug-09	1.6
639	1.4	32.7	31	0.3765	16:39:55	5-Aug-09	1.6
640	2.2	32.7	31	0.3952	16:40:55	5-Aug-09	1.6
641	2.4	32.7	31	0.3521	16:41:55	5-Aug-09	1.6

Appendix I
Ambient Air Dust Monitoring Results - SEAD-12 Removal Action

Seneca Army Depot Activity
Romulus, NY

DataRam 4 Dust Monitor, Serial Number D454

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
639	0.1	34.7	32	0.3332	16:42:41	5-Aug-09	0.2
640	0.1	34.7	32	0.3356	16:43:41	5-Aug-09	0.2
641	0	34.7	32	0.3367	16:44:41	5-Aug-09	0.2
642	0.1	34.7	32	0.3338	16:45:41	5-Aug-09	0.2
643	0.4	34.7	32	0.3328	16:46:41	5-Aug-09	0.1
644	0.1	34.7	32	0.3365	16:47:41	5-Aug-09	0.1
645	0	34.7	32	0.337	16:48:41	5-Aug-09	0.1
646	0	34.7	32	0.3374	16:49:41	5-Aug-09	0.1
647	0.1	34.7	32	0.336	16:50:41	5-Aug-09	0.1
648	0.3	34.7	32	0.332	16:51:41	5-Aug-09	0.1
649	0.2	34.7	32	0.333	16:52:41	5-Aug-09	0.1
650	0.1	34.7	32	0.3339	16:53:41	5-Aug-09	0.1
651	0.1	34.7	32	0.3343	16:54:41	5-Aug-09	0.1
652	0	34.7	32	0.3362	16:55:41	5-Aug-09	0.1
653	0	34.7	32	0.3361	16:56:41	5-Aug-09	0.1
654	0.2	34.7	32	0.3311	16:57:41	5-Aug-09	0.1
655	0.3	34.7	32	0.3315	16:58:41	5-Aug-09	0.1
656	0.4	34.7	32	0.3315	16:59:41	5-Aug-09	0.1
657	0	35.1	32	0.3369	17:00:41	5-Aug-09	0.1
658	0	36	33	0.3367	17:01:41	5-Aug-09	0.1
659	0	36.7	33	0.336	17:02:41	5-Aug-09	0.1
660	0	38.6	34	0.3362	17:03:41	5-Aug-09	0.1
661	0	38.7	35	0.3375	17:04:41	5-Aug-09	0.1
662	0	38.7	35	0.3375	17:05:41	5-Aug-09	0.1
663	0	38.7	35	0.3375	17:06:41	5-Aug-09	0.1
664	0	38.7	35	0.3375	17:07:41	5-Aug-09	0.1
665	0	38.7	35	0.3375	17:08:41	5-Aug-09	0.1
666	0	38.7	35	0.3375	17:09:41	5-Aug-09	0.1
667	0	38.7	35	0.3375	17:10:41	5-Aug-09	0.1
668	0	38.7	35	0.3371	17:11:41	5-Aug-09	0.1
669	0	38.7	34	0.3375	17:12:41	5-Aug-09	0.1
670	0	38.7	34	0.3375	17:13:41	5-Aug-09	0.0
671	0	38.7	34	0.3375	17:14:41	5-Aug-09	0.0
672	0	38.7	34	0.3375	17:15:41	5-Aug-09	0.0
673	0.8	38.7	34	0.3292	17:16:41	5-Aug-09	0.1
674	0.1	38.7	34	0.3354	17:17:41	5-Aug-09	0.1
675	0	38.7	34	0.3375	17:18:41	5-Aug-09	0.1
676	0	38.7	35	0.3375	17:19:41	5-Aug-09	0.1
677	0	38.7	34	0.3374	17:20:41	5-Aug-09	0.1
678	278.6	38.7	35	0.3629	17:21:41	5-Aug-09	17.5
679	0	38.7	35	0.3375	17:22:41	5-Aug-09	17.5
680	0	38.7	34	0.3375	17:23:41	5-Aug-09	17.5
681	0	38.7	35	0.3375	17:24:41	5-Aug-09	17.5
682	0	38.7	35	0.3375	17:25:41	5-Aug-09	17.5
683	0	38.7	34	0.3375	17:26:41	5-Aug-09	17.5
684	0	38.7	34	0.3375	17:27:41	5-Aug-09	17.5
685	0	38.7	34	0.3375	17:28:41	5-Aug-09	17.5
686	0.1	38.7	34	0.3462	17:29:41	5-Aug-09	17.5
687	0	38.7	34	0.3375	17:30:41	5-Aug-09	17.5
688	2.7	38.7	34	0.3555	17:31:41	5-Aug-09	17.6
689	0.3	38.7	34	0.3617	17:32:41	5-Aug-09	17.6
690	0	38.7	34	0.3375	17:33:41	5-Aug-09	17.6
691	0.4	38.7	34	0.4768	17:34:41	5-Aug-09	17.6
692	0	38.7	34	0.3375	17:35:41	5-Aug-09	17.6
693	0	38.7	34	0.3375	17:36:41	5-Aug-09	17.6
694	0	38.7	34	0.3375	17:37:41	5-Aug-09	0.2
695	0	38.7	34	0.3375	17:38:41	5-Aug-09	0.2
696	0	38.7	34	0.3375	17:39:41	5-Aug-09	0.2
697	0	38.7	34	0.3375	17:40:41	5-Aug-09	0.2
698	0	38.7	34	0.3375	17:41:41	5-Aug-09	0.2
699	0	38.7	34	0.3375	17:42:41	5-Aug-09	0.2
700	0	38.7	34	0.3375	17:43:41	5-Aug-09	0.2
701	0	38.7	34	0.3375	17:44:41	5-Aug-09	0.2
702	0	38.7	34	0.3375	17:45:41	5-Aug-09	0.2
703	0	38.7	34	0.3375	17:46:41	5-Aug-09	0.2
704	0	38.8	34	0.3375	17:47:41	5-Aug-09	0.0
705	0	38.7	34	0.3375	17:48:41	5-Aug-09	0.0
706	0	38.7	34	0.3375	17:49:41	5-Aug-09	0.0
707	0	38.7	34	0.3375	17:50:41	5-Aug-09	0.0
708	0	38.8	34	0.3375	17:51:41	5-Aug-09	0.0
709	0	38.8	34	0.3375	17:52:41	5-Aug-09	0.0
710	0.1	38.8	34	0.3932	17:53:41	5-Aug-09	0.0
711	0	38.7	34	0.3375	17:54:41	5-Aug-09	0.0
712	0.3	38.8	34	0.3932	17:55:41	5-Aug-09	0.0
713	0	38.8	34	0.3375	17:56:41	5-Aug-09	0.0
714	0	38.8	35	0.3375	17:57:41	5-Aug-09	0.0
715	0	38.8	35	0.3375	17:58:41	5-Aug-09	0.0
716	0	38.8	35	0.3375	17:59:41	5-Aug-09	0.0
717	0	38.8	35	0.3375	18:00:41	5-Aug-09	0.0
718	0	38.8	35	0.3375	18:01:41	5-Aug-09	0.0
719	0	38.8	35	0.3375	18:02:41	5-Aug-09	0.0
720	0	38.8	35	0.3375	18:03:41	5-Aug-09	0.0
721	0	38.8	35	0.3375	18:04:41	5-Aug-09	0.0
722	0	38.8	35	0.3375	18:05:41	5-Aug-09	0.0
723	0.1	38.9	35	0.4211	18:06:41	5-Aug-09	0.0
724	0	38.9	35	0.3375	18:07:41	5-Aug-09	0.0
725	0	38.9	35	0.3375	18:08:41	5-Aug-09	0.0
726	0	38.9	35	0.3375	18:09:41	5-Aug-09	0.0
727	0	38.8	35	0.3375	18:10:41	5-Aug-09	0.0
728	0	38.8	35	0.3375	18:11:41	5-Aug-09	0.0
729	0	38.8	35	0.3375	18:12:41	5-Aug-09	0.0
730	0	38.8	35	0.3375	18:13:41	5-Aug-09	0.0
731	0	38.8	35	0.3375	18:14:41	5-Aug-09	0.0
732	0	38.8	35	0.3375	18:15:41	5-Aug-09	0.0
733	0	38.8	35	0.3375	18:16:41	5-Aug-09	0.0
734	0	38.8	35	0.3375	18:17:41	5-Aug-09	0.0
735	0	38.8	35	0.3375	18:18:41	5-Aug-09	0.0
736	0	38.8	35	0.3375	18:19:41	5-Aug-09	0.0
737	0	38.8	35	0.3375	18:20:41	5-Aug-09	0.0
738	0	38.7	35	0.3375	18:21:41	5-Aug-09	0.0

DataRam 4 Dust Monitor, Serial Number D464

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
642	2.2	32.7	31	0.3604	16:42:55	5-Aug-09	1.7
643	2.6	32.7	31	0.4031	16:43:55	5-Aug-09	1.7
644	1.7	32.7	31	0.3927	16:44:55	5-Aug-09	1.8
645	1.3	32.7	31	0.3801	16:45:55	5-Aug-09	1.8
646	0.9	32.7	31	0.3667	16:46:55	5-Aug-09	1.7
647	0.5	32.7	31	0.3563	16:47:55	5-Aug-09	1.7
648	0.9	32.7	31	0.3662	16:48:55	5-Aug-09	1.6
649	1.4	32.7	31	0.3596	16:49:55	5-Aug-09	1.6
650	1.2	32.7	31	0.3493	16:50:55	5-Aug-09	1.6
651	1.3	32.7	31	0.3494	16:51:55	5-Aug-09	1.5
652	1.4	32.7	31	0.3509	16:52:55	5-Aug-09	1.5
653	1.1	32.7	31	0.3481	16:53:55	5-Aug-09	1.5
654	1.6	32.7	31	0.3524	16:54:55	5-Aug-09	1.5
655	0.7	32.7	31	0.3444	16:55:55	5-Aug-09	1.5
656	1.1	32.7	31	0.348	16:56:55	5-Aug-09	1.4
657	1	32.7	31	0.3493	16:57:55	5-Aug-09	1.3
658	1.7	32.7	31	0.3683	16:58:55	5-Aug-09	1.3
659	1.5	32.7	31	0.3643	16:59:55	5-Aug-09	1.2
660	1.2	32.7	31	0.3577	17:00:55	5-Aug-09	1.2
661	1.1	32.7	31	0.3577	17:01:55	5-Aug-09	1.2
662	1.3	32.7	31	0.3594	17:02:55	5-Aug-09	1.2
663	1.2	32.6	30	0.359	17:03:55	5-Aug-09	1.2
664	0.3	32.7	30	0.3432	17:04:55	5-Aug-09	1.2
665	2	32.7	30	0.3473	17:05:55	5-Aug-09	1.2
666	2	32.6	30	0.3501	17:06:55	5-Aug-09	1.3
667	1.2	32.7	30	0.3494	17:07:55	5-Aug-09	1.3
668	1.5	32.7	30	0.352	17:08:55	5-Aug-09	1.3
669	1.4	32.7	30	0.3511	17:09:55	5-Aug-09	1.3
670	2.2	32.7	30	0.3568	17:10:55	5-Aug-09	1.3
671	1.1	32.7	30	0.3394	17:11:55	5-Aug-09	1.4
672	1.1	32.6	30	0.3393	17:12:55	5-Aug-09	1.4
673	1	32.6	30	0.3391	17:13:55	5-Aug-09	1.4
674	0.9	32.6	30	0.3384	17:14:55	5-Aug-09	1.3
675	1.2	32.6	30	0.3363	17:15:55	5-Aug-09	1.3
676	1.2	32.6	30	0.3363	17:16:55	5-Aug-09	1.3
677	1.6	32.6	30	0.3347	17:17:55	5-Aug-09	1.3
678	0.5	32.6	30	0.3354	17:18:55	5-Aug-09	1.3
679	0.4	32.6	30	0.3357	17:19:55	5-Aug-09	1.2
680	1.1	32.6	30	0.3329	17:20:55	5-Aug-09	1.3
681	1.8	32.6	30	0.3302	17:21:55	5-Aug-09	1.3
682	1.7	32.6	30	0.3305	17:22:55	5-Aug-09	1.2
683	1.9	32.6	30	0.3224	17:23:55	5-Aug-09	1.3
684	2.4	32.6	30	0.3333	17:24:55	5-Aug-09	1.3
685	1.2	32.6	30	0.3401	17:25:55	5-Aug-09	1.3
686	1.2	32.6	30	0.3401	17:26:55	5-Aug-09	1.3
687	0.6	32.6	30	0.3387	17:27:55	5-Aug-09	1.2
688	2.1	32.6	31	0.3392	17:28:55	5-Aug-09	1.3
689	1.7	32.6	30	0.3368	17:29:55	5-Aug-09	1.3
690	0.6	32.5	30	0.3372	17:30:55	5-Aug-09	1.3
691	0.9	32.5	30	0.3398	17:31:55	5-Aug-09	1.3
692	1.3	32.5	30	0.3713	17:32:55	5-Aug-09	1.3
693	1.1	32.5	30	0.3644	17:33:55	5-Aug-09	1.3
694	1.4	32.5	30	0.373	17:34:55	5-Aug-09	1.3
695	1	32.5	30	0.3653	17:35:55	5-Aug-09	1.4
696	1.2	32.5	30	0.3771	17:36:55	5-Aug-09	1.4
697	1.2	32.5	30	0.3898	17:37:55	5-Aug-09	1.3
698	1	32.5	30	0.3808	17:38:55	5-Aug-09	1.3
699	1.1	32.5	30	0.3902	17:39:55	5-Aug-09	1.3
700	1.2	32.5	30	0.3924	17:40:55	5-Aug-09	1.2
701	0.7	32.5	30	0.3711	17:41:55	5-Aug-09	1.1
702	1	32.5	30	0.3819	17:42:55	5-Aug-09	1.1
703	1.4	32.5	30	0.4084	17:43:55	5-Aug-09	1.2
704	1.6	32.4	30	0.4088	17:44:55	5-Aug-09	1.2
705	1.1	32.4	30	0.3888	17:45:55	5-Aug-09	1.1
706	1.2	32.4	30	0.3891	17:46:55	5-Aug-09	1.2
707	1.1	32.4	30	0.3876	17:47:55	5-Aug-09	1.2
708	1.2	32.4	30	0.3907	17:48:55	5-Aug-09	1.2
709	1.2	32.4	30	0.3853	17:49:55	5-Aug-09	1.2
710	1.6	32.4	30	0.3993	17:50:55	5-Aug-09	1.2
711	0.8	32.4	30	0.3668	17:51:55	5-Aug-09	1.2
712	1.2	32.4	30	0.3767	17:52:55	5-Aug-09	1.2
713	1.7	32.3	30	0.3957	17:53:55	5-Aug-09	1.2
714	5.5	32.4	30	0.8137	17:54:55	5-Aug-09	1.5
715	6.2	32.3	30	1.4001	17:55:55	5-Aug-09	1.8
716	3.4	32.3	30	0.4457	17:56:55	5-Aug-09	1.9
717	2.5	32.3	31	0.3988	17:57:55	5-Aug-09	2.0
718	1.7	32.3	31	0.3783	17:58:55	5-Aug-09	2.1
719	2.8	32.2	31	0.6327	17:59:55	5-Aug-09	2.2
720	1.6	32.2	31	0.3901	18:00:55	5-Aug-09	2.2
721	1.5	32.2	31	0.3888	18:01:55	5-Aug-09	2.2
722	0.9	32.2	31	0.3658	18:02:55	5-Aug-09	2.2
723	0.9	32.2	31	0.3578	18:03:55	5-Aug-09	2.2
724	1.5	32.2	31	0.3756	18:04:55	5-Aug-09	2.2
725	1.6	32.2	31	0.3842	18:05:55	5-Aug-09	2.2
726	0.9	32.2	31	0.3769	18:06:55	5-Aug-09	2.2
727	2	32.2	31	0.4237	18:07:55	5-Aug-09	2.2
728	1.4	32.2	31	0.3928	18:08:55	5-Aug-09	2.3
729	1.3	32.1	31	0.3913	18:09:55	5-Aug-09	2.2
730	0.8	32.1	31	0.3679	18:10:55	5-Aug-09	1.9
731	1.5	32.1	31	0.3973	18:11:55	5-Aug-09	1.6
732	1.5	32.1	31	0.4006	18:12:55	5-Aug-09	1.5
733	1.5	32.1	31	0.4003	18:13:55	5-Aug-09	1.5
734	1.5	32.1	31	0.3986	18:14:55	5-Aug-09	1.5
735	1.2	32.1	31	0.3884	18:15:55	5-Aug-09	1.4
736	1.4	32.1	31	0.3706	18:16:55	5-Aug-09	1.3
737	1.3	32.1	31	0.3679	18:17:55	5-Aug-09	1.3
738	1.1	32.1	32	0.3759	18:18:55	5-Aug-09	1.3
739	1.2	32.1	31	0.3814	18:19:55	5-Aug-09	1.4
740	1	32.1	32	0.3442	18:20:55	5-Aug-09	1.3
741	1.2	32.1	31	0.3735	18:21:55	5-Aug-09	1.3

Appendix I
Ambient Air Dust Monitoring Results - SEAD-12 Removal Action

Seneca Army Depot Activity
Romulus, NY

DataRam 4 Dust Monitor, Serial Number D454

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
739	0	38.7	35	0.3375	18:22:41	5-Aug-09	0.0
740	0	38.7	35	0.3375	18:23:41	5-Aug-09	0.0
741	0	38.7	35	0.3375	18:24:41	5-Aug-09	0.0
742	0	38.7	35	0.3375	18:25:41	5-Aug-09	0.0
743	0	38.7	35	0.3375	18:26:41	5-Aug-09	0.0
744	0	38.6	35	0.3375	18:27:41	5-Aug-09	0.0
745	0	38.6	35	0.3375	18:28:41	5-Aug-09	0.0
746	0	38.6	35	0.3375	18:29:41	5-Aug-09	0.0
747	0	38.6	35	0.3375	18:30:41	5-Aug-09	0.0
748	0	38.6	35	0.3375	18:31:41	5-Aug-09	0.0
749	0	38.6	35	0.3375	18:32:41	5-Aug-09	0.0
750	0	38.5	35	0.3375	18:33:41	5-Aug-09	0.0
751	0	38.6	35	0.3375	18:34:41	5-Aug-09	0.0
752	0	38.5	35	0.3375	18:35:41	5-Aug-09	0.0
753	0	38.5	35	0.3375	18:36:41	5-Aug-09	0.0
754	0	38.5	35	0.3375	18:37:41	5-Aug-09	0.0
755	0	38.5	35	0.3375	18:38:41	5-Aug-09	0.0
756	0	38.5	35	0.3375	18:39:41	5-Aug-09	0.0
757	0	38.4	35	0.3375	18:40:41	5-Aug-09	0.0
758	0	38.4	35	0.3375	18:41:41	5-Aug-09	0.0
759	0	38.3	35	0.3375	18:42:41	5-Aug-09	0.0
760	0	38.4	35	0.3375	18:43:41	5-Aug-09	0.0
761	0	38.4	35	0.3375	18:44:41	5-Aug-09	0.0
762	0	38.3	35	0.3375	18:45:41	5-Aug-09	0.0
763	0	38.3	35	0.3375	18:46:41	5-Aug-09	0.0
764	0	38.3	35	0.3375	18:47:41	5-Aug-09	0.0
765	0	38.2	35	0.3375	18:48:41	5-Aug-09	0.0
766	0	38.3	35	0.3375	18:49:41	5-Aug-09	0.0
767	0	38.2	35	0.3375	18:50:41	5-Aug-09	0.0
768	0	38.2	35	0.3375	18:51:41	5-Aug-09	0.0
769	0	38.2	35	0.3375	18:52:41	5-Aug-09	0.0
770	0	38.2	36	0.3375	18:53:41	5-Aug-09	0.0
771	0	38.2	36	0.3375	18:54:41	5-Aug-09	0.0
772	0	38.1	36	0.3375	18:55:41	5-Aug-09	0.0
773	0	38.1	36	0.3375	18:56:41	5-Aug-09	0.0
774	0	38	36	0.3375	18:57:41	5-Aug-09	0.0
775	0	38.1	36	0.3375	18:58:41	5-Aug-09	0.0
776	0	38	36	0.3375	18:59:41	5-Aug-09	0.0
777	0	38.1	36	0.3375	19:00:41	5-Aug-09	0.0
778	0	38	36	0.3375	19:01:41	5-Aug-09	0.0
779	0	38	36	0.3375	19:02:41	5-Aug-09	0.0
780	0	38	36	0.3375	19:03:41	5-Aug-09	0.0
781	0	38	36	0.3375	19:04:41	5-Aug-09	0.0
782	0	37.9	35	0.3375	19:05:41	5-Aug-09	0.0
783	0	38	35	0.3375	19:06:41	5-Aug-09	0.0
784	0	37.9	35	0.3375	19:07:41	5-Aug-09	0.0
785	0	37.9	36	0.3375	19:08:41	5-Aug-09	0.0
786	0	37.9	35	0.3375	19:09:41	5-Aug-09	0.0
787	0	37.9	36	0.3375	19:10:41	5-Aug-09	0.0
788	0	37.8	36	0.3375	19:11:41	5-Aug-09	0.0
789	0	37.8	35	0.3375	19:12:41	5-Aug-09	0.0
790	0	37.8	36	0.3375	19:13:41	5-Aug-09	0.0
791	0	37.8	36	0.3375	19:14:41	5-Aug-09	0.0
792	0	37.8	36	0.3375	19:15:41	5-Aug-09	0.0
793	0	37.8	36	0.3375	19:16:41	5-Aug-09	0.0
794	0	37.8	36	0.3375	19:17:41	5-Aug-09	0.0
795	0	37.6	36	0.3375	19:18:41	5-Aug-09	0.0
796	0	37.6	36	0.3375	19:19:41	5-Aug-09	0.0
797	0	37.7	36	0.3375	19:20:41	5-Aug-09	0.0
798	0	37.6	36	0.3375	19:21:41	5-Aug-09	0.0
799	0	37.6	36	0.3375	19:22:41	5-Aug-09	0.0
800	0	37.5	36	0.3375	19:23:41	5-Aug-09	0.0
801	0	37.5	36	0.3375	19:24:41	5-Aug-09	0.0
802	0	37.5	36	0.3375	19:25:41	5-Aug-09	0.0
803	0	37.5	36	0.3375	19:26:41	5-Aug-09	0.0
804	0	37.5	36	0.3375	19:27:41	5-Aug-09	0.0
805	0	37.4	36	0.3375	19:28:41	5-Aug-09	0.0
806	0	37.4	36	0.3375	19:29:41	5-Aug-09	0.0
807	0	37.4	36	0.3375	19:30:41	5-Aug-09	0.0
808	0	37.4	36	0.3375	19:31:41	5-Aug-09	0.0
809	0	37.3	36	0.3375	19:32:41	5-Aug-09	0.0
810	0	37.3	37	0.3375	19:33:41	5-Aug-09	0.0
811	0	37.3	37	0.3375	19:34:41	5-Aug-09	0.0
812	0	37.2	37	0.3375	19:35:41	5-Aug-09	0.0
813	0	37.2	36	0.3375	19:36:41	5-Aug-09	0.0
814	0	37.2	37	0.3375	19:37:41	5-Aug-09	0.0
815	0	37.1	37	0.3375	19:38:41	5-Aug-09	0.0
816	0	37.2	37	0.3375	19:39:41	5-Aug-09	0.0
817	0	37.1	37	0.3375	19:40:41	5-Aug-09	0.0
818	0	37.1	37	0.3375	19:41:41	5-Aug-09	0.0
819	0	37	37	0.3375	19:42:41	5-Aug-09	0.0
820	0	37	37	0.3375	19:43:41	5-Aug-09	0.0
821	0	37	37	0.3375	19:44:41	5-Aug-09	0.0
822	0	37	37	0.3375	19:45:41	5-Aug-09	0.0
823	2.5	36.9	37	0.644	19:46:41	5-Aug-09	0.2
824	0	36.9	38	0.3375	19:47:41	5-Aug-09	0.2
825	0	36.9	38	0.3375	19:48:41	5-Aug-09	0.2
826	0	36.8	38	0.3375	19:49:41	5-Aug-09	0.2
827	0	36.8	38	0.3375	19:50:41	5-Aug-09	0.2
828	0	36.8	38	0.3375	19:51:41	5-Aug-09	0.2
829	0	36.7	38	0.3375	19:52:41	5-Aug-09	0.2
830	0	36.7	38	0.3375	19:53:41	5-Aug-09	0.2
831	0	36.7	38	0.3375	19:54:41	5-Aug-09	0.2
832	0	36.6	38	0.3375	19:55:41	5-Aug-09	0.2
833	0	36.6	38	0.3375	19:56:41	5-Aug-09	0.2
834	0	36.6	38	0.3375	19:57:41	5-Aug-09	0.2
835	0	36.5	38	0.3375	19:58:41	5-Aug-09	0.2
836	0	36.5	38	0.3375	19:59:41	5-Aug-09	0.2
837	0	36.5	38	0.3375	20:00:41	5-Aug-09	0.2
838	0	36.5	38	0.3375	20:01:41	5-Aug-09	0.2

DataRam 4 Dust Monitor, Serial Number D464

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
742	1.3	32.1	32	0.3789	18:22:55	5-Aug-09	1.3
743	1.2	32	31	0.3761	18:23:55	5-Aug-09	1.3
744	1.5	32	31	0.3858	18:24:55	5-Aug-09	1.3
745	1.2	32	31	0.3806	18:25:55	5-Aug-09	1.3
746	1.2	32	31	0.3755	18:26:55	5-Aug-09	1.3
747	1.9	32	31	0.4029	18:27:55	5-Aug-09	1.3
748	1.1	32	31	0.3735	18:28:55	5-Aug-09	1.3
749	1.2	32	31	0.374	18:29:55	5-Aug-09	1.3
750	1.5	32	31	0.3871	18:30:55	5-Aug-09	1.3
751	1.3	32	31	0.3785	18:31:55	5-Aug-09	1.3
752	1.1	32	31	0.3777	18:32:55	5-Aug-09	1.3
753	1.3	32	31	0.3794	18:33:55	5-Aug-09	1.3
754	1.2	31.9	31	0.3756	18:34:55	5-Aug-09	1.3
755	1.1	31.9	31	0.3731	18:35:55	5-Aug-09	1.3
756	1.1	31.9	31	0.3699	18:36:55	5-Aug-09	1.3
757	1.2	31.9	31	0.3763	18:37:55	5-Aug-09	1.3
758	1.3	31.9	31	0.3813	18:38:55	5-Aug-09	1.3
759	1.1	31.8	31	0.3709	18:39:55	5-Aug-09	1.3
760	1	31.8	31	0.3731	18:40:55	5-Aug-09	1.2
761	1.9	31.8	31	0.412	18:41:55	5-Aug-09	1.3
762	1.3	31.8	32	0.3661	18:42:55	5-Aug-09	1.3
763	1.3	31.8	31	0.3742	18:43:55	5-Aug-09	1.3
764	0.8	31.7	32	0.3626	18:44:55	5-Aug-09	1.2
765	1.5	31.7	31	0.3894	18:45:55	5-Aug-09	1.3
766	1.1	31.7	32	0.3751	18:46:55	5-Aug-09	1.2
767	1.3	31.7	32	0.3812	18:47:55	5-Aug-09	1.2
768	1	31.7	32	0.3655	18:48:55	5-Aug-09	1.2
769	1.4	31.6	32	0.376	18:49:55	5-Aug-09	1.2
770	0.9	31.6	32	0.3609	18:50:55	5-Aug-09	1.2
771	1.3	31.6	32	0.3728	18:51:55	5-Aug-09	1.2
772	0.7	31.6	32	0.3583	18:52:55	5-Aug-09	1.2
773	1.3	31.6	32	0.3745	18:53:55	5-Aug-09	1.2
774	1.1	31.6	32	0.3684	18:54:55	5-Aug-09	1.2
775	0.9	31.5	32	0.3622	18:55:55	5-Aug-09	1.2
776	1.5	31.5	32	0.3773	18:56:55	5-Aug-09	1.2
777	1.1	31.5	32	0.3676	18:57:55	5-Aug-09	1.2
778	1.5	31.5	32	0.3817	18:58:55	5-Aug-09	1.2
779	1.5	31.5	32	0.378	18:59:55	5-Aug-09	1.2
780	0.8	31.4	32	0.3594	19:00:55	5-Aug-09	1.2
781	1.5	31.4	32	0.3796	19:01:55	5-Aug-09	1.2
782	0.6	31.4	32	0.3526	19:02:55	5-Aug-09	1.2
783	1.5	31.4	32	0.3776	19:03:55	5-Aug-09	1.2
784	0.4	31.4	32	0.3497	19:04:55	5-Aug-09	1.1
785	0.8	31.3	32	0.3597	19:05:55	5-Aug-09	1.1
786	0.7	31.3	32	0.3554	19:06:55	5-Aug-09	1.1
787	0.9	31.3	32	0.3627	19:07:55	5-Aug-09	1.1
788	0.8	31.3	32	0.3597	19:08:55	5-Aug-09	1.1
789	1.4	31.2	32	0.3744	19:09:55	5-Aug-09	1.1
790	1.5	31.2	32	0.3808	19:10:55	5-Aug-09	1.1
791	1.4	31.2	32	0.3429	19:11:55	5-Aug-09	1.1
792	0.6	31.2	32	0.3396	19:12:55	5-Aug-09	1.1
793	1.5	31.2	32	0.343	19:13:55	5-Aug-09	1.1
794	0.6	31.1	32	0.3398	19:14:55	5-Aug-09	1.0
795	1.1	31.1	32	0.3415	19:15:55	5-Aug-09	1.0
796	1.1	31.1	32	0.3415	19:16:55	5-Aug-09	1.0
797	0.8	31.1	32	0.3406	19:17:55	5-Aug-09	1.0
798	0.9	31.1	33	0.3408	19:18:55	5-Aug-09	1.0
799	1	31.1	33	0.3412	19:19:55	5-Aug-09	1.0
800	0.9	31.1	33	0.3409	19:20:55	5-Aug-09	1.0
801	1.3	31	33	0.3422	19:21:55	5-Aug-09	1.0
802	0.8	31	33	0.3404	19:22:55	5-Aug-09	1.0
803	0.7	31	33	0.3399	19:23:55	5-Aug-09	1.0
804	0.7	31	33	0.3401	19:24:55	5-Aug-09	1.0
805	1.4	31	33	0.3425	19:25:55	5-Aug-09	1.0
806	1.1	30.9	33	0.3413	19:26:55	5-Aug-09	1.0
807	1.4	30.9	33	0.3426	19:27:55	5-Aug-09	1.0
808	1.3	30.9	33	0.3425	19:28:55	5-Aug-09	1.0
809	0.8	30.9	33	0.3404	19:29:55	5-Aug-09	1.0
810	0.4	30.9	33	0.3391	19:30:55	5-Aug-09	1.0
811	0.7	30.8	33	0.3401	19:31:55	5-Aug-09	1.0
812	1.1	30.8	33	0.3412	19:32:55	5-Aug-09	1.0
813	1.2	30.8	33	0.3419	19:33:55	5-Aug-09	1.0
814	1.2	30.8	33	0.3498	19:34:55	5-Aug-09	1.0
815	1.4	30.7	33	0.3672	19:35:55	5-Aug-09	1.0
816	1.2	30.7	33	0.365	19:36:55	5-Aug-09	1.0
817	1.3	30.7	34	0.3649	19:37:55	5-Aug-09	1.0
818	1.1	30.7	33	0.3586	19:38:55	5-Aug-09	1.1
819	1.7	30.7	33	0.3735	19:39:55	5-Aug-09	1.1
820	1.4	30.6	34	0.3673	19:40:55	5-Aug-09	1.2
821	1.8	30.6	34	0.3758	19:41:55	5-Aug-09	1.2
822	1.7	30.6	34	0.3739	19:42:55	5-Aug-09	1.2
823	1	30.6	34	0.3584	19:43:55	5-Aug-09	1.2
824	1.8	30.6	34	0.3762	19:44:55	5-Aug-09	1.2
825	1.3	30.5	34	0.3641	19:45:55	5-Aug-09	1.3
826	1.6	30.5	34	0.372	19:46:55	5-Aug-09	1.3
827	1.6	30.5	34	0.3717	19:47:55	5-Aug-09	1.4
828	1.8	30.5	34	0.3938	19:48:55	5-Aug-09	1.4
829	1.9	30.4	34	0.3965	19:49:55	5-Aug-09	1.5
830	1.4	30.4	34	0.3811	19:50:55	5-Aug-09	1.5
831	1.3	30.3	34	0.3734	19:51:55	5-Aug-09	1.5
832	1.6	30.3	34	0.3831	19:52:55	5-Aug-09	1.5
833	1.2	30.3	34	0.3729	19:53:55	5-Aug-09	1.5
834	1.4	30.2	34	0.3766	19:54:55	5-Aug-09	1.5
835	2.4	30.2	34	0.4058	19:55:55	5-Aug-09	1.6
836	2.2	30.2	34	0.3996	19:56:55	5-Aug-09	1.6
837	1.4	30.2	35	0.3783	19:57:55	5-Aug-09	1.6
838	1.3	30.1	35	0.3671	19:58:55	5-Aug-09	1.6
839	1.7	30.1	35	0.379	19:59:55	5-Aug-09	1.6
840	1.9	30.1	35	0.3853	20:00:55	5-Aug-09	1.6
841	1.5	30.1	35	0.3737	20:01:55	5-Aug-09	1.6

Appendix I
Ambient Air Dust Monitoring Results - SEAD-12 Removal Action

Seneca Army Depot Activity
Romulus, NY

DataRam 4 Dust Monitor, Serial Number D454

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
839	0	36.4	38	0.3375	20:02:41	5-Aug-09	0.0
840	0	36.4	38	0.3375	20:03:41	5-Aug-09	0.0
841	0	36.3	38	0.3375	20:04:41	5-Aug-09	0.0
842	0	36.3	38	0.3375	20:05:41	5-Aug-09	0.0
843	0	36.2	38	0.3375	20:06:41	5-Aug-09	0.0
844	0	36.2	39	0.3375	20:07:41	5-Aug-09	0.0
845	0	36.2	39	0.3375	20:08:41	5-Aug-09	0.0
846	0	36.1	39	0.3375	20:09:41	5-Aug-09	0.0
847	0	36.1	40	0.3375	20:10:41	5-Aug-09	0.0
848	0	36	40	0.3375	20:11:41	5-Aug-09	0.0
849	0	36	40	0.3375	20:12:41	5-Aug-09	0.0
850	0	36	40	0.3375	20:13:41	5-Aug-09	0.0
851	0	35.9	40	0.3375	20:14:41	5-Aug-09	0.0
852	0	35.9	40	0.3375	20:15:41	5-Aug-09	0.0
853	0	35.8	40	0.3375	20:16:41	5-Aug-09	0.0
854	0	35.7	40	0.3375	20:17:41	5-Aug-09	0.0
855	0	35.7	41	0.3375	20:18:41	5-Aug-09	0.0
856	0	35.6	41	0.3375	20:19:41	5-Aug-09	0.0
857	0	35.6	41	0.3375	20:20:41	5-Aug-09	0.0
858	0	35.6	41	0.3375	20:21:41	5-Aug-09	0.0
859	0	35.5	41	0.3375	20:22:41	5-Aug-09	0.0
860	0	35.5	41	0.3397	20:23:41	5-Aug-09	0.0
861	0	35.4	42	0.3375	20:24:41	5-Aug-09	0.0
862	0	35.3	42	0.3375	20:25:41	5-Aug-09	0.0
863	0	35.2	42	0.3375	20:26:41	5-Aug-09	0.0
864	0	35.2	42	0.3375	20:27:41	5-Aug-09	0.0
865	0	35.1	43	0.3375	20:28:41	5-Aug-09	0.0
866	0	35.1	43	0.3375	20:29:41	5-Aug-09	0.0
867	0	35	43	0.3375	20:30:41	5-Aug-09	0.0
868	0	34.9	43	0.3375	20:31:41	5-Aug-09	0.0
869	0	34.8	44	0.3375	20:32:41	5-Aug-09	0.0
870	0	34.8	44	0.3375	20:33:41	5-Aug-09	0.0
871	0	34.7	44	0.3375	20:34:41	5-Aug-09	0.0
872	0	34.6	44	0.3375	20:35:41	5-Aug-09	0.0
873	0	34.6	44	0.3375	20:36:41	5-Aug-09	0.0
874	0	34.5	44	0.3375	20:37:41	5-Aug-09	0.0
875	0	34.4	44	0.3375	20:38:41	5-Aug-09	0.0
876	0	34.3	44	0.3375	20:39:41	5-Aug-09	0.0
877	0.1	31.8	43	0.3932	20:40:41	5-Aug-09	0.0
878	1.4	30.9	42	0.6998	20:41:41	5-Aug-09	0.1
879	0.3	30.7	42	0.3546	20:42:41	5-Aug-09	0.1
880	0.8	30.7	42	0.4054	20:43:41	5-Aug-09	0.2
881	0.4	30.6	43	0.3719	20:44:41	5-Aug-09	0.2
882	2.4	30.5	43	0.3912	20:45:41	5-Aug-09	0.3
883	0.4	30.4	43	0.3298	20:46:41	5-Aug-09	0.4
884	0	30.3	43	0.3375	20:47:41	5-Aug-09	0.4
885	0	30.3	43	0.3375	20:48:41	5-Aug-09	0.4
886	0.7	30.2	43	0.3234	20:49:41	5-Aug-09	0.4
887	0.6	30.1	43	0.3266	20:50:41	5-Aug-09	0.4
888	1.5	30	44	0.2935	20:51:41	5-Aug-09	0.5
889	0.1	29.9	44	0.3326	20:52:41	5-Aug-09	0.5
890	1.6	29.8	44	0.3182	20:53:41	5-Aug-09	0.6
891	0.5	29.7	44	0.3311	20:54:41	5-Aug-09	0.7
892	1	29.6	44	0.3177	20:55:41	5-Aug-09	0.7
893	1.1	29.5	44	0.3227	20:56:41	5-Aug-09	0.8
894	1.4	29.4	44	0.4255	20:57:41	5-Aug-09	0.8
895	0.4	29.3	44	0.4178	20:58:41	5-Aug-09	0.8
896	0.5	29.2	45	0.4736	20:59:41	5-Aug-09	0.8
897	1	29.2	45	0.8153	21:00:41	5-Aug-09	0.8
898	0.6	29.1	45	0.6756	21:01:41	5-Aug-09	0.7
899	0	29	45	0.338	21:02:41	5-Aug-09	0.7
900	1.3	28.8	45	0.5992	21:03:41	5-Aug-09	0.8
901	1.7	28.8	46	0.4977	21:04:41	5-Aug-09	0.9
902	0.5	28.7	46	0.3875	21:05:41	5-Aug-09	0.9
903	1.5	28.6	46	0.5747	21:06:41	5-Aug-09	0.9
904	3.2	28.5	46	1.0808	21:07:41	5-Aug-09	1.0
905	3	28.4	46	0.9407	21:08:41	5-Aug-09	1.2
906	2.5	28.3	47	1.1254	21:09:41	5-Aug-09	1.3
907	1.6	28.1	47	0.7931	21:10:41	5-Aug-09	1.3
908	2.2	28.1	47	0.9173	21:11:41	5-Aug-09	1.4
909	2.1	28	47	0.5649	21:12:41	5-Aug-09	1.5
910	2.1	27.9	47	0.6848	21:13:41	5-Aug-09	1.5
911	1.6	27.8	48	0.3106	21:14:41	5-Aug-09	1.6
912	1	27.7	48	0.315	21:15:41	5-Aug-09	1.6
913	0.7	27.6	48	0.329	21:16:41	5-Aug-09	1.6
914	1	27.5	48	0.4666	21:17:41	5-Aug-09	1.6
915	1	27.4	48	0.6871	21:18:41	5-Aug-09	1.7
916	3	27.3	49	1.0427	21:19:41	5-Aug-09	1.8
917	0.9	27.2	49	0.694	21:20:41	5-Aug-09	1.7
918	0.8	27.1	49	0.7032	21:21:41	5-Aug-09	1.8
919	0.2	27.1	49	0.4155	21:22:41	5-Aug-09	1.7
920	0.2	27	49	0.3526	21:23:41	5-Aug-09	1.5
921	0.2	26.9	50	0.3481	21:24:41	5-Aug-09	1.3
922	1	26.8	50	0.6019	21:25:41	5-Aug-09	1.2
923	0.8	26.7	50	0.4567	21:26:41	5-Aug-09	1.2
924	0	26.6	50	0.3375	21:27:41	5-Aug-09	1.0
925	0	26.5	50	0.3375	21:28:41	5-Aug-09	0.9
926	1.5	26.4	51	0.4658	21:29:41	5-Aug-09	0.9
927	0	26.3	51	0.3375	21:30:41	5-Aug-09	0.8
928	0	26.3	51	0.3375	21:31:41	5-Aug-09	0.7
929	2.7	26.2	51	0.4381	21:32:41	5-Aug-09	0.8
930	0.3	26.1	51	0.331	21:33:41	5-Aug-09	0.8
931	1.2	26	52	0.3234	21:34:41	5-Aug-09	0.8
932	0	26	52	0.3375	21:35:41	5-Aug-09	0.6
933	0	25.9	52	0.3375	21:36:41	5-Aug-09	0.6
934	0	25.8	52	0.3375	21:37:41	5-Aug-09	0.5
935	0	25.7	52	0.3375	21:38:41	5-Aug-09	0.5
936	0	25.6	53	0.3375	21:39:41	5-Aug-09	0.5
937	2.3	25.5	53	1.0054	21:40:41	5-Aug-09	0.6
938	1.3	25.5	53	0.341	21:41:41	5-Aug-09	0.6

DataRam 4 Dust Monitor, Serial Number D464

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
842	1.5	30	35	0.3746	20:02:55	5-Aug-09	1.6
843	1.9	30	35	0.3815	20:03:55	5-Aug-09	1.7
844	1.3	30	35	0.3617	20:04:55	5-Aug-09	1.6
845	2	30	35	0.3774	20:05:55	5-Aug-09	1.6
846	1.3	29.9	35	0.3703	20:06:55	5-Aug-09	1.6
847	1.7	29.9	35	0.3783	20:07:55	5-Aug-09	1.6
848	1.9	29.8	35	0.3833	20:08:55	5-Aug-09	1.7
849	1	29.8	35	0.3595	20:09:55	5-Aug-09	1.7
850	0.9	29.7	35	0.356	20:10:55	5-Aug-09	1.6
851	1.3	29.7	35	0.3614	20:11:55	5-Aug-09	1.6
852	1.6	29.6	35	0.3684	20:12:55	5-Aug-09	1.5
853	1.5	29.6	36	0.3668	20:13:55	5-Aug-09	1.5
854	1.3	29.6	36	0.3627	20:14:55	5-Aug-09	1.5
855	1.2	29.5	36	0.3636	20:15:55	5-Aug-09	1.5
856	1.3	29.5	36	0.3629	20:16:55	5-Aug-09	1.5
857	1.2	29.4	36	0.3619	20:17:55	5-Aug-09	1.4
858	1.5	29.4	36	0.3659	20:18:55	5-Aug-09	1.4
859	1.4	29.3	36	0.3617	20:19:55	5-Aug-09	1.4
860	1	29.3	36	0.3512	20:20:55	5-Aug-09	1.4
861	2.1	29.2	37	0.4072	20:21:55	5-Aug-09	1.4
862	2.2	29.2	37	0.4174	20:22:55	5-Aug-09	1.4
863	1.2	29.1	37	0.3784	20:23:55	5-Aug-09	1.4
864	2.1	29	38	0.4007	20:24:55	5-Aug-09	1.4
865	1.7	29	38	0.3652	20:25:55	5-Aug-09	1.5
866	1.8	28.9	38	0.3685	20:26:55	5-Aug-09	1.5
867	1.4	28.9	39	0.3612	20:27:55	5-Aug-09	1.5
868	1.9	28.8	39	0.376	20:28:55	5-Aug-09	1.6
869	1.5	28.7	39	0.376	20:29:55	5-Aug-09	1.6
870	1.8	28.6	39	0.3957	20:30:55	5-Aug-09	1.6
871	1.1	28.6	39	0.3776	20:31:55	5-Aug-09	1.6
872	1.4	28.5	39	0.3867	20:32:55	5-Aug-09	1.6
873	1.3	28.4	40	0.3823	20:33:55	5-Aug-09	1.6
874	1.2	28.4	40	0.3757	20:34:55	5-Aug-09	1.6
875	1.8	28.3	41	0.3897	20:35:55	5-Aug-09	1.6
876	2.2	28.2	41	0.3994	20:36:55	5-Aug-09	1.7
877	1.5	28.1	41	0.3802	20:37:55	5-Aug-09	1.6
878	1.8	28.1	41	0.3861	20:38:55	5-Aug-09	1.6
879	1.6	28	41	0.3841	20:39:55	5-Aug-09	1.6
880	1.3	27.9	41	0.3721	20:40:55	5-Aug-09	1.6
881	2	27.8	42	0.3782	20:41:55	5-Aug-09	1.6
882	1.1	27.7	42	0.351	20:42:55	5-Aug-09	1.6
883	1.6	27.6	42	0.3579	20:43:55	5-Aug-09	1.6
884	1.7	27.6	42	0.359	20:44:55	5-Aug-09	1.6
885	1.3	27.5	42	0.3529	20:45:55	5-Aug-09	1.5
886	1.4	27.4	42	0.3751	20:46:55	5-Aug-09	1.5
887	1.5	27.3	43	0.3796	20:47:55	5-Aug-09	1.5
888	2.1	27.2	43	0.4604	20:48:55	5-Aug-09	1.6
889	1.6	27.2	43	0.4033	20:49:55	5-Aug-09	1.6
890	1.8	27.1	43	0.4182	20:50:55	5-Aug-09	1.6
891	2.2	27	43	0.4313	20:51:55	5-Aug-09	1.7
892	1.7	26.9	43	0.4094	20:52:55	5-Aug-09	1.6
893	1.7	26.8	44	0.4048	20:53:55	5-Aug-09	1.7
894	1.6	26.7	44	0.3871	20:54:55	5-Aug-09	1.6
895	1.9	26.6	44	0.3913	20:55:55	5-Aug-09	1.7
896	2	26.6	44	0.3986	20:56:55	5-Aug-09	1.7
897	2.5	26.5	44	0.4199	20:57:55	5-Aug-09	1.7
898	2.1	26.4	45	0.4078	20:58:55	5-Aug-09	1.8
899	2.2	26.3	45	0.4048	20:59:55	5-Aug-09	1.8
900	2.2	26.2	45	0.3959	21:00:55	5-Aug-09	1.9
901	1.9	26.1	45	0.3913	21:01:55	5-Aug-09	1.9
902	1.9	26	45	0.3883	21:02:55	5-Aug-09	1.9
903	1.7	26	45	0.3802	21:03:55	5-Aug-09	1.9
904	2.3	25.9	45	0.3902	21:04:55	5-Aug-09	2.0
905	1.7	25.8	46	0.3774	21:05:55	5-Aug-09	2.0
906	1.8	25.7	46	0.3723	21:06:55	5-Aug-09	2.0
907	1.8	25.6	46	0.3672	21:07:55	5-Aug-09	1.9
908	1.9	25.5	46	0.3728	21:08:55	5-Aug-09	2.0
909	2.3	25.5	47	0.3824	21:09:55	5-Aug-09	2.0
910	2.2	25.4	47	0.3761	21:10:55	5-Aug-09	2.0
911	1.7	25.3	47	0.3658	21:11:55	5-Aug-09	2.0
912	2.2	25.2	47	0.3714	21:12:55	5-Aug-09	2.0
913	1.8	25.1	47	0.3585	21:13:55	5-Aug-09	2.0
914	1.6	25	48	0.3564	21:14:55	5-Aug-09	2.0
915	2.4	25	48	0.3696	21:15:55	5-Aug-09	2.0
916	1.8	24.9	48	0.3634	21:16:55	5-Aug-09	1.9
917	2.1	24.8	48	0.3676	21:17:55	5-Aug-09	2.0
918	2.6	24.7	48	0.3747	21:18:55	5-Aug-09	2.0
919	2.5	24.6	49	0.3783	21:19:55	5-Aug-09	2.0
920	2.5	24.6	49	0.3829	21:20:55	5-Aug-09	2.1
921	2.8	24.5	49	0.3805	21:21:55	5-Aug-09	2.1
922	2.2	24.4	49	0.3674	21:22:55	5-Aug-09	2.2
923	2	24.3	49	0.3527	21:23:55	5-Aug-09	2.2
924	1.7	24.2	50	0.3481	21:24:55	5-Aug-09	2.2
925	2.4	24.2	50	0.3533	21:25:55	5-Aug-09	2.2
926	2.1	24.1	50	0.343	21:26:55	5-Aug-09	2.2
927	2.2	24.1	50	0.3552	21:27:55	5-Aug-09	2.2
928	2.3	24	50	0.3779	21:28:55	5-Aug-09	2.2
929	2	23.9	50	0.3615	21:29:55	5-Aug-09	2.2
930	2.5	23.8	51	0.3597	21:30:55	5-Aug-09	2.3
931	2.5	23.7	51	0.3241	21:31:55	5-Aug-09	2.3
932	2.1	23.7	51	0.3304	21:32:55	5-Aug-09	2.3
933	2.9	23.6	51	0.3576	21:33:55	5-Aug-09	2.3
934	2.5	23.5	51	0.3709	21:34:55	5-Aug-09	2.3
935	2.1	23.5	52	0.3653	21:35:55	5-Aug-09	2.3
936	2.4	23.4	52	0.3681	21:36:55	5-Aug-09	2.3
937	2.3	23.3	52	0.367	21:37:55	5-Aug-09	2.3
938	2.6	23.2	52	0.371	21:38:55	5-Aug-09	2.3
939	2.6	23.2	52	0.3715	21:39:55	5-Aug-09	2.3
940	2.6	23.1	53	0.3708	21:40:55	5-Aug-09	2.4
941	2.8	23	53	0.3591	21:41:55	5-Aug-09	2.4

Appendix I
Ambient Air Dust Monitoring Results - SEAD-12 Removal Action

Seneca Army Depot Activity
Romulus, NY

DataRam 4 Dust Monitor, Serial Number D454

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
939	1.5	25.4	53	0.3967	21:42:41	5-Aug-09	0.7
940	4.4	25.4	54	0.7602	21:43:41	5-Aug-09	1.0
941	3.6	25.3	54	0.2643	21:44:41	5-Aug-09	1.2
942	1.6	25.2	54	0.3077	21:45:41	5-Aug-09	1.2
943	1.3	25.1	54	0.314	21:46:41	5-Aug-09	1.3
944	2.8	25.1	54	0.3055	21:47:41	5-Aug-09	1.4
945	3.4	25	54	0.3922	21:48:41	5-Aug-09	1.5
946	2.3	24.9	55	0.6475	21:49:41	5-Aug-09	1.6
947	1.8	24.8	55	0.678	21:50:41	5-Aug-09	1.6
948	4.8	24.7	55	0.4212	21:51:41	5-Aug-09	1.9
949	2.9	24.7	55	0.5294	21:52:41	5-Aug-09	2.1
950	0.5	24.6	55	0.3374	21:53:41	5-Aug-09	2.2
951	1.7	24.5	55	0.4018	21:54:41	5-Aug-09	2.3
952	2.2	24.5	56	0.5537	21:55:41	5-Aug-09	2.4
953	2.8	24.4	56	0.8708	21:56:41	5-Aug-09	2.4
954	0.7	24.3	56	0.3659	21:57:41	5-Aug-09	2.4
955	2	24.3	56	0.3431	21:58:41	5-Aug-09	2.4
956	1.4	24.2	56	0.319	21:59:41	5-Aug-09	2.2
957	1.9	24.1	56	0.3218	22:00:41	5-Aug-09	2.1
958	1.5	24	57	0.3165	22:01:41	5-Aug-09	2.1
959	1.9	24	57	0.3169	22:02:41	5-Aug-09	2.2
960	2.4	23.9	57	0.3292	22:03:41	5-Aug-09	2.1
961	0.9	23.9	57	0.3343	22:04:41	5-Aug-09	2.0
962	1.9	23.8	57	0.3296	22:05:41	5-Aug-09	2.0
963	0.8	23.8	57	0.3228	22:06:41	5-Aug-09	1.9
964	1.3	23.7	57	0.3192	22:07:41	5-Aug-09	1.7
965	1	23.6	57	0.3168	22:08:41	5-Aug-09	1.6
966	0.5	23.6	57	0.3213	22:09:41	5-Aug-09	1.6
967	1.1	23.5	58	0.3084	22:10:41	5-Aug-09	1.5
968	2.3	23.5	58	0.2796	22:11:41	5-Aug-09	1.5
969	2.1	23.4	58	0.2729	22:12:41	5-Aug-09	1.5
970	1.9	23.3	58	0.2875	22:13:41	5-Aug-09	1.6
971	2	23.3	58	0.2738	22:14:41	5-Aug-09	1.6
972	1.2	23.2	58	0.2957	22:15:41	5-Aug-09	1.5
973	1.2	23.2	59	0.2927	22:16:41	5-Aug-09	1.5
974	1	23.1	59	0.2993	22:17:41	5-Aug-09	1.5
975	1.7	23.1	59	0.2836	22:18:41	5-Aug-09	1.5
976	0.8	23	60	0.3073	22:19:41	5-Aug-09	1.4
977	1.4	22.9	60	0.2917	22:20:41	5-Aug-09	1.4
978	1.6	22.9	60	0.2901	22:21:41	5-Aug-09	1.4
979	1.4	22.8	60	0.2855	22:22:41	5-Aug-09	1.4
980	1.7	22.7	60	0.2812	22:23:41	5-Aug-09	1.4
981	1.4	22.7	61	0.285	22:24:41	5-Aug-09	1.5
982	1.4	22.7	60	0.29	22:25:41	5-Aug-09	1.5
983	1.9	22.6	60	0.2885	22:26:41	5-Aug-09	1.6
984	2	22.5	61	0.2675	22:27:41	5-Aug-09	1.5
985	1.9	22.5	61	0.2779	22:28:41	5-Aug-09	1.5
986	1.9	22.4	61	0.2768	22:29:41	5-Aug-09	1.5
987	2.2	22.4	61	0.2602	22:30:41	5-Aug-09	1.5
988	2.2	22.4	61	0.2624	22:31:41	5-Aug-09	1.6
989	1.5	22.3	62	0.2886	22:32:41	5-Aug-09	1.6
990	1.3	22.3	62	0.2933	22:33:41	5-Aug-09	1.6
991	1.6	22.2	62	0.2885	22:34:41	5-Aug-09	1.6
992	1.2	22.1	62	0.2992	22:35:41	5-Aug-09	1.7
993	1.4	22.1	62	0.2863	22:36:41	5-Aug-09	1.7
994	1.8	22	62	0.2768	22:37:41	5-Aug-09	1.7
995	1.5	22	62	0.2865	22:38:41	5-Aug-09	1.7
996	0.5	21.9	63	0.3159	22:39:41	5-Aug-09	1.6
997	0.8	21.9	63	0.3067	22:40:41	5-Aug-09	1.6
998	0.6	21.8	63	0.3104	22:41:41	5-Aug-09	1.5
999	0.4	21.8	63	0.3189	22:42:41	5-Aug-09	1.4
1000	0.5	21.8	63	0.3134	22:43:41	5-Aug-09	1.3
1001	0.3	21.7	63	0.3235	22:44:41	5-Aug-09	1.2
1002	0.5	21.7	63	0.3153	22:45:41	5-Aug-09	1.1
1003	0.5	21.7	64	0.3184	22:46:41	5-Aug-09	1.0
1004	0.3	21.5	64	0.3253	22:47:41	5-Aug-09	0.9
1005	0.2	21.5	64	0.3255	22:48:41	5-Aug-09	0.8
1006	0.2	21.5	64	0.3291	22:49:41	5-Aug-09	0.8
1007	0.2	21.4	64	0.3259	22:50:41	5-Aug-09	0.7
1008	0.3	21.4	64	0.3274	22:51:41	5-Aug-09	0.6
1009	0.6	21.4	64	0.3126	22:52:41	5-Aug-09	0.6
1010	0.6	21.3	65	0.3139	22:53:41	5-Aug-09	0.5
1011	0.8	21.3	65	0.3089	22:54:41	5-Aug-09	0.5
1012	1.1	21.3	65	0.2966	22:55:41	5-Aug-09	0.5
1013	1.2	21.3	65	0.2981	22:56:41	5-Aug-09	0.5
1014	1.9	21.2	65	0.2715	22:57:41	5-Aug-09	0.6
1015	2.1	21.1	65	0.2689	22:58:41	5-Aug-09	0.7
1016	2	21.6	65	0.2784	22:59:41	5-Aug-09	0.8
1017	0	23.6	63	0.3375	23:00:41	5-Aug-09	0.8
1018	0	23.6	63	0.337	23:01:41	5-Aug-09	0.8
1019	0	23.6	63	0.3375	23:02:41	5-Aug-09	0.7
1020	0	23.5	63	0.3375	23:03:41	5-Aug-09	0.7
1021	0	23.4	63	0.3375	23:04:41	5-Aug-09	0.7
1022	0	23.4	63	0.3375	23:05:41	5-Aug-09	0.7

DataRam 4 Dust Monitor, Serial Number D464

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
942	2.6	23	53	0.3519	21:42:55	5-Aug-09	2.4
943	2.7	22.9	53	0.3521	21:43:55	5-Aug-09	2.5
944	3.1	22.8	53	0.3767	21:44:55	5-Aug-09	2.5
945	3	22.7	53	0.4386	21:45:55	5-Aug-09	2.6
946	2.6	22.7	54	0.3605	21:46:55	5-Aug-09	2.6
947	2.1	22.6	54	0.3512	21:47:55	5-Aug-09	2.6
948	2.6	22.6	54	0.3748	21:48:55	5-Aug-09	2.6
949	2.7	22.5	54	0.3723	21:49:55	5-Aug-09	2.6
950	2.8	22.5	54	0.394	21:50:55	5-Aug-09	2.6
951	3.2	22.4	54	0.4148	21:51:55	5-Aug-09	2.7
952	2.8	22.3	55	0.4001	21:52:55	5-Aug-09	2.7
953	2.8	22.2	55	0.3802	21:53:55	5-Aug-09	2.7
954	2.6	22.2	55	0.3702	21:54:55	5-Aug-09	2.7
955	2.5	22.1	55	0.365	21:55:55	5-Aug-09	2.7
956	2.2	22.1	55	0.3583	21:56:55	5-Aug-09	2.7
957	3.2	22	55	0.3865	21:57:55	5-Aug-09	2.7
958	2.8	22	55	0.3786	21:58:55	5-Aug-09	2.7
959	3	21.9	55	0.3748	21:59:55	5-Aug-09	2.8
960	2.5	21.8	55	0.3596	22:00:55	5-Aug-09	2.7
961	2.4	21.7	55	0.3617	22:01:55	5-Aug-09	2.7
962	3.1	21.7	56	0.3781	22:02:55	5-Aug-09	2.7
963	2.3	21.6	56	0.3737	22:03:55	5-Aug-09	2.7
964	2.3	21.6	56	0.3727	22:04:55	5-Aug-09	2.7
965	2.7	21.5	56	0.3861	22:05:55	5-Aug-09	2.7
966	2.4	21.5	56	0.3735	22:06:55	5-Aug-09	2.7
967	3.2	21.4	56	0.3937	22:07:55	5-Aug-09	2.7
968	3	21.3	57	0.3886	22:08:55	5-Aug-09	2.7
969	2.6	21.2	57	0.3653	22:09:55	5-Aug-09	2.7
970	2.4	21.2	57	0.3581	22:10:55	5-Aug-09	2.7
971	2.8	21.1	57	0.361	22:11:55	5-Aug-09	2.7
972	3.2	21.1	57	0.3948	22:12:55	5-Aug-09	2.7
973	3.2	21	57	0.4036	22:13:55	5-Aug-09	2.7
974	3.3	21	57	0.3542	22:14:55	5-Aug-09	2.8
975	2.7	20.9	57	0.3427	22:15:55	5-Aug-09	2.8
976	3	20.9	58	0.3546	22:16:55	5-Aug-09	2.8
977	3	20.8	58	0.3538	22:17:55	5-Aug-09	2.8
978	3	20.7	58	0.3658	22:18:55	5-Aug-09	2.8
979	3.3	20.7	58	0.4027	22:19:55	5-Aug-09	2.9
980	3.3	20.6	58	0.4061	22:20:55	5-Aug-09	2.9
981	3.5	20.6	58	0.3919	22:21:55	5-Aug-09	3.0
982	3	20.5	59	0.3636	22:22:55	5-Aug-09	3.0
983	3.5	20.5	59	0.3624	22:23:55	5-Aug-09	3.1
984	3.4	20.4	59	0.3748	22:24:55	5-Aug-09	3.1
985	2.9	20.4	60	0.3898	22:25:55	5-Aug-09	3.1
986	2.8	20.3	60	0.3878	22:26:55	5-Aug-09	3.1
987	3.2	20.2	60	0.3845	22:27:55	5-Aug-09	3.1
988	2.6	20.2	60	0.3294	22:28:55	5-Aug-09	3.1
989	3.5	20.2	60	0.2718	22:29:55	5-Aug-09	3.1
990	2.9	20.1	60	0.2758	22:30:55	5-Aug-09	3.1
991	2.9	20.1	60	0.2828	22:31:55	5-Aug-09	3.1
992	3	20	60	0.2935	22:32:55	5-Aug-09	3.1
993	2.7	20	61	0.301	22:33:55	5-Aug-09	3.1
994	2.7	19.9	61	0.3044	22:34:55	5-Aug-09	3.1
995	3.2	19.9	61	0.3109	22:35:55	5-Aug-09	3.1
996	3.6	19.8	61	0.3184	22:36:55	5-Aug-09	3.1
997	3.4	19.8	61	0.3523	22:37:55	5-Aug-09	3.1
998	3.3	19.7	62	0.3413	22:38:55	5-Aug-09	3.1
999	3.3	19.7	62	0.3263	22:39:55	5-Aug-09	3.1
1000	3.2	19.7	62	0.3287	22:40:55	5-Aug-09	3.1
1001	3.4	19.6	62	0.341	22:41:55	5-Aug-09	3.1
1002	3.3	19.6	62	0.337	22:42:55	5-Aug-09	3.1
1003	4.2	19.5	62	0.3395	22:43:55	5-Aug-09	3.2
1004	3.4	19.5	63	0.3119	22:44:55	5-Aug-09	3.3
1005	2.9	19.5	63	0.3174	22:45:55	5-Aug-09	3.2
1006	3.4	19.4	63	0.3161	22:46:55	5-Aug-09	3.2
1007	3.4	19.4	63	0.3161	22:47:55	5-Aug-09	3.3
1008	3.2	19.3	63	0.3264	22:48:55	5-Aug-09	3.3
1009	3.3	19.3	63	0.3205	22:49:55	5-Aug-09	3.3
1010	3.2	19.2	63	0.3174	22:50:55	5-Aug-09	3.4
1011	3.5	19.2	63	0.3138	22:51:55	5-Aug-09	3.4
1012	3.5	19.1	64	0.3171	22:52:55	5-Aug-09	3.4
1013	3.6	19.1	64	0.3292	22:53:55	5-Aug-09	3.4
1014	4.2	19.1	64	0.3248	22:54:55	5-Aug-09	3.4
1015	3.9	19	64	0.3035	22:55:55	5-Aug-09	3.5
1016	3.7	19	64	0.3288	22:56:55	5-Aug-09	3.5
1017	3.7	19	64	0.3101	22:57:55	5-Aug-09	3.5
1018	3.6	18.9	64	0.3223	22:58:55	5-Aug-09	3.5
1019	3.1	18.9	64	0.3347	22:59:55	5-Aug-09	3.5
1020	3.4	18.8	64	0.3267	23:00:55	5-Aug-09	3.5
1021	3.5	18.8	65	0.3047	23:01:55	5-Aug-09	3.5
1022	3.6	18.8	65	0.3152	23:02:55	5-Aug-09	3.5
1023	3.8	18.7	65	0.3236	23:03:55	5-Aug-09	3.6
1024	3.8	18.7	65	0.314	23:04:55	5-Aug-09	3.6
1025	3	18.7	65	0.3104	23:05:55	5-Aug-09	3.6
1026	3.6	18.6	65	0.2926	23:06:55	5-Aug-09	3.6
1027	2.9	18.6	65	0.3017	23:07:55	5-Aug-09	3.6
1028	3.7	18.5	65	0.2984	23:08:55	5-Aug-09	3.6
1029	3.1	18.5	65	0.2984	23:09:55	5-Aug-09	3.5
1030	3.5	18.5	65	0.298	23:10:55	5-Aug-09	3.5
1031	3.8	18.5	65	0.303	23:11:55	5-Aug-09	3.5
1032	4.3	18.4	66	0.2866	23:12:55	5-Aug-09	3.5
1033	3.8	18.4	66	0.2846	23:13:55	5-Aug-09	3.5
1034	4.1	18.3	66	0.2625	23:14:55	5-Aug-09	3.6
1035	3.8	18.3	66	0.273	23:15:55	5-Aug-09	3.6
1036	4	18.3	66	0.3008	23:16:55	5-Aug-09	3.6
1037	4.1	18.2	66	0.2738	23:17:55	5-Aug-09	3.7
1038	3.8	18.2	67	0.2636	23:18:55	5-Aug-09	3.7
1039	3.6	18.2	67	0.2663	23:19:55	5-Aug-09	3.7
1040	3.7	18.1	67	0.265	23:20:55	5-Aug-09	3.7
1041	3.6	18.1	67	0.273	23:21:55	5-Aug-09	3.7

Appendix I
Ambient Air Dust Monitoring Results - SEAD-12 Removal Action

Seneca Army Depot Activity
Romulus, NY

DataRam 4 Dust Monitor, Serial Number D454

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)

DataRam 4 Dust Monitor, Serial Number D464

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
1042	3.8	18.1	67	0.2748	23:22:55	5-Aug-09	3.7
1043	3.8	18.1	67	0.2665	23:23:55	5-Aug-09	3.8
1044	4.5	18	67	0.2669	23:24:55	5-Aug-09	3.8
1045	3.9	18	68	0.2814	23:25:55	5-Aug-09	3.9
1046	4.2	18	68	0.2864	23:26:55	5-Aug-09	3.9
1047	4.6	18	68	0.2616	23:27:55	5-Aug-09	4.0
1048	4.1	17.9	68	0.2516	23:28:55	5-Aug-09	4.0
1049	3.6	17.9	68	0.2563	23:29:55	5-Aug-09	4.0
1050	4.2	17.8	68	0.2427	23:30:55	5-Aug-09	4.0
1051	4.1	17.8	68	0.2435	23:31:55	5-Aug-09	4.0
1052	3.9	17.8	68	0.2514	23:32:55	5-Aug-09	4.0
1053	4.5	17.8	69	0.2603	23:33:55	5-Aug-09	4.0
1054	4.5	17.7	69	0.2667	23:34:55	5-Aug-09	4.0
1055	4.4	17.7	69	0.2631	23:35:55	5-Aug-09	4.1
1056	4.9	17.7	69	0.2481	23:36:55	5-Aug-09	4.2
1057	4.1	17.7	69	0.2501	23:37:55	5-Aug-09	4.2
1058	4.5	17.6	69	0.2543	23:38:55	5-Aug-09	4.2
1059	4.7	17.6	70	0.2608	23:39:55	5-Aug-09	4.3
1060	4.4	17.6	70	0.2503	23:40:55	5-Aug-09	4.3
1061	4.7	17.6	70	0.2335	23:41:55	5-Aug-09	4.3
1062	4.7	17.6	70	0.2348	23:42:55	5-Aug-09	4.4
1063	4.9	17.6	70	0.2245	23:43:55	5-Aug-09	4.4
1064	5	17.5	70	0.2256	23:44:55	5-Aug-09	4.4
1065	4.8	17.5	70	0.2239	23:45:55	5-Aug-09	4.5
1066	4.9	17.5	70	0.2262	23:46:55	5-Aug-09	4.6
1067	4.8	17.5	71	0.2164	23:47:55	5-Aug-09	4.6
1068	4.6	17.5	71	0.2186	23:48:55	5-Aug-09	4.7
1069	4.3	17.4	71	0.2234	23:49:55	5-Aug-09	4.6
1070	5.3	17.4	71	0.2201	23:50:55	5-Aug-09	4.7
1071	5.5	17.4	71	0.2119	23:51:55	5-Aug-09	4.8
1072	5.2	17.4	71	0.214	23:52:55	5-Aug-09	4.8
1073	5.1	17.4	71	0.2188	23:53:55	5-Aug-09	4.8
1074	5.1	17.3	71	0.2082	23:54:55	5-Aug-09	4.9
1075	5.1	17.3	72	0.1953	23:55:55	5-Aug-09	4.9
1076	5.6	17.3	72	0.1862	23:56:55	5-Aug-09	5.0
1077	6	17.3	72	0.207	23:57:55	5-Aug-09	5.1
1078	5.9	17.3	72	0.1841	23:58:55	5-Aug-09	5.1
1079	5.4	17.3	72	0.1807	23:59:55	5-Aug-09	5.2
1080	6	17.3	72	0.1802	0:00:55	6-Aug-09	5.2
1081	5.8	17.2	72	0.1756	0:01:55	6-Aug-09	5.3
1082	6.3	17.2	73	0.1611	0:02:55	6-Aug-09	5.4
1083	5.8	17.2	73	0.1622	0:03:55	6-Aug-09	5.4
1084	6.2	17.2	73	0.1669	0:04:55	6-Aug-09	5.5
1085	6.5	17.2	73	0.1526	0:05:55	6-Aug-09	5.7
1086	5.7	17.2	73	0.1629	0:06:55	6-Aug-09	5.7
1087	6.1	17.2	73	0.1501	0:07:55	6-Aug-09	5.7
1088	5.8	17.2	74	0.1525	0:08:55	6-Aug-09	5.8
1089	5.9	17.2	74	0.1569	0:09:55	6-Aug-09	5.8
1090	5.8	17.2	74	0.1503	0:10:55	6-Aug-09	5.9
1091	5.7	17.2	74	0.1484	0:11:55	6-Aug-09	5.9
1092	6.1	17.2	74	0.1458	0:12:55	6-Aug-09	5.9
1093	5.9	17.2	74	0.1559	0:13:55	6-Aug-09	5.9
1094	5.2	17.2	74	0.1616	0:14:55	6-Aug-09	5.9
1095	5.6	17.2	74	0.1535	0:15:55	6-Aug-09	5.9
1096	5.8	17.2	74	0.1527	0:16:55	6-Aug-09	5.9
1097	6.2	17.2	75	0.153	0:17:55	6-Aug-09	5.9
1098	6	17.2	75	0.152	0:18:55	6-Aug-09	5.9
1099	5.9	17.2	75	0.1604	0:19:55	6-Aug-09	5.9
1100	5.9	17.2	75	0.1598	0:20:55	6-Aug-09	5.9
1101	6.2	17.2	75	0.1519	0:21:55	6-Aug-09	5.9
1102	6	17.2	75	0.1557	0:22:55	6-Aug-09	5.9
1103	6.2	17.2	75	0.1511	0:23:55	6-Aug-09	5.9
1104	6.1	17.2	75	0.1517	0:24:55	6-Aug-09	5.9
1105	5.8	17.2	75	0.1498	0:25:55	6-Aug-09	5.9
1106	6	17.2	75	0.1471	0:26:55	6-Aug-09	5.9
1107	5.7	17.1	75	0.1477	0:27:55	6-Aug-09	5.9
1108	6.3	17.2	75	0.1575	0:28:55	6-Aug-09	5.9
1109	6.4	17.2	76	0.1546	0:29:55	6-Aug-09	6.0
1110	5.5	17.1	76	0.1629	0:30:55	6-Aug-09	6.0
1111	5.7	17.1	75	0.1643	0:31:55	6-Aug-09	6.0
1112	5.9	17.1	76	0.1479	0:32:55	6-Aug-09	6.0
1113	5.7	17.1	76	0.1507	0:33:55	6-Aug-09	6.0
1114	5.7	17.2	76	0.1525	0:34:55	6-Aug-09	5.9
1115	5.9	17.1	76	0.1546	0:35:55	6-Aug-09	5.9
1116	5.7	17.1	76	0.1561	0:36:55	6-Aug-09	5.9
1117	5.4	17.1	76	0.1656	0:37:55	6-Aug-09	5.9
1118	5.4	17.1	76	0.162	0:38:55	6-Aug-09	5.8
1119	5.4	17.1	76	0.1577	0:39:55	6-Aug-09	5.8
1120	6.7	17.1	76	0.1421	0:40:55	6-Aug-09	5.8
1121	6.2	17.1	76	0.142	0:41:55	6-Aug-09	5.9
1122	6.2	17.1	76	0.1464	0:42:55	6-Aug-09	5.9
1123	6	17.1	76	0.1538	0:43:55	6-Aug-09	5.9
1124	5.7	17.1	76	0.16	0:44:55	6-Aug-09	5.8
1125	5.9	17.1	76	0.1562	0:45:55	6-Aug-09	5.8
1126	6.3	17.1	76	0.1546	0:46:55	6-Aug-09	5.9
1127	6.1	17.1	76	0.1524	0:47:55	6-Aug-09	5.9
1128	5.9	17.1	76	0.1568	0:48:55	6-Aug-09	5.9
1129	6.9	17.1	76	0.1476	0:49:55	6-Aug-09	6.0
1130	6.1	17.1	76	0.1567	0:50:55	6-Aug-09	6.0
1131	6.5	17	77	0.1452	0:51:55	6-Aug-09	6.0
1132	6.1	17	76	0.1385	0:52:55	6-Aug-09	6.1
1133	6.3	17	77	0.1343	0:53:55	6-Aug-09	6.1
1134	6	17	77	0.1415	0:54:55	6-Aug-09	6.1
1135	5.8	17	77	0.1456	0:55:55	6-Aug-09	6.2
1136	6.3	17	77	0.1419	0:56:55	6-Aug-09	6.1
1137	6.5	17	77	0.1364	0:57:55	6-Aug-09	6.2
1138	6.3	17	77	0.1425	0:58:55	6-Aug-09	6.2
1139	6.2	17	77	0.1338	0:59:55	6-Aug-09	6.2
1140	6.2	17	77	0.1347	1:00:55	6-Aug-09	6.2
1141	6.7	17	77	0.1253	1:01:55	6-Aug-09	6.3

Appendix I
Ambient Air Dust Monitoring Results - SEAD-12 Removal Action

Seneca Army Depot Activity
Romulus, NY

DataRam 4 Dust Monitor, Serial Number D454

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^oC)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)

DataRam 4 Dust Monitor, Serial Number D464

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^oC)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
1142	6.5	17	77	0.1302	1:02:55	6-Aug-09	6.3
1143	6.5	17	77	0.1304	1:03:55	6-Aug-09	6.3
1144	6.6	16.9	77	0.1267	1:04:55	6-Aug-09	6.3
1145	6	17	77	0.1345	1:05:55	6-Aug-09	6.3
1146	7.3	17	77	0.1239	1:06:55	6-Aug-09	6.4
1147	6.3	17	77	0.1355	1:07:55	6-Aug-09	6.4
1148	6.2	17	77	0.1288	1:08:55	6-Aug-09	6.4
1149	6.3	16.9	78	0.1325	1:09:55	6-Aug-09	6.4
1150	5.9	16.9	78	0.1338	1:10:55	6-Aug-09	6.4
1151	5.9	16.9	78	0.1394	1:11:55	6-Aug-09	6.4
1152	6.2	16.9	78	0.1207	1:12:55	6-Aug-09	6.4
1153	6.3	16.9	78	0.1335	1:13:55	6-Aug-09	6.3
1154	6	16.9	78	0.1362	1:14:55	6-Aug-09	6.3
1155	6.7	16.9	78	0.1256	1:15:55	6-Aug-09	6.4
1156	6.4	16.9	78	0.1299	1:16:55	6-Aug-09	6.4
1157	6.3	16.9	78	0.1282	1:17:55	6-Aug-09	6.3
1158	6.2	16.9	78	0.1345	1:18:55	6-Aug-09	6.3
1159	6.6	16.9	78	0.1266	1:19:55	6-Aug-09	6.3
1160	6.4	16.9	78	0.1321	1:20:55	6-Aug-09	6.3
1161	6.8	16.8	78	0.1319	1:21:55	6-Aug-09	6.4
1162	6.5	16.8	78	0.1342	1:22:55	6-Aug-09	6.3
1163	5.6	16.8	78	0.1408	1:23:55	6-Aug-09	6.3
1164	6.3	16.8	78	0.1303	1:24:55	6-Aug-09	6.3
1165	6.3	16.8	78	0.1264	1:25:55	6-Aug-09	6.3
1166	6.2	16.8	78	0.1345	1:26:55	6-Aug-09	6.3
1167	6.1	16.8	78	0.1333	1:27:55	6-Aug-09	6.3
1168	5.9	16.8	78	0.1431	1:28:55	6-Aug-09	6.3
1169	5.9	16.8	78	0.1369	1:29:55	6-Aug-09	6.3
1170	6.5	16.7	78	0.1251	1:30:55	6-Aug-09	6.3
1171	6.2	16.8	78	0.136	1:31:55	6-Aug-09	6.3
1172	5.9	16.7	78	0.1407	1:32:55	6-Aug-09	6.2
1173	6.1	16.8	78	0.1391	1:33:55	6-Aug-09	6.2
1174	6.2	16.7	79	0.129	1:34:55	6-Aug-09	6.2
1175	6.6	16.7	78	0.1262	1:35:55	6-Aug-09	6.2
1176	5.7	16.7	78	0.1386	1:36:55	6-Aug-09	6.2
1177	6.3	16.7	79	0.1237	1:37:55	6-Aug-09	6.1
1178	6.4	16.7	79	0.1236	1:38:55	6-Aug-09	6.1
1179	6.2	16.7	79	0.1392	1:39:55	6-Aug-09	6.2
1180	6.7	16.7	79	0.1263	1:40:55	6-Aug-09	6.2
1181	6.5	16.7	79	0.1341	1:41:55	6-Aug-09	6.2
1182	6.1	16.7	79	0.1384	1:42:55	6-Aug-09	6.2
1183	6.2	16.7	79	0.1352	1:43:55	6-Aug-09	6.2
1184	6.3	16.7	79	0.133	1:44:55	6-Aug-09	6.2
1185	7	16.7	79	0.1235	1:45:55	6-Aug-09	6.3
1186	6.6	16.7	79	0.129	1:46:55	6-Aug-09	6.3
1187	6.2	16.7	79	0.1303	1:47:55	6-Aug-09	6.3
1188	6	16.6	79	0.1356	1:48:55	6-Aug-09	6.3
1189	5.8	16.6	79	0.1441	1:49:55	6-Aug-09	6.3
1190	6.3	16.6	79	0.1317	1:50:55	6-Aug-09	6.3
1191	6.8	16.6	79	0.1227	1:51:55	6-Aug-09	6.3
1192	6.6	16.6	79	0.1236	1:52:55	6-Aug-09	6.4
1193	6.4	16.6	79	0.1279	1:53:55	6-Aug-09	6.4
1194	6.5	16.6	79	0.1302	1:54:55	6-Aug-09	6.4
1195	6.8	16.6	79	0.128	1:55:55	6-Aug-09	6.4
1196	6.7	16.6	79	0.1299	1:56:55	6-Aug-09	6.4
1197	6.5	16.6	79	0.1309	1:57:55	6-Aug-09	6.4
1198	6.5	16.6	79	0.13	1:58:55	6-Aug-09	6.5
1199	7.2	16.6	79	0.1174	1:59:55	6-Aug-09	6.5
1200	6.6	16.5	79	0.1258	2:00:55	6-Aug-09	6.5
1201	7.2	16.5	79	0.1182	2:01:55	6-Aug-09	6.5
1202	6.8	16.5	79	0.1212	2:02:55	6-Aug-09	6.6
1203	6.9	16.5	79	0.1174	2:03:55	6-Aug-09	6.6
1204	6.7	16.5	80	0.1103	2:04:55	6-Aug-09	6.6
1205	6.9	16.5	79	0.1114	2:05:55	6-Aug-09	6.7
1206	7.6	16.5	79	0.1123	2:06:55	6-Aug-09	6.8
1207	7.2	16.5	79	0.1205	2:07:55	6-Aug-09	6.8
1208	7.4	16.5	79	0.1145	2:08:55	6-Aug-09	6.9
1209	7.6	16.5	80	0.1122	2:09:55	6-Aug-09	6.9
1210	7	16.5	80	0.1237	2:10:55	6-Aug-09	7.0
1211	7	16.5	80	0.1213	2:11:55	6-Aug-09	7.0
1212	7.5	16.4	80	0.1076	2:12:55	6-Aug-09	7.0
1213	7.6	16.5	80	0.1185	2:13:55	6-Aug-09	7.1
1214	7.8	16.5	80	0.1132	2:14:55	6-Aug-09	7.2
1215	7.5	16.4	80	0.1183	2:15:55	6-Aug-09	7.2
1216	7.3	16.5	80	0.1192	2:16:55	6-Aug-09	7.3
1217	7.2	16.4	80	0.1162	2:17:55	6-Aug-09	7.3
1218	7.4	16.4	80	0.1167	2:18:55	6-Aug-09	7.3
1219	8.2	16.4	80	0.1174	2:19:55	6-Aug-09	7.4
1220	7.3	16.4	80	0.118	2:20:55	6-Aug-09	7.4
1221	7	16.4	80	0.1188	2:21:55	6-Aug-09	7.4
1222	8	16.4	80	0.1129	2:22:55	6-Aug-09	7.4
1223	8	16.4	80	0.1144	2:23:55	6-Aug-09	7.5
1224	7.7	16.4	80	0.1139	2:24:55	6-Aug-09	7.5
1225	7.8	16.4	80	0.1064	2:25:55	6-Aug-09	7.5
1226	8.1	16.4	80	0.1139	2:26:55	6-Aug-09	7.6
1227	7.9	16.3	80	0.1074	2:27:55	6-Aug-09	7.6
1228	7.3	16.4	80	0.1139	2:28:55	6-Aug-09	7.6
1229	7.2	16.4	80	0.1113	2:29:55	6-Aug-09	7.6
1230	8	16.3	80	0.1086	2:30:55	6-Aug-09	7.6
1231	8	16.3	80	0.1087	2:31:55	6-Aug-09	7.7
1232	7.5	16.3	80	0.1152	2:32:55	6-Aug-09	7.7
1233	7.5	16.3	80	0.1244	2:33:55	6-Aug-09	7.7
1234	7.7	16.3	80	0.1134	2:34:55	6-Aug-09	7.7
1235	7.2	16.3	80	0.1172	2:35:55	6-Aug-09	7.6
1236	7.7	16.3	80	0.1113	2:36:55	6-Aug-09	7.7
1237	7.8	16.3	80	0.1177	2:37:55	6-Aug-09	7.7
1238	7.5	16.3	80	0.1189	2:38:55	6-Aug-09	7.7
1239	8.2	16.3	80	0.1217	2:39:55	6-Aug-09	7.7
1240	7.8	16.2	80	0.1129	2:40:55	6-Aug-09	7.7
1241	7.3	16.3	80	0.1303	2:41:55	6-Aug-09	7.7

Appendix I
Ambient Air Dust Monitoring Results - SEAD-12 Removal Action

Seneca Army Depot Activity
Romulus, NY

DataRam 4 Dust Monitor, Serial Number D454

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)

DataRam 4 Dust Monitor, Serial Number D464

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
1242	8.4	16.2	80	0.1285	2:42:55	6-Aug-09	7.7
1243	7.6	16.2	80	0.1256	2:43:55	6-Aug-09	7.7
1244	7.5	16.2	80	0.123	2:44:55	6-Aug-09	7.7
1245	7.7	16.2	80	0.1241	2:45:55	6-Aug-09	7.7
1246	8	16.2	80	0.1325	2:46:55	6-Aug-09	7.7
1247	7.3	16.2	80	0.1251	2:47:55	6-Aug-09	7.7
1248	7.8	16.2	80	0.119	2:48:55	6-Aug-09	7.7
1249	7.8	16.2	80	0.1214	2:49:55	6-Aug-09	7.7
1250	7.5	16.2	80	0.1277	2:50:55	6-Aug-09	7.7
1251	7.8	16.1	80	0.1205	2:51:55	6-Aug-09	7.7
1252	8	16.2	80	0.1197	2:52:55	6-Aug-09	7.8
1253	7.6	16.2	80	0.1187	2:53:55	6-Aug-09	7.7
1254	7.4	16.1	80	0.1244	2:54:55	6-Aug-09	7.7
1255	7.6	16.1	80	0.1238	2:55:55	6-Aug-09	7.7
1256	7.8	16.1	80	0.1115	2:56:55	6-Aug-09	7.7
1257	8.3	16.1	81	0.1176	2:57:55	6-Aug-09	7.8
1258	7.1	16.1	81	0.1253	2:58:55	6-Aug-09	7.7
1259	7.5	16.1	80	0.1153	2:59:55	6-Aug-09	7.7
1260	7.5	16.1	80	0.1193	3:00:55	6-Aug-09	7.7
1261	7.7	16.1	80	0.1115	3:01:55	6-Aug-09	7.7
1262	8.3	16.1	80	0.1189	3:02:55	6-Aug-09	7.7
1263	7.5	16.1	80	0.1183	3:03:55	6-Aug-09	7.7
1264	7.8	16	80	0.1173	3:04:55	6-Aug-09	7.7
1265	7.9	16	81	0.1154	3:05:55	6-Aug-09	7.7
1266	8.4	16	80	0.12	3:06:55	6-Aug-09	7.8
1267	8.1	16	81	0.1088	3:07:55	6-Aug-09	7.8
1268	7.5	16	81	0.1171	3:08:55	6-Aug-09	7.8
1269	7.6	16	81	0.1023	3:09:55	6-Aug-09	7.8
1270	8.1	16	81	0.1126	3:10:55	6-Aug-09	7.8
1271	8.4	16	81	0.1139	3:11:55	6-Aug-09	7.8
1272	8.2	16	81	0.1149	3:12:55	6-Aug-09	7.9
1273	8.3	15.9	81	0.1144	3:13:55	6-Aug-09	7.9
1274	8.8	16	81	0.1053	3:14:55	6-Aug-09	8.0
1275	8.1	16	81	0.1051	3:15:55	6-Aug-09	8.0
1276	8.4	16	81	0.0994	3:16:55	6-Aug-09	8.1
1277	8.4	16	81	0.1046	3:17:55	6-Aug-09	8.1
1278	8.7	16	81	0.1137	3:18:55	6-Aug-09	8.1
1279	8.1	16	81	0.1067	3:19:55	6-Aug-09	8.2
1280	7.9	15.9	81	0.0981	3:20:55	6-Aug-09	8.2
1281	9.4	15.9	81	0.102	3:21:55	6-Aug-09	8.3
1282	9.2	15.9	81	0.1021	3:22:55	6-Aug-09	8.3
1283	9.3	15.9	81	0.101	3:23:55	6-Aug-09	8.4
1284	9.7	15.9	81	0.0942	3:24:55	6-Aug-09	8.5
1285	8.8	15.9	81	0.0994	3:25:55	6-Aug-09	8.6
1286	8.6	15.9	81	0.098	3:26:55	6-Aug-09	8.6
1287	8.5	15.9	81	0.1007	3:27:55	6-Aug-09	8.7
1288	9	15.9	81	0.1034	3:28:55	6-Aug-09	8.7
1289	8.5	15.9	81	0.1029	3:29:55	6-Aug-09	8.7
1290	9.3	15.9	81	0.0921	3:30:55	6-Aug-09	8.7
1291	8.6	15.9	81	0.1009	3:31:55	6-Aug-09	8.8
1292	8.8	15.9	81	0.089	3:32:55	6-Aug-09	8.8
1293	9.6	15.8	82	0.0904	3:33:55	6-Aug-09	8.9
1294	9.4	15.9	81	0.08	3:34:55	6-Aug-09	8.9
1295	9.2	15.8	82	0.0921	3:35:55	6-Aug-09	9.0
1296	9.2	15.8	82	0.0812	3:36:55	6-Aug-09	9.1
1297	8.7	15.8	82	0.0869	3:37:55	6-Aug-09	9.0
1298	9.3	15.8	82	0.0995	3:38:55	6-Aug-09	9.0
1299	8.3	15.8	82	0.0938	3:39:55	6-Aug-09	9.0
1300	9.3	15.8	82	0.0952	3:40:55	6-Aug-09	8.9
1301	8.9	15.8	82	0.0944	3:41:55	6-Aug-09	9.0
1302	8.8	15.8	82	0.0881	3:42:55	6-Aug-09	9.0
1303	9	15.8	82	0.0879	3:43:55	6-Aug-09	9.0
1304	9.4	15.8	82	0.094	3:44:55	6-Aug-09	9.0
1305	9	15.8	82	0.0944	3:45:55	6-Aug-09	9.1
1306	8.6	15.8	82	0.1024	3:46:55	6-Aug-09	9.0
1307	7.7	15.8	82	0.1008	3:47:55	6-Aug-09	9.0
1308	8.4	15.7	82	0.094	3:48:55	6-Aug-09	8.9
1309	9.2	15.7	82	0.102	3:49:55	6-Aug-09	8.9
1310	8.4	15.7	82	0.1026	3:50:55	6-Aug-09	8.8
1311	8.9	15.7	82	0.0985	3:51:55	6-Aug-09	8.8
1312	8.6	15.7	82	0.1077	3:52:55	6-Aug-09	8.8
1313	8.9	15.7	82	0.0985	3:53:55	6-Aug-09	8.8
1314	8.5	15.7	82	0.0988	3:54:55	6-Aug-09	8.7
1315	8.9	15.7	82	0.1021	3:55:55	6-Aug-09	8.8
1316	8.2	15.7	82	0.0954	3:56:55	6-Aug-09	8.7
1317	8.4	15.7	82	0.0891	3:57:55	6-Aug-09	8.7
1318	8.3	15.7	82	0.1066	3:58:55	6-Aug-09	8.7
1319	8.6	15.7	82	0.1031	3:59:55	6-Aug-09	8.6
1320	8.2	15.7	82	0.1091	4:00:55	6-Aug-09	8.6
1321	8.4	15.7	82	0.1099	4:01:55	6-Aug-09	8.5
1322	8	15.7	82	0.1114	4:02:55	6-Aug-09	8.5
1323	8.1	15.7	82	0.1073	4:03:55	6-Aug-09	8.5
1324	8	15.6	82	0.1092	4:04:55	6-Aug-09	8.5
1325	8.4	15.6	82	0.1065	4:05:55	6-Aug-09	8.4
1326	8.6	15.6	82	0.1137	4:06:55	6-Aug-09	8.4
1327	8.4	15.6	82	0.11	4:07:55	6-Aug-09	8.4
1328	8.2	15.6	82	0.1139	4:08:55	6-Aug-09	8.4
1329	8	15.6	82	0.1069	4:09:55	6-Aug-09	8.3
1330	8.7	15.6	82	0.1056	4:10:55	6-Aug-09	8.3
1331	8.7	15.6	82	0.1109	4:11:55	6-Aug-09	8.3
1332	8.8	15.6	82	0.1189	4:12:55	6-Aug-09	8.4
1333	8.4	15.6	82	0.1127	4:13:55	6-Aug-09	8.4
1334	8.3	15.6	82	0.1111	4:14:55	6-Aug-09	8.4
1335	8.7	15.6	82	0.1056	4:15:55	6-Aug-09	8.4
1336	8.7	15.6	82	0.0995	4:16:55	6-Aug-09	8.4
1337	9	15.5	82	0.1062	4:17:55	6-Aug-09	8.4
1338	8.6	15.5	82	0.1028	4:18:55	6-Aug-09	8.5
1339	9	15.6	82	0.1012	4:19:55	6-Aug-09	8.5
1340	8.9	15.5	82	0.0786	4:20:55	6-Aug-09	8.6
1341	9.6	15.5	82	0.0872	4:21:55	6-Aug-09	8.7

Appendix I
Ambient Air Dust Monitoring Results - SEAD-12 Removal Action

Seneca Army Depot Activity
Romulus, NY

DataRam 4 Dust Monitor, Serial Number D454

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)

DataRam 4 Dust Monitor, Serial Number D464

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
1342	9.2	15.5	82	0.0869	4:22:55	6-Aug-09	8.7
1343	8.5	15.5	82	0.0907	4:23:55	6-Aug-09	8.7
1344	9.2	15.5	82	0.0806	4:24:55	6-Aug-09	8.8
1345	9	15.5	82	0.0887	4:25:55	6-Aug-09	8.8
1346	9.6	15.5	82	0.0852	4:26:55	6-Aug-09	8.9
1347	8.8	15.5	82	0.089	4:27:55	6-Aug-09	8.9
1348	9.3	15.5	82	0.0829	4:28:55	6-Aug-09	8.9
1349	9.4	15.5	82	0.0786	4:29:55	6-Aug-09	9.0
1350	9.4	15.5	82	0.0808	4:30:55	6-Aug-09	9.1
1351	8.6	15.5	83	0.0825	4:31:55	6-Aug-09	9.1
1352	9.6	15.5	83	0.083	4:32:55	6-Aug-09	9.1
1353	9.6	15.4	82	0.0819	4:33:55	6-Aug-09	9.1
1354	10.1	15.5	83	0.0809	4:34:55	6-Aug-09	9.2
1355	9.8	15.4	83	0.0791	4:35:55	6-Aug-09	9.3
1356	9.2	15.5	83	0.0848	4:36:55	6-Aug-09	9.3
1357	9.9	15.4	83	0.0888	4:37:55	6-Aug-09	9.3
1358	8.8	15.4	83	0.0813	4:38:55	6-Aug-09	9.3
1359	8.9	15.4	83	0.0757	4:39:55	6-Aug-09	9.3
1360	8.8	15.4	83	0.0858	4:40:55	6-Aug-09	9.3
1361	8.9	15.4	83	0.0747	4:41:55	6-Aug-09	9.3
1362	9.6	15.4	83	0.0721	4:42:55	6-Aug-09	9.3
1363	9.7	15.4	83	0.0783	4:43:55	6-Aug-09	9.4
1364	8.6	15.4	83	0.0769	4:44:55	6-Aug-09	9.3
1365	9.5	15.4	83	0.078	4:45:55	6-Aug-09	9.3
1366	9.3	15.4	83	0.0837	4:46:55	6-Aug-09	9.3
1367	9.8	15.4	83	0.0841	4:47:55	6-Aug-09	9.4
1368	9.2	15.4	83	0.0776	4:48:55	6-Aug-09	9.4
1369	9.3	15.4	83	0.0781	4:49:55	6-Aug-09	9.3
1370	8.7	15.4	83	0.0736	4:50:55	6-Aug-09	9.3
1371	9.2	15.4	83	0.0812	4:51:55	6-Aug-09	9.2
1372	8.4	15.4	83	0.0824	4:52:55	6-Aug-09	9.2
1373	9	15.4	83	0.082	4:53:55	6-Aug-09	9.1
1374	8.9	15.4	83	0.0848	4:54:55	6-Aug-09	9.1
1375	9.1	15.4	83	0.0781	4:55:55	6-Aug-09	9.1
1376	8.4	15.4	83	0.0804	4:56:55	6-Aug-09	9.1
1377	8.8	15.4	83	0.0768	4:57:55	6-Aug-09	9.1
1378	8.9	15.3	83	0.0828	4:58:55	6-Aug-09	9.1
1379	9.2	15.4	83	0.0831	4:59:55	6-Aug-09	9.0
1380	9.6	15.3	83	0.0911	5:00:55	6-Aug-09	9.1
1381	9.6	15.3	83	0.0883	5:01:55	6-Aug-09	9.1
1382	8.7	15.3	83	0.0836	5:02:55	6-Aug-09	9.1
1383	8.9	15.3	83	0.0744	5:03:55	6-Aug-09	9.0
1384	8.9	15.3	83	0.0782	5:04:55	6-Aug-09	9.0
1385	8.9	15.3	83	0.0663	5:05:55	6-Aug-09	9.0
1386	9.4	15.3	83	0.0786	5:06:55	6-Aug-09	9.0
1387	9.6	15.3	83	0.0739	5:07:55	6-Aug-09	9.0
1388	9.5	15.3	83	0.0775	5:08:55	6-Aug-09	9.1
1389	9.8	15.3	83	0.0812	5:09:55	6-Aug-09	9.1
1390	9.9	15.3	83	0.0824	5:10:55	6-Aug-09	9.2
1391	9.2	15.3	83	0.0841	5:11:55	6-Aug-09	9.2
1392	9.3	15.3	83	0.071	5:12:55	6-Aug-09	9.3
1393	9.7	15.3	83	0.0856	5:13:55	6-Aug-09	9.3
1394	9.2	15.3	83	0.0801	5:14:55	6-Aug-09	9.3
1395	9.8	15.3	84	0.0823	5:15:55	6-Aug-09	9.4
1396	10.6	15.2	84	0.0807	5:16:55	6-Aug-09	9.4
1397	10.2	15.2	84	0.0814	5:17:55	6-Aug-09	9.5
1398	9.5	15.2	83	0.0751	5:18:55	6-Aug-09	9.5
1399	10.2	15.2	84	0.069	5:19:55	6-Aug-09	9.6
1400	10.3	15.2	83	0.0804	5:20:55	6-Aug-09	9.7
1401	9.8	15.2	84	0.0712	5:21:55	6-Aug-09	9.8
1402	10.4	15.2	84	0.0722	5:22:55	6-Aug-09	9.8
1403	10.5	15.2	84	0.074	5:23:55	6-Aug-09	9.9
1404	10.4	15.2	84	0.0725	5:24:55	6-Aug-09	9.9
1405	10	15.2	84	0.0648	5:25:55	6-Aug-09	9.9
1406	10.9	15.2	84	0.0729	5:26:55	6-Aug-09	10.0
1407	12	15.2	84	0.0868	5:27:55	6-Aug-09	10.2
1408	11.7	15.2	84	0.0797	5:28:55	6-Aug-09	10.3
1409	10.7	15.2	84	0.0617	5:29:55	6-Aug-09	10.4
1410	10.5	15.2	84	0.0561	5:30:55	6-Aug-09	10.5
1411	11.3	15.2	84	0.0562	5:31:55	6-Aug-09	10.6
1412	11.4	15.2	84	0.0563	5:32:55	6-Aug-09	10.6
1413	11.6	15.2	84	0.0552	5:33:55	6-Aug-09	10.7
1414	12.1	15.2	84	0.0648	5:34:55	6-Aug-09	10.9
1415	11.9	15.2	84	0.0635	5:35:55	6-Aug-09	11.0
1416	11.3	15.2	84	0.0557	5:36:55	6-Aug-09	11.0
1417	12	15.2	84	0.0702	5:37:55	6-Aug-09	11.2
1418	12.5	15.2	84	0.0709	5:38:55	6-Aug-09	11.3
1419	11.5	15.2	84	0.0531	5:39:55	6-Aug-09	11.4
1420	11	15.2	84	0.0474	5:40:55	6-Aug-09	11.4
1421	11	15.2	84	0.0549	5:41:55	6-Aug-09	11.5
1422	10.9	15.2	84	0.0504	5:42:55	6-Aug-09	11.5
1423	11.3	15.2	84	0.0558	5:43:55	6-Aug-09	11.4
1424	10.8	15.2	84	0.0487	5:44:55	6-Aug-09	11.4
1425	10.9	15.2	84	0.0408	5:45:55	6-Aug-09	11.4
1426	11.7	15.2	85	0.0675	5:46:55	6-Aug-09	11.5
1427	11.1	15.2	84	0.0466	5:47:55	6-Aug-09	11.4
1428	11.8	15.2	85	0.0666	5:48:55	6-Aug-09	11.5
1429	11.3	15.2	84	0.0487	5:49:55	6-Aug-09	11.4
1430	11.4	15.2	85	0.057	5:50:55	6-Aug-09	11.4
1431	11.5	15.2	85	0.0521	5:51:55	6-Aug-09	11.4
1432	10.4	15.2	84	0.0433	5:52:55	6-Aug-09	11.3
1433	10.4	15.2	85	0.046	5:53:55	6-Aug-09	11.2
1434	10.6	15.2	85	0.0391	5:54:55	6-Aug-09	11.1
1435	9.7	15.2	85	0.038	5:55:55	6-Aug-09	11.0
1436	10.4	15.2	85	0.0574	5:56:55	6-Aug-09	11.0
1437	9.9	15.2	85	0.058	5:57:55	6-Aug-09	10.9
1438	9.7	15.2	85	0.0453	5:58:55	6-Aug-09	10.8
1439	9.3	15.2	85	0.0533	5:59:55	6-Aug-09	10.7
1440	10	15.2	85	0.055	6:00:55	6-Aug-09	10.6
1441	10.9	15.2	85	0.0677	6:01:55	6-Aug-09	10.6

Appendix I
Ambient Air Dust Monitoring Results - SEAD-12 Removal Action

Seneca Army Depot Activity
Romulus, NY

DataRam 4 Dust Monitor, Serial Number D454

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^oC)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)

DataRam 4 Dust Monitor, Serial Number D464

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^oC)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
1442	9.8	15.2	85	0.0574	6:02:55	6-Aug-09	10.5
1443	9.4	15.2	85	0.0569	6:03:55	6-Aug-09	10.4
1444	9.3	15.2	85	0.0487	6:04:55	6-Aug-09	10.3
1445	9.5	15.2	85	0.0512	6:05:55	6-Aug-09	10.1
1446	8.9	15.2	85	0.0631	6:06:55	6-Aug-09	10.0
1447	9.7	15.2	85	0.0616	6:07:55	6-Aug-09	9.9
1448	9.4	15.2	85	0.0683	6:08:55	6-Aug-09	9.8
1449	9.1	15.2	85	0.067	6:09:55	6-Aug-09	9.7
1450	10.1	15.2	85	0.0677	6:10:55	6-Aug-09	9.7
1451	9.7	15.2	85	0.0744	6:11:55	6-Aug-09	9.7
1452	9.6	15.2	85	0.074	6:12:55	6-Aug-09	9.6
1453	9.4	15.2	85	0.0771	6:13:55	6-Aug-09	9.6
1454	10.4	15.2	85	0.0645	6:14:55	6-Aug-09	9.7
1455	10.2	15.2	85	0.0759	6:15:55	6-Aug-09	9.7
1456	10.5	15.2	85	0.0845	6:16:55	6-Aug-09	9.7
1457	10.8	15.1	85	0.0826	6:17:55	6-Aug-09	9.7
1458	11.6	15.2	85	0.1051	6:18:55	6-Aug-09	9.9
1459	10.6	15.1	85	0.0868	6:19:55	6-Aug-09	9.9
1460	10.6	15.1	85	0.0746	6:20:55	6-Aug-09	10.0
1461	10.6	15.1	85	0.0864	6:21:55	6-Aug-09	10.1
1462	11.6	15.2	85	0.0849	6:22:55	6-Aug-09	10.2
1463	10.7	15.1	85	0.0666	6:23:55	6-Aug-09	10.3
1464	11	15.1	85	0.0744	6:24:55	6-Aug-09	10.4
1465	11.6	15.1	85	0.0806	6:25:55	6-Aug-09	10.6
1466	11.1	15.1	85	0.0643	6:26:55	6-Aug-09	10.6
1467	11.1	15.1	85	0.0575	6:27:55	6-Aug-09	10.7
1468	10.7	15.1	85	0.0594	6:28:55	6-Aug-09	10.8
1469	11.3	15.1	85	0.0658	6:29:55	6-Aug-09	10.9
1470	11.4	15.1	85	0.0682	6:30:55	6-Aug-09	11.0
1471	11.8	15.1	85	0.0731	6:31:55	6-Aug-09	11.1
1472	11.7	15.1	85	0.0675	6:32:55	6-Aug-09	11.1
1473	11.6	15.1	85	0.0661	6:33:55	6-Aug-09	11.2
1474	10.8	15.1	85	0.0567	6:34:55	6-Aug-09	11.1
1475	11.2	15.1	85	0.0567	6:35:55	6-Aug-09	11.2
1476	10.8	15.1	85	0.0488	6:36:55	6-Aug-09	11.2
1477	10.8	15.1	85	0.0551	6:37:55	6-Aug-09	11.2
1478	11.1	15.1	85	0.0464	6:38:55	6-Aug-09	11.2
1479	10.8	15.1	85	0.0483	6:39:55	6-Aug-09	11.2
1480	11.2	15.1	85	0.052	6:40:55	6-Aug-09	11.2
1481	11.6	15.1	85	0.0607	6:41:55	6-Aug-09	11.2
1482	10.9	15.1	85	0.0522	6:42:55	6-Aug-09	11.2
1483	11.7	15.1	85	0.0499	6:43:55	6-Aug-09	11.2
1484	11.2	15.1	85	0.0519	6:44:55	6-Aug-09	11.2
1485	11.7	15.1	85	0.0562	6:45:55	6-Aug-09	11.3
1486	11.3	15.1	85	0.0466	6:46:55	6-Aug-09	11.3
1487	11.8	15.1	85	0.0491	6:47:55	6-Aug-09	11.3
1488	12.3	15.1	86	0.0531	6:48:55	6-Aug-09	11.3
1489	13.3	15.1	85	0.0672	6:49:55	6-Aug-09	11.4
1490	13.7	15.1	85	0.0747	6:50:55	6-Aug-09	11.6
1491	13.8	15.1	86	0.0709	6:51:55	6-Aug-09	11.8
1492	14	15.1	85	0.0708	6:52:55	6-Aug-09	12.0
1493	14.1	15.1	86	0.0712	6:53:55	6-Aug-09	12.2
1494	14.6	15.1	86	0.076	6:54:55	6-Aug-09	12.4
1495	16.1	15.1	86	0.0995	6:55:55	6-Aug-09	12.7
1496	15.9	15.1	86	0.0872	6:56:55	6-Aug-09	13.0
1497	16.8	15.1	86	0.0872	6:57:55	6-Aug-09	13.3
1498	18.8	15.1	86	0.1005	6:58:55	6-Aug-09	13.8
1499	21.3	15.1	86	0.1237	6:59:55	6-Aug-09	14.4
1500	23.5	15.1	86	0.1403	7:00:55	6-Aug-09	15.2
1501	27.6	15.1	86	0.1664	7:01:55	6-Aug-09	16.2
1502	32	15.2	86	0.1906	7:02:55	6-Aug-09	17.5
1503	40.4	15.2	86	0.2457	7:03:55	6-Aug-09	19.3
1504	50.5	15.2	86	0.3113	7:04:55	6-Aug-09	21.7
1505	59.5	15.2	86	0.366	7:05:55	6-Aug-09	24.5
1506	70.3	15.2	86	0.4131	7:06:55	6-Aug-09	28.1
1507	79.6	15.2	86	0.4664	7:07:55	6-Aug-09	32.2
1508	88.9	15.3	86	0.5028	7:08:55	6-Aug-09	36.9
1509	91.1	15.3	87	0.5116	7:09:55	6-Aug-09	41.7
1510	98.4	15.3	87	0.5459	7:10:55	6-Aug-09	46.9
1511	101	15.4	87	0.553	7:11:55	6-Aug-09	52.2
1512	100.9	15.4	87	0.5313	7:12:55	6-Aug-09	57.5
1513	102.2	15.4	87	0.519	7:13:55	6-Aug-09	62.9
1514	105.9	15.5	87	0.5081	7:14:55	6-Aug-09	68.3
1515	104.8	15.5	87	0.5039	7:15:55	6-Aug-09	73.5
1516	106.2	15.5	87	0.4962	7:16:55	6-Aug-09	78.7
1517	105.8	15.6	87	0.4763	7:17:55	6-Aug-09	83.6
1518	107.1	15.6	88	0.4705	7:18:55	6-Aug-09	88.3
1519	109.8	15.6	88	0.4733	7:19:55	6-Aug-09	92.6
1520	113.6	15.7	88	0.5073	7:20:55	6-Aug-09	96.6
1521	109.6	15.7	88	0.4669	7:21:55	6-Aug-09	99.7
1522	107.2	15.8	88	0.4314	7:22:55	6-Aug-09	102.0
1523	107.5	15.8	88	0.4395	7:23:55	6-Aug-09	103.8
1524	107.5	15.9	88	0.4248	7:24:55	6-Aug-09	104.9
1525	105.5	15.9	88	0.4047	7:25:55	6-Aug-09	105.8
1526	107.1	16	88	0.4038	7:26:55	6-Aug-09	106.4
1527	106.2	16	88	0.388	7:27:55	6-Aug-09	106.7
1528	106.1	16.1	88	0.3673	7:28:55	6-Aug-09	107.0
1529	105.4	16.1	89	0.3591	7:29:55	6-Aug-09	107.2
1530	107.1	16.2	89	0.3719	7:30:55	6-Aug-09	107.3
1531	108.6	16.2	89	0.3657	7:31:55	6-Aug-09	107.5
1532	107.5	16.3	89	0.3523	7:32:55	6-Aug-09	107.6
1533	109.6	16.4	89	0.3551	7:33:55	6-Aug-09	107.8
1534	107.9	16.4	89	0.3421	7:34:55	6-Aug-09	107.9
1535	106.4	16.5	89	0.3336	7:35:55	6-Aug-09	107.7
1536	104.4	16.5	89	0.3235	7:36:55	6-Aug-09	107.1
1537	105.5	16.6	89	0.3256	7:37:55	6-Aug-09	106.8
1538	102.9	16.7	89	0.3038	7:38:55	6-Aug-09	106.6
1539	104	16.7	89	0.2949	7:39:55	6-Aug-09	106.4
1540	103	16.8	90	0.2918	7:40:55	6-Aug-09	106.1
1541	99	16.8	89	0.2698	7:41:55	6-Aug-09	105.7

Appendix I
Ambient Air Dust Monitoring Results - SEAD-12 Removal Action

Seneca Army Depot Activity
Romulus, NY

DataRam 4 Dust Monitor, Serial Number D454

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)

DataRam 4 Dust Monitor, Serial Number D464

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
1542	96.5	16.9	90	0.2572	7:42:55	6-Aug-09	105.0
1543	95.7	17	89	0.2531	7:43:55	6-Aug-09	104.4
1544	92.8	17	90	0.2409	7:44:55	6-Aug-09	103.5
1545	91.4	17.1	89	0.233	7:45:55	6-Aug-09	102.6
1546	86	17.2	90	0.2143	7:46:55	6-Aug-09	101.3
1547	79.7	17.2	90	0.1895	7:47:55	6-Aug-09	99.5
1548	74.4	17.3	90	0.1695	7:48:55	6-Aug-09	97.5
1549	67.7	17.4	90	0.1491	7:49:55	6-Aug-09	94.8
1550	58.9	17.4	90	0.1127	7:50:55	6-Aug-09	91.8
1551	53.8	17.5	90	0.094	7:51:55	6-Aug-09	88.5
1552	51.7	17.6	90	0.0822	7:52:55	6-Aug-09	85.2
1553	47.7	17.6	90	0.0688	7:53:55	6-Aug-09	81.6
1554	44.4	17.7	90	0.0508	7:54:55	6-Aug-09	77.9
1555	40.7	17.7	90	0.0358	7:55:55	6-Aug-09	74.0
1556	36.5	17.8	90	0.028	7:56:55	6-Aug-09	69.8
1557	36.2	17.8	90	0.028	7:57:55	6-Aug-09	65.9
1558	35.3	17.9	90	0.028	7:58:55	6-Aug-09	62.1
1559	32.2	18	90	0.028	7:59:55	6-Aug-09	58.1
1560	31.3	18	90	0.028	8:00:55	6-Aug-09	54.2
1561	31.5	18	90	0.028	8:01:55	6-Aug-09	50.5
1562	30	18.1	90	0.028	8:02:55	6-Aug-09	47.0
1563	30.8	18.1	90	0.028	8:03:55	6-Aug-09	43.9
1564	30.1	18.2	90	0.028	8:04:55	6-Aug-09	41.2
1565	30.7	18.2	90	0.028	8:05:55	6-Aug-09	38.9
1566	28.7	18.3	90	0.028	8:06:55	6-Aug-09	37.0
1567	27.4	18.4	91	0.028	8:07:55	6-Aug-09	35.3
1568	25.6	18.4	91	0.028	8:08:55	6-Aug-09	33.7
1569	24	18.5	90	0.028	8:09:55	6-Aug-09	32.2
1570	23.5	18.5	91	0.028	8:10:55	6-Aug-09	30.9
1571	22.8	18.5	91	0.028	8:11:55	6-Aug-09	29.8
1572	21.9	18.6	90	0.028	8:12:55	6-Aug-09	28.9
1573	20.7	18.6	91	0.028	8:13:55	6-Aug-09	27.9
1574	20.2	18.7	91	0.028	8:14:55	6-Aug-09	27.0
1575	19.2	18.7	91	0.028	8:15:55	6-Aug-09	26.2
1576	17.7	18.8	91	0.028	8:16:55	6-Aug-09	25.3
1577	16.4	18.8	91	0.028	8:17:55	6-Aug-09	24.4
1578	15	18.9	91	0.028	8:18:55	6-Aug-09	23.4
1579	14	19	91	0.028	8:19:55	6-Aug-09	22.4
1580	12.2	19	91	0.028	8:20:55	6-Aug-09	21.3
1581	10.2	19.1	91	0.028	8:21:55	6-Aug-09	20.0
1582	9.8	19.1	91	0.0282	8:22:55	6-Aug-09	18.8
1583	8.9	19.1	91	0.0307	8:23:55	6-Aug-09	17.6
1584	7.8	19.2	90	0.0444	8:24:55	6-Aug-09	16.5
1585	6.6	19.2	90	0.0704	8:25:55	6-Aug-09	15.4
1586	6.2	19.3	90	0.0843	8:26:55	6-Aug-09	14.4
1587	6	19.4	90	0.0903	8:27:55	6-Aug-09	13.3
1588	6	19.4	90	0.0897	8:28:55	6-Aug-09	12.3
1589	5.3	19.5	90	0.1118	8:29:55	6-Aug-09	11.3
1590	4.8	19.6	90	0.1288	8:30:55	6-Aug-09	10.4
1591	4.4	19.6	89	0.1434	8:31:55	6-Aug-09	9.5
1592	4.9	19.6	89	0.1254	8:32:55	6-Aug-09	8.7
1593	4.6	19.7	89	0.1374	8:33:55	6-Aug-09	7.9
1594	4.4	19.8	89	0.1447	8:34:55	6-Aug-09	7.3
1595	4.4	19.8	89	0.1448	8:35:55	6-Aug-09	6.7
1596	4.6	19.9	89	0.1517	8:36:55	6-Aug-09	6.2
1597	5.5	20	88	0.149	8:37:55	6-Aug-09	5.9
1598	5.3	20	88	0.1618	8:38:55	6-Aug-09	5.6
1599	5.1	20.1	88	0.1577	8:39:55	6-Aug-09	5.4
1600	4.8	20.1	87	0.1698	8:40:55	6-Aug-09	5.2
1601	5.5	20.2	87	0.1834	8:41:55	6-Aug-09	5.1
1602	4.8	20.2	87	0.1848	8:42:55	6-Aug-09	5.0
1603	4.7	20.3	87	0.1872	8:43:55	6-Aug-09	4.9
1604	4.6	20.3	86	0.1924	8:44:55	6-Aug-09	4.9
1605	5	20.4	86	0.1874	8:45:55	6-Aug-09	4.8
1606	4.9	20.5	86	0.1979	8:46:55	6-Aug-09	4.8
1607	4.8	20.6	86	0.212	8:47:55	6-Aug-09	4.9
1608	4.5	20.6	86	0.21	8:48:55	6-Aug-09	4.8
1609	4.6	20.7	85	0.2137	8:49:55	6-Aug-09	4.8
1610	4.5	20.7	85	0.2204	8:50:55	6-Aug-09	4.9
1611	4.6	20.8	85	0.2195	8:51:55	6-Aug-09	4.9
1612	4.6	20.9	84	0.2353	8:52:55	6-Aug-09	4.9
1613	4.4	20.9	84	0.2305	8:53:55	6-Aug-09	4.8
1614	4.7	21	84	0.2201	8:54:55	6-Aug-09	4.8
1615	5.1	21.1	83	0.2343	8:55:55	6-Aug-09	4.8
1616	4.7	21.1	83	0.2332	8:56:55	6-Aug-09	4.8
1617	4.1	21.2	83	0.2577	8:57:55	6-Aug-09	4.7
1618	4.1	21.3	83	0.2443	8:58:55	6-Aug-09	4.6
1619	3.8	21.4	82	0.2628	8:59:55	6-Aug-09	4.6
1620	4	21.5	82	0.2474	9:00:55	6-Aug-09	4.5
1621	4.5	21.5	82	0.249	9:01:55	6-Aug-09	4.5
1622	4.2	21.6	81	0.272	9:02:55	6-Aug-09	4.5
1623	4.3	21.7	81	0.2985	9:03:55	6-Aug-09	4.4
1624	4.2	21.8	81	0.2579	9:04:55	6-Aug-09	4.4
1625	3.7	21.9	81	0.2612	9:05:55	6-Aug-09	4.3
1626	3.5	22	80	0.271	9:06:55	6-Aug-09	4.3
1627	3.6	22.1	80	0.2696	9:07:55	6-Aug-09	4.2
1628	3.8	22.1	79	0.2853	9:08:55	6-Aug-09	4.2
1629	3.2	22.2	79	0.2819	9:09:55	6-Aug-09	4.1
1630	3.2	22.3	79	0.2822	9:10:55	6-Aug-09	4.0
1631	3.2	22.4	78	0.2953	9:11:55	6-Aug-09	3.9
1632	3.3	22.5	78	0.3006	9:12:55	6-Aug-09	3.8
1633	3.7	22.6	77	0.321	9:13:55	6-Aug-09	3.8
1634	3.1	22.6	77	0.3254	9:14:55	6-Aug-09	3.7
1635	3.2	22.7	77	0.3244	9:15:55	6-Aug-09	3.7
1636	3.5	22.8	77	0.3245	9:16:55	6-Aug-09	3.6
1637	3.3	22.9	76	0.3264	9:17:55	6-Aug-09	3.6
1638	3.5	23	76	0.3281	9:18:55	6-Aug-09	3.5
1639	2.4	23	76	0.324	9:19:55	6-Aug-09	3.4
1640	2.9	23.1	75	0.3224	9:20:55	6-Aug-09	3.3
1641	3	23.2	75	0.3295	9:21:55	6-Aug-09	3.3

Appendix I
Ambient Air Dust Monitoring Results - SEAD-12 Removal Action

Seneca Army Depot Activity
Romulus, NY

DataRam 4 Dust Monitor, Serial Number D454

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)

DataRam 4 Dust Monitor, Serial Number D464

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
1642	2.8	23.3	75	0.3479	9:22:55	6-Aug-09	3.2
1643	3.7	23.4	74	0.4001	9:23:55	6-Aug-09	3.2
1644	2.8	23.5	74	0.389	9:24:55	6-Aug-09	3.2
1645	2.8	23.6	74	0.3795	9:25:55	6-Aug-09	3.2
1646	2.3	23.7	73	0.3729	9:26:55	6-Aug-09	3.1
1647	2.5	23.8	73	0.3748	9:27:55	6-Aug-09	3.1
1648	2.3	23.9	72	0.3749	9:28:55	6-Aug-09	3.0
1649	3	23.9	72	0.3927	9:29:55	6-Aug-09	2.9
1650	2.3	24	72	0.374	9:30:55	6-Aug-09	2.9
1651	2.8	24.1	71	0.3909	9:31:55	6-Aug-09	2.9
1652	3	24.2	71	0.3954	9:32:55	6-Aug-09	2.8
1653	2.9	24.3	71	0.3792	9:33:55	6-Aug-09	2.8
1654	2.4	24.4	71	0.3696	9:34:55	6-Aug-09	2.7
1655	3	24.5	70	0.3722	9:35:55	6-Aug-09	2.8
1656	2.6	24.5	70	0.3673	9:36:55	6-Aug-09	2.8
1657	2.5	24.6	70	0.3608	9:37:55	6-Aug-09	2.7
1658	3	24.7	69	0.4092	9:38:55	6-Aug-09	2.7
1659	2.9	24.8	69	0.4216	9:39:55	6-Aug-09	2.7
1660	3.1	24.8	69	0.4506	9:40:55	6-Aug-09	2.7
1661	2.6	24.9	69	0.428	9:41:55	6-Aug-09	2.7
1662	2.3	25	68	0.3977	9:42:55	6-Aug-09	2.7
1663	2.3	25.1	68	0.3944	9:43:55	6-Aug-09	2.7
1664	2.6	25.2	68	0.4029	9:44:55	6-Aug-09	2.7
1665	2.3	25.2	67	0.396	9:45:55	6-Aug-09	2.7
1666	2.1	25.3	67	0.3872	9:46:55	6-Aug-09	2.7
1667	2.5	25.4	67	0.3961	9:47:55	6-Aug-09	2.6
1668	3.2	25.5	67	0.4643	9:48:55	6-Aug-09	2.6
1669	2.1	25.6	66	0.4255	9:49:55	6-Aug-09	2.6
1670	1.9	25.6	66	0.4192	9:50:55	6-Aug-09	2.6
1671	2.1	25.7	66	0.4283	9:51:55	6-Aug-09	2.5
1672	1.8	25.8	66	0.4014	9:52:55	6-Aug-09	2.5
1673	2.3	25.9	65	0.3877	9:53:55	6-Aug-09	2.4
1674	1.8	26	65	0.3698	9:54:55	6-Aug-09	2.4
1675	2	26.1	65	0.3719	9:55:55	6-Aug-09	2.3
1676	1.6	26.1	65	0.3666	9:56:55	6-Aug-09	2.2
1677	1.4	26.2	64	0.3615	9:57:55	6-Aug-09	2.1
1678	1.9	26.3	64	0.3727	9:58:55	6-Aug-09	2.1
1679	1.7	26.4	64	0.3666	9:59:55	6-Aug-09	2.1
1680	2	26.4	64	0.3721	10:00:55	6-Aug-09	2.0
1681	1.7	26.5	63	0.3675	10:01:55	6-Aug-09	2.0
1682	1.2	26.6	63	0.3593	10:02:55	6-Aug-09	2.0
1683	1.1	26.6	63	0.356	10:03:55	6-Aug-09	1.9
1684	1.9	26.7	62	0.4028	10:04:55	6-Aug-09	1.8
1685	1.6	26.8	62	0.3938	10:05:55	6-Aug-09	1.8
1686	1.5	26.9	62	0.3709	10:06:55	6-Aug-09	1.7
1687	1.1	27	61	0.3638	10:07:55	6-Aug-09	1.7
1688	0.8	27	61	0.3553	10:08:55	6-Aug-09	1.6
1689	1.7	27.1	61	0.3739	10:09:55	6-Aug-09	1.6
1690	1.4	27.1	60	0.3675	10:10:55	6-Aug-09	1.5
1691	1.3	27.2	60	0.3653	10:11:55	6-Aug-09	1.5
1692	1.5	27.2	60	0.3679	10:12:55	6-Aug-09	1.5
1693	1	27.3	60	0.3588	10:13:55	6-Aug-09	1.5
1694	0.9	27.4	59	0.3564	10:14:55	6-Aug-09	1.4
1695	1.3	27.4	59	0.3665	10:15:55	6-Aug-09	1.4
1696	1.4	27.5	59	0.3671	10:16:55	6-Aug-09	1.3
1697	1.2	27.6	58	0.3617	10:17:55	6-Aug-09	1.3
1698	1	27.6	58	0.3566	10:18:55	6-Aug-09	1.3
1699	1.1	27.7	58	0.3606	10:19:55	6-Aug-09	1.3
1700	1.4	27.7	58	0.3804	10:20:55	6-Aug-09	1.3
1701	1.1	27.8	57	0.3813	10:21:55	6-Aug-09	1.2
1702	1.9	27.8	57	0.4145	10:22:55	6-Aug-09	1.3
1703	1.8	27.9	57	0.4118	10:23:55	6-Aug-09	1.3
1704	1.3	28	57	0.3863	10:24:55	6-Aug-09	1.3
1705	1	28	56	0.3747	10:25:55	6-Aug-09	1.3
1706	1.2	28	56	0.3802	10:26:55	6-Aug-09	1.3
1707	1.3	28.1	56	0.3878	10:27:55	6-Aug-09	1.3
1708	1	28.1	56	0.3789	10:28:55	6-Aug-09	1.2
1709	1.2	28.2	55	0.3909	10:29:55	6-Aug-09	1.3
1710	1.1	28.2	55	0.3848	10:30:55	6-Aug-09	1.3
1711	0.7	28.3	55	0.3645	10:31:55	6-Aug-09	1.2
1712	1.3	28.4	54	0.3916	10:32:55	6-Aug-09	1.2
1713	1	28.4	54	0.3805	10:33:55	6-Aug-09	1.2
1714	1.5	28.5	53	0.4181	10:34:55	6-Aug-09	1.2
1715	1.2	28.5	53	0.3977	10:35:55	6-Aug-09	1.3
1716	1.6	28.5	53	0.4357	10:36:55	6-Aug-09	1.3
1717	1.1	28.6	53	0.4089	10:37:55	6-Aug-09	1.3
1718	1	28.6	53	0.4087	10:38:55	6-Aug-09	1.2
1719	1.2	28.7	52	0.3962	10:39:55	6-Aug-09	1.2
1720	1.5	28.7	52	0.3894	10:40:55	6-Aug-09	1.2
1721	1	28.8	52	0.3752	10:41:55	6-Aug-09	1.2
1722	1	28.8	52	0.369	10:42:55	6-Aug-09	1.2
1723	0.9	28.9	52	0.3691	10:43:55	6-Aug-09	1.1
1724	1.1	28.9	51	0.3746	10:44:55	6-Aug-09	1.2
1725	0.9	29	51	0.3674	10:45:55	6-Aug-09	1.1
1726	1.4	29	51	0.3872	10:46:55	6-Aug-09	1.2
1727	1.1	29.1	50	0.3764	10:47:55	6-Aug-09	1.2
1728	0.6	29.1	50	0.3577	10:48:55	6-Aug-09	1.1
1729	0.6	29.2	50	0.358	10:49:55	6-Aug-09	1.1
1730	1.2	29.2	50	0.3794	10:50:55	6-Aug-09	1.1
1731	0.9	29.2	49	0.3693	10:51:55	6-Aug-09	1.1
1732	1	29.2	49	0.3726	10:52:55	6-Aug-09	1.0
1733	0.8	29.3	49	0.3659	10:53:55	6-Aug-09	1.0
1734	1.1	29.3	49	0.3734	10:54:55	6-Aug-09	1.0
1735	1	29.4	49	0.3725	10:55:55	6-Aug-09	1.0
1736	1.2	29.4	49	0.3761	10:56:55	6-Aug-09	1.0
1737	1.2	29.4	48	0.3808	10:57:55	6-Aug-09	1.0
1738	1.5	29.5	48	0.386	10:58:55	6-Aug-09	1.0
1739	0.5	29.5	48	0.3541	10:59:55	6-Aug-09	1.0
1740	0.3	29.5	48	0.3487	11:00:55	6-Aug-09	1.0
1741	1.3	29.6	48	0.3794	11:01:55	6-Aug-09	1.0

Appendix I
Ambient Air Dust Monitoring Results - SEAD-12 Removal Action

Seneca Army Depot Activity
Romulus, NY

DataRam 4 Dust Monitor, Serial Number D454

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)

DataRam 4 Dust Monitor, Serial Number D464

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
1742	1.3	29.6	48	0.3743	11:02:55	6-Aug-09	1.0
1743	1	29.6	47	0.3633	11:03:55	6-Aug-09	1.0
1744	1.2	29.7	47	0.3676	11:04:55	6-Aug-09	1.0
1745	0.7	29.7	47	0.3539	11:05:55	6-Aug-09	1.0
1746	0.9	29.7	47	0.3588	11:06:55	6-Aug-09	1.0
1747	0.5	29.7	47	0.3512	11:07:55	6-Aug-09	1.0
1748	0.5	29.8	46	0.3492	11:08:55	6-Aug-09	0.9
1749	0.5	29.9	46	0.3482	11:09:55	6-Aug-09	0.9
1750	0.3	29.9	46	0.3464	11:10:55	6-Aug-09	0.9
1751	0.6	29.9	46	0.352	11:11:55	6-Aug-09	0.8
1752	0.8	29.9	46	0.3573	11:12:55	6-Aug-09	0.8
1753	0.7	30	45	0.3536	11:13:55	6-Aug-09	0.8
1754	0.1	30	45	0.3404	11:14:55	6-Aug-09	0.7
1755	0.5	30.1	45	0.3487	11:15:55	6-Aug-09	0.7
1756	1.1	30.1	45	0.363	11:16:55	6-Aug-09	0.8
1757	1.3	30.1	45	0.3695	11:17:55	6-Aug-09	0.8
1758	1	30.1	45	0.3619	11:18:55	6-Aug-09	0.7
1759	0.4	30.2	45	0.3491	11:19:55	6-Aug-09	0.7
1760	0.6	30.2	45	0.3533	11:20:55	6-Aug-09	0.7
1761	0.7	30.3	44	0.3543	11:21:55	6-Aug-09	0.7
1762	1	30.3	44	0.3638	11:22:55	6-Aug-09	0.7
1763	0.3	30.3	44	0.3464	11:23:55	6-Aug-09	0.7
1764	0.9	30.3	43	0.3586	11:24:55	6-Aug-09	0.7
1765	1.8	30.4	43	0.4011	11:25:55	6-Aug-09	0.8
1766	1.1	30.4	43	0.3843	11:26:55	6-Aug-09	0.8
1767	0.6	30.4	43	0.3607	11:27:55	6-Aug-09	0.8
1768	0.5	30.4	43	0.3542	11:28:55	6-Aug-09	0.8
1769	0.7	30.5	43	0.3656	11:29:55	6-Aug-09	0.8
1770	0.7	30.5	43	0.365	11:30:55	6-Aug-09	0.8
1771	0.5	30.5	42	0.3576	11:31:55	6-Aug-09	0.8
1772	0.3	30.5	43	0.3474	11:32:55	6-Aug-09	0.8
1773	1.2	30.5	43	0.3809	11:33:55	6-Aug-09	0.8
1774	0.8	30.5	42	0.3716	11:34:55	6-Aug-09	0.8
1775	0.9	30.5	42	0.3699	11:35:55	6-Aug-09	0.8
1776	0.8	30.5	42	0.37	11:36:55	6-Aug-09	0.8
1777	0.5	30.5	42	0.3579	11:37:55	6-Aug-09	0.8
1778	1.1	30.6	41	0.3783	11:38:55	6-Aug-09	0.8
1779	0.2	30.6	41	0.3446	11:39:55	6-Aug-09	0.8
1780	1	30.6	41	0.3731	11:40:55	6-Aug-09	0.8
1781	1	30.5	41	0.3733	11:41:55	6-Aug-09	0.7
1782	1.2	30.6	41	0.3848	11:42:55	6-Aug-09	0.8
1783	1	30.6	41	0.3769	11:43:55	6-Aug-09	0.8
1784	0.7	30.6	41	0.3634	11:44:55	6-Aug-09	0.8
1785	0.4	30.6	41	0.3545	11:45:55	6-Aug-09	0.8
1786	1	30.6	41	0.3789	11:46:55	6-Aug-09	0.8
1787	0.6	30.6	41	0.3584	11:47:55	6-Aug-09	0.8
1788	0.4	30.6	41	0.3549	11:48:55	6-Aug-09	0.8
1789	0.4	30.6	41	0.353	11:49:55	6-Aug-09	0.8
1790	0.6	30.6	41	0.3603	11:50:55	6-Aug-09	0.7
1791	1	30.6	41	0.3746	11:51:55	6-Aug-09	0.7
1792	1.3	30.6	40	0.3867	11:52:55	6-Aug-09	0.8
1793	1.1	30.7	40	0.3774	11:53:55	6-Aug-09	0.8
1794	0.7	30.7	40	0.3664	11:54:55	6-Aug-09	0.8
1795	0.6	30.7	40	0.3582	11:55:55	6-Aug-09	0.8
1796	1	30.7	40	0.375	11:56:55	6-Aug-09	0.8
1797	0.8	30.7	39	0.3694	11:57:55	6-Aug-09	0.8
1798	1.2	30.7	40	0.3777	11:58:55	6-Aug-09	0.8
1799	1	30.7	40	0.356	11:59:55	6-Aug-09	0.8
1800	1.3	30.7	39	0.3611	12:00:55	6-Aug-09	0.8
1801	1.5	30.7	40	0.3563	12:01:55	6-Aug-09	0.9
1802	0.6	30.7	40	0.341	12:02:55	6-Aug-09	0.9
1803	0.9	30.7	39	0.3432	12:03:55	6-Aug-09	0.9
1804	0.7	30.7	39	0.3417	12:04:55	6-Aug-09	0.9
1805	0.5	30.8	39	0.3405	12:05:55	6-Aug-09	0.9
1806	0.7	30.8	39	0.3416	12:06:55	6-Aug-09	0.9
1807	1.1	30.8	39	0.3442	12:07:55	6-Aug-09	0.9
1808	1.1	30.7	39	0.3438	12:08:55	6-Aug-09	0.9
1809	0.5	30.7	39	0.3402	12:09:55	6-Aug-09	0.9
1810	0.9	30.7	39	0.3432	12:10:55	6-Aug-09	0.9
1811	0.6	30.7	39	0.3409	12:11:55	6-Aug-09	0.9
1812	0.6	30.6	39	0.3412	12:12:55	6-Aug-09	0.9
1813	0.4	30.6	39	0.3396	12:13:55	6-Aug-09	0.9
1814	1.1	30.6	39	0.3444	12:14:55	6-Aug-09	0.8
1815	0.5	30.6	39	0.3401	12:15:55	6-Aug-09	0.8
1816	0.6	30.5	39	0.3413	12:16:55	6-Aug-09	0.8
1817	0.8	30.5	39	0.3425	12:17:55	6-Aug-09	0.7
1818	0.9	30.4	39	0.3362	12:18:55	6-Aug-09	0.7
1819	0.5	30.4	39	0.3353	12:19:55	6-Aug-09	0.7
1820	0.5	30.3	39	0.3352	12:20:55	6-Aug-09	0.7
1821	0.7	30.3	39	0.3344	12:21:55	6-Aug-09	0.7
1822	0.8	30.2	39	0.3341	12:22:55	6-Aug-09	0.7
1823	1.1	30.2	39	0.3325	12:23:55	6-Aug-09	0.7
1824	0.9	30.2	39	0.3337	12:24:55	6-Aug-09	0.7
1825	1	30.1	39	0.333	12:25:55	6-Aug-09	0.7
1826	0.7	30.1	39	0.3345	12:26:55	6-Aug-09	0.7
1827	1.3	30.1	39	0.3319	12:27:55	6-Aug-09	0.8
1828	0.4	30	39	0.3356	12:28:55	6-Aug-09	0.8
1829	1.3	30	40	0.3321	12:29:55	6-Aug-09	0.8
1830	0.6	30	40	0.3348	12:30:55	6-Aug-09	0.8
1831	1.1	29.9	40	0.3327	12:31:55	6-Aug-09	0.8
1832	0.8	29.9	40	0.3342	12:32:55	6-Aug-09	0.8
1833	0.9	29.9	40	0.3337	12:33:55	6-Aug-09	0.8
1834	0.5	29.9	39	0.3353	12:34:55	6-Aug-09	0.8
1835	0.9	29.9	40	0.3339	12:35:55	6-Aug-09	0.8
1836	1	29.9	39	0.333	12:36:55	6-Aug-09	0.9
1837	1	29.9	39	0.3334	12:37:55	6-Aug-09	0.9
1838	0.7	29.9	39	0.3345	12:38:55	6-Aug-09	0.9
1839	1.2	29.9	39	0.3372	12:39:55	6-Aug-09	0.9
1840	1	29.9	39	0.3507	12:40:55	6-Aug-09	0.9
1841	0.8	29.8	39	0.3486	12:41:55	6-Aug-09	0.9

Appendix I
Ambient Air Dust Monitoring Results - SEAD-12 Removal Action

Seneca Army Depot Activity
Romulus, NY

DataRam 4 Dust Monitor, Serial Number D454

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)

DataRam 4 Dust Monitor, Serial Number D464

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
1842	1.5	29.8	39	0.3569	12:42:55	6-Aug-09	0.9
1843	1.7	29.8	40	0.3602	12:43:55	6-Aug-09	1.0
1844	1.1	29.8	40	0.3523	12:44:55	6-Aug-09	1.0
1845	1.2	29.8	40	0.3534	12:45:55	6-Aug-09	1.0
1846	1.1	29.8	40	0.3521	12:46:55	6-Aug-09	1.0
1847	1	29.8	40	0.3516	12:47:55	6-Aug-09	1.0
1848	1.4	29.8	40	0.3553	12:48:55	6-Aug-09	1.1
1849	1.2	29.8	40	0.3535	12:49:55	6-Aug-09	1.1
1850	1.1	29.8	40	0.3533	12:50:55	6-Aug-09	1.1
1851	1.4	29.9	40	0.3556	12:51:55	6-Aug-09	1.2
1852	1.7	29.9	40	0.3721	12:52:55	6-Aug-09	1.2
1853	1.5	29.9	40	0.3773	12:53:55	6-Aug-09	1.2
1854	1.9	29.9	40	0.4724	12:54:55	6-Aug-09	1.3
1855	1.4	30	40	0.433	12:55:55	6-Aug-09	1.3
1856	1.5	30	40	0.441	12:56:55	6-Aug-09	1.3
1857	1.3	30	40	0.4162	12:57:55	6-Aug-09	1.4
1858	1.9	30	40	0.4639	12:58:55	6-Aug-09	1.4
1859	1.5	30.1	40	0.4329	12:59:55	6-Aug-09	1.4
1860	1.9	30.1	40	0.4604	13:00:55	6-Aug-09	1.4
1861	1.5	30.1	40	0.4329	13:01:55	6-Aug-09	1.5
1862	2.3	30.2	40	0.4816	13:02:55	6-Aug-09	1.5
1863	1.5	30.2	40	0.4585	13:03:55	6-Aug-09	1.6
1864	1.3	30.2	39	0.4419	13:04:55	6-Aug-09	1.6
1865	1.8	30.2	39	0.4716	13:05:55	6-Aug-09	1.6
1866	1.1	30.2	39	0.4035	13:06:55	6-Aug-09	1.6
1867	1.9	30.3	39	0.4602	13:07:55	6-Aug-09	1.6
1868	1.7	30.3	39	0.4349	13:08:55	6-Aug-09	1.6
1869	1.7	30.3	39	0.4355	13:09:55	6-Aug-09	1.6
1870	1.4	30.3	39	0.4176	13:10:55	6-Aug-09	1.6
1871	1.9	30.3	39	0.4376	13:11:55	6-Aug-09	1.6
1872	1.8	30.2	39	0.4285	13:12:55	6-Aug-09	1.7
1873	1.9	30.2	39	0.436	13:13:55	6-Aug-09	1.7
1874	2.3	30.2	39	0.4543	13:14:55	6-Aug-09	1.7
1875	1.5	30.2	39	0.4037	13:15:55	6-Aug-09	1.7
1876	2	30.2	39	0.41	13:16:55	6-Aug-09	1.7
1877	2.5	30.2	39	0.4288	13:17:55	6-Aug-09	1.8
1878	1.8	30.2	39	0.4001	13:18:55	6-Aug-09	1.8
1879	2	30.1	39	0.3889	13:19:55	6-Aug-09	1.8
1880	2.1	30.1	40	0.3924	13:20:55	6-Aug-09	1.8
1881	1.9	30.1	39	0.3862	13:21:55	6-Aug-09	1.8
1882	1.6	30.1	39	0.3823	13:22:55	6-Aug-09	1.9
1883	1.3	30.1	39	0.38	13:23:55	6-Aug-09	1.8
1884	1.8	30	39	0.3974	13:24:55	6-Aug-09	1.8
1885	1.6	30	39	0.3907	13:25:55	6-Aug-09	1.8
1886	1.4	30	39	0.3859	13:26:55	6-Aug-09	1.8
1887	2.1	30	39	0.3978	13:27:55	6-Aug-09	1.9
1888	2.1	30	39	0.3865	13:28:55	6-Aug-09	1.9
1889	1.9	29.9	39	0.3866	13:29:55	6-Aug-09	1.9
1890	2	29.9	40	0.3891	13:30:55	6-Aug-09	1.9
1891	2.1	29.9	40	0.3928	13:31:55	6-Aug-09	1.9
1892	2.1	29.9	39	0.4479	13:32:55	6-Aug-09	1.9
1893	1.6	29.9	40	0.4039	13:33:55	6-Aug-09	1.8
1894	1.2	29.9	40	0.3856	13:34:55	6-Aug-09	1.8
1895	2.2	29.9	40	0.4201	13:35:55	6-Aug-09	1.8
1896	2.1	29.9	40	0.4021	13:36:55	6-Aug-09	1.8
1897	1.8	29.9	40	0.4045	13:37:55	6-Aug-09	1.8
1898	1.6	29.9	40	0.3933	13:38:55	6-Aug-09	1.8
1899	1.4	29.8	40	0.3712	13:39:55	6-Aug-09	1.8
1900	0.9	29.9	40	0.3579	13:40:55	6-Aug-09	1.8
1901	0.8	29.9	40	0.3546	13:41:55	6-Aug-09	1.7
1902	1.7	29.9	40	0.3782	13:42:55	6-Aug-09	1.7
1903	0.8	29.9	40	0.3562	13:43:55	6-Aug-09	1.6
1904	1.7	29.9	40	0.3627	13:44:55	6-Aug-09	1.6
1905	1.7	29.9	40	0.3609	13:45:55	6-Aug-09	1.6
1906	1.5	29.9	40	0.3585	13:46:55	6-Aug-09	1.6
1907	1.3	30	40	0.3557	13:47:55	6-Aug-09	1.5
1908	0.9	30	40	0.3499	13:48:55	6-Aug-09	1.5
1909	1.5	30	39	0.3588	13:49:55	6-Aug-09	1.4
1910	1.3	30	39	0.3563	13:50:55	6-Aug-09	1.5
1911	1.5	30	39	0.3592	13:51:55	6-Aug-09	1.4
1912	1.4	30	39	0.3572	13:52:55	6-Aug-09	1.4
1913	1.4	30.1	39	0.3571	13:53:55	6-Aug-09	1.3
1914	1.5	30.1	39	0.3595	13:54:55	6-Aug-09	1.3
1915	1.8	30.1	39	0.3635	13:55:55	6-Aug-09	1.4
1916	1	30.1	39	0.3522	13:56:55	6-Aug-09	1.4
1917	1.4	30.1	39	0.3589	13:57:55	6-Aug-09	1.4
1918	1	30.1	39	0.3524	13:58:55	6-Aug-09	1.4
1919	1.2	30.1	39	0.3536	13:59:55	6-Aug-09	1.4
1920	1.3	30.1	39	0.3572	14:00:55	6-Aug-09	1.4
1921	1.4	30.1	39	0.3571	14:01:55	6-Aug-09	1.3
1922	2.4	30.2	39	0.37	14:02:55	6-Aug-09	1.4
1923	0.9	30.2	39	0.3709	14:03:55	6-Aug-09	1.4
1924	1.5	30.2	39	0.3972	14:04:55	6-Aug-09	1.4
1925	2	30.2	39	0.4745	14:05:55	6-Aug-09	1.4
1926	1.7	30.2	39	0.4477	14:06:55	6-Aug-09	1.5
1927	1.6	30.2	39	0.4312	14:07:55	6-Aug-09	1.5
1928	1.9	30.2	39	0.447	14:08:55	6-Aug-09	1.5
1929	1.4	30.2	39	0.4221	14:09:55	6-Aug-09	1.5
1930	1.6	30.2	39	0.428	14:10:55	6-Aug-09	1.5
1931	1.1	30.2	39	0.3992	14:11:55	6-Aug-09	1.5
1932	0.8	30.2	39	0.3886	14:12:55	6-Aug-09	1.5
1933	1	30.2	39	0.3906	14:13:55	6-Aug-09	1.4
1934	1	30.3	39	0.4028	14:14:55	6-Aug-09	1.4
1935	1.2	30.3	39	0.4084	14:15:55	6-Aug-09	1.4
1936	0.9	30.3	39	0.3931	14:16:55	6-Aug-09	1.4
1937	0.6	30.3	39	0.3741	14:17:55	6-Aug-09	1.4
1938	0.4	30.4	38	0.3592	14:18:55	6-Aug-09	1.2
1939	0.4	30.4	38	0.3604	14:19:55	6-Aug-09	1.2
1940	0.7	30.5	38	0.3772	14:20:55	6-Aug-09	1.1
1941	0.3	30.5	38	0.3532	14:21:55	6-Aug-09	1.0

Appendix I
Ambient Air Dust Monitoring Results - SEAD-12 Removal Action

Seneca Army Depot Activity
Romulus, NY

DataRam 4 Dust Monitor, Serial Number D454

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)

DataRam 4 Dust Monitor, Serial Number D464

Record Number	Mass Reading (ug/m^3)	Ambient Temperature (^{o}C)	Relative Humidiity (%)	Diameter	Time 24 hour Clock	Date	15 Minute Rolling Average (ug/m^3)
1942	0.4	30.5	38	0.3544	14:22:55	6-Aug-09	1.0
1943	0.5	30.6	38	0.3585	14:23:55	6-Aug-09	0.9
1944	1.2	30.6	38	0.3937	14:24:55	6-Aug-09	0.8
1945	1	30.6	38	0.3759	14:25:55	6-Aug-09	0.8
1946	0.5	30.6	37	0.3643	14:26:55	6-Aug-09	0.8
1947	0.7	30.7	37	0.3675	14:27:55	6-Aug-09	0.7
1948	0.4	30.6	37	0.3533	14:28:55	6-Aug-09	0.7
1949	0.7	30.7	37	0.3682	14:29:55	6-Aug-09	0.7
1950	0.7	30.7	37	0.3655	14:30:55	6-Aug-09	0.7
1951	0.9	30.7	37	0.3806	14:31:55	6-Aug-09	0.6
1952	0.9	30.7	37	0.3775	14:32:55	6-Aug-09	0.6
1953	1.2	30.7	37	0.3898	14:33:55	6-Aug-09	0.7
1954	1.4	30.7	37	0.4011	14:34:55	6-Aug-09	0.7
1955	0.7	30.7	37	0.3625	14:35:55	6-Aug-09	0.8
1956	0.4	30.8	37	0.3417	14:36:55	6-Aug-09	0.7
1957	1.4	30.8	37	0.3511	14:37:55	6-Aug-09	0.8
1958	0.4	30.8	37	0.3413	14:38:55	6-Aug-09	0.8
1959	0.8	30.8	37	0.3452	14:39:55	6-Aug-09	0.8
1960	0.8	30.8	37	0.3462	14:40:55	6-Aug-09	0.8
1961	1.4	30.8	37	0.3513	14:41:55	6-Aug-09	0.8
1962	0.8	30.8	37	0.3456	14:42:55	6-Aug-09	0.9
1963	0.4	30.8	37	0.3414	14:43:55	6-Aug-09	0.8
1964	0.9	30.8	37	0.3468	14:44:55	6-Aug-09	0.9
1965	0.7	30.8	36	0.3437	14:45:55	6-Aug-09	0.9
1966	0.8	30.8	37	0.3451	14:46:55	6-Aug-09	0.9
1967	1.1	30.8	37	0.348	14:47:55	6-Aug-09	0.9
1968	0.8	30.8	37	0.3459	14:48:55	6-Aug-09	0.9
1969	0.4	30.8	37	0.3419	14:49:55	6-Aug-09	0.8
1970	0.8	30.8	37	0.3454	14:50:55	6-Aug-09	0.8
1971	0.4	30.8	36	0.3416	14:51:55	6-Aug-09	0.8
1972	0.8	30.8	36	0.3455	14:52:55	6-Aug-09	0.8
1973	0.9	30.8	36	0.3466	14:53:55	6-Aug-09	0.8
1974	0.5	30.8	36	0.342	14:54:55	6-Aug-09	0.8
1975	0.9	30.8	36	0.3467	14:55:55	6-Aug-09	0.8
1976	0.5	30.8	35	0.3426	14:56:55	6-Aug-09	0.8
1977	1.2	30.8	36	0.3494	14:57:55	6-Aug-09	0.7
1978	0.3	30.8	36	0.3411	14:58:55	6-Aug-09	0.7
1979	0.2	30.8	35	0.3391	14:59:55	6-Aug-09	0.7
1980	0.2	30.7	35	0.3393	15:00:55	6-Aug-09	0.7
1981	0.2	30.7	36	0.3399	15:01:55	6-Aug-09	0.6
1982	0.4	30.7	36	0.3409	15:02:55	6-Aug-09	0.6
1983	0.6	30.6	36	0.3428	15:03:55	6-Aug-09	0.6
1984	0.4	30.6	36	0.3415	15:04:55	6-Aug-09	0.5
1985	0.3	30.6	36	0.3402	15:05:55	6-Aug-09	0.5
1986	1.1	30.6	36	0.3483	15:06:55	6-Aug-09	0.6
1987	0.5	30.6	36	0.3418	15:07:55	6-Aug-09	0.6
1988	0.1	30.6	36	0.3386	15:08:55	6-Aug-09	0.5
1989	0.5	30.6	36	0.3427	15:09:55	6-Aug-09	0.5
1990	0.8	30.6	36	0.3451	15:10:55	6-Aug-09	0.5
1991	0.7	30.6	36	0.3446	15:11:55	6-Aug-09	0.5
1992	0.6	30.6	36	0.3426	15:12:55	6-Aug-09	0.5
1993	0.2	30.5	36	0.3393	15:13:55	6-Aug-09	0.4
1994	0.4	30.6	36	0.3415	15:14:55	6-Aug-09	0.5
1995	0.6	30.6	36	0.3434	15:15:55	6-Aug-09	0.5
1996	0.4	30.6	36	0.3412	15:16:55	6-Aug-09	0.5
1997	0.5	30.6	36	0.3424	15:17:55	6-Aug-09	0.5
1998	0.4	30.6	36	0.3419	15:18:55	6-Aug-09	0.5
1999	0.6	30.6	36	0.3432	15:19:55	6-Aug-09	0.5
2000	0.8	30.6	36	0.3447	15:20:55	6-Aug-09	0.5
2001	0.4	30.6	36	0.3421	15:21:55	6-Aug-09	0.5
2002	0.3	30.6	36	0.3404	15:22:55	6-Aug-09	0.5
2003	0.6	30.6	36	0.3438	15:23:55	6-Aug-09	0.5
2004	1	30.6	36	0.3469	15:24:55	6-Aug-09	0.6
2005	0.4	30.6	36	0.3419	15:25:55	6-Aug-09	0.5

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APPENDIX J

WASTE MANIFESTS AND TRUCK LOAD OUT LOGS

Scrap Metal Receipts, Waste Manifests, and Weight Ticket are included on CD

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Luffman Metal Recyclers

Thorpe Road
Seneca Falls, NY 13148
(315) 568-5315

Dirty Alum.

GROSS WEIGHT	64380
TARE	37780
NET WEIGHT	26,600

HEAVY COPPER	
LIGHT COPPER	
BRASS	
RADIATORS	Weight to be Determine lots of Dirt
ALUMINUM	
BATTERIES	
LEAD	
DIE-CAST	
ST. STEEL	

Army Report

VEHICLE IDENT [redacted]

DATE 10-2-09

$ AMOUN [redacted]

Luffman Metal Recyclers

Thorpe Road
Seneca Falls, NY 13148
(315) 568-5315

Dirt Alum

GROSS WEIGHT	~~67820~~ 67820
TARE	37840
NET WEIGHT	29980

HEAVY COPPER	Weight to be Determine lots of Dirt
LIGHT COPPER	
BRASS	
RADIATORS	
ALUMINUM	
BATTERIES	
LEAD	
DIE-CAST	
ST. STEEL	

Army Report

VEHICLE I [redacted]

DATE 10-2-09

$ A [redacted]

Box 46

Luffman Metal Recyclers

Thorpe Road
Seneca Falls, NY 13148
(315) 568-5315

Dirt Alum

GROSS WEIGHT	56620
TARE	34480
NET WEIGHT	22,140

HEAVY COPPER	Weight to be Determined lots of Dirt
LIGHT COPPER	
BRASS	
RADIATORS	
ALUMINUM	
BATTERIES	
LEAD	
DIE-CAST	
ST. STEEL	

Army Depot

VEHICLE IDEN [redacted]

DATE 10-2-09 $ AMOU [redacted]

Luffman Metal Recyclers

Thorpe Road
Seneca Falls, NY 13148
(315) 568-5315

Dirt Alum

GROSS WEIGHT	63840
TARE	37360
NET WEIGHT	26480

HEAVY COPPER	Weight to be Determined lots of Dirt
LIGHT COPPER	
BRASS	
RADIATORS	
ALUMINUM	
BATTERIES	
LEAD	
DIE-CAST	
ST. STEEL	

Army Depot

VEHICLE IDE [redacted]

DATE 10-2-09 $ AMO [redacted]

Luffman Metal Recyclers

Thorpe Road
Seneca Falls, NY 13148
(315) 568-5315

Dirt Alum

GROSS WEIGHT	67040
TARE	37160
NET WEIGHT	29880

Weight to be determined lots of Dirt

HEAVY COPPER	
LIGHT COPPER	
BRASS	
RADIATORS	
ALUMINUM	
BATTERIES	
LEAD	
DIE-CAST	
ST. STEEL	

Army Dept

VEHICLE IDENT [redacted]

DATE 10-5-09 $ AMOUN [redacted]

Box 36

Luffman Metal Recyclers

Thorpe Road
Seneca Falls, NY 13148
(315) 568-5315

Pipes concrete + Large S.S.

GROSS WEIGHT	48460
TARE	31940
NET WEIGHT	16,520

HEAVY COPPER	
LIGHT COPPER	
BRASS	
RADIATORS	
ALUMINUM	
BATTERIES	
LEAD	
DIE-CAST	
ST. STEEL	

Army Depot

VEHICLE IDE [redacted]

DATE 10-2-09 $ AMO [redacted]

Luffman Metal Recyclers

Thorpe Road
Seneca Falls, NY 13148
(315) 568-5315

GROSS WEIGHT 71460
TARE 33700
NET WEIGHT 37760

LOTS OF DIRT

HEAVY COPPER
LIGHT COPPER
BRASS
RADIATORS
ALUMINUM
BATTERIES
LEAD
DIE-CAST
ST. STEEL

VEHICLE IDE [redacted]

10-12-09
DATE

$ [redacted]
AMOUNT PAID

Boy 29

Luffman Metal Recyclers

Thorpe Road
Seneca Falls, NY 13148
(315) 568-5315

MIXED

GROSS WEIGHT 50480
TARE 32460
NET WEIGHT 18020

HEAVY COPPER
LIGHT COPPER
BRASS
RADIATORS
ALUMINUM
BATTERIES
LEAD
DIE-CAST
ST. STEEL

Army Depot

VEHICLE IDEN [redacted]

DATE

$ [redacted]
AMOU

Luffman Metal Recyclers

Thorpe Road
Seneca Falls, NY 13148
(315) 568-5315

GROSS WEIGHT

TARE

NET WEIGHT

415 HEAVY COPPER [redacted]

LIGHT COPPER

BRASS

RADIATORS

ALUMINUM

BATTERIES

LEAD

DIE-CAST

ST. STEEL

VEHICLE IDEN [redacted]

10-15-09
DATE

$ AMOUNT PAID

Luffman Metal Recyclers

Thorpe Road
Seneca Falls, NY 13148
(315) 568-5315

GROSS WEIGHT 59460 X20

TARE 32540

NET WEIGHT 27540

LOTS OF DIRT HEAVY COPPER

LIGHT COPPER

BRASS

RADIATORS

ALUMINUM

BATTERIES

LEAD

DIE-CAST

ST. STEEL

VEHICLE IDEN [redacted]

10-15-09
DATE

$ AMOUNT PAID

Box 34

Luffman Metal Recyclers

Thorpe Road
Seneca Falls, NY 13148
(315) 568-5315

Dirtbl

GROSS WEIGHT	42080
TARE	32580
NET WEIGHT	9500

42080
32580
9500

HEAVY COPPER

LIGHT COPPER

BRASS

RADIATORS

ALUMINUM

BATTERIES

LEAD

DIE-CAST

ST. STEEL

Army [redacted]

VEHICLE IDENT [redacted]

DATE 10-15-09

$ _____ AMOUNT PAID

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12501

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT
RICCELLI ENTERPRISES INC. " P.O. BOX 6418 SYRACUSE, NY 13217	9/30/09	
TRUCK #	TRAILER #	

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION		WEIGHT
1	C&D MATERIAL **Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**	

SHIPPER SIGNATURE Stephen M Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE _____ PRINT NAME _____

SPECIAL INSTRUCTIONS:

FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:

Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____

CONSIGNEE PRINT NAME _____

CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM _____ DATE _____

BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12502

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	9/30/09	7 22	
TRUCK # 46889 JE #32	TRAILER # T 402		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION		WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN**	
		WEIGHT OUT	
		BILLED WEIGHT	

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE [signature] PRINT NAME [signature]

SPECIAL INSTRUCTIONS:

FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:

Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____

CONSIGNEE PRINT NAME _____

CONSIGNEE SIGN HERE (NO INITIALS) _____

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM _____ DATE _____

BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12503

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	9/30/09	7:25	
TRUCK # 58059 J2 #14	TRAILER # 71402		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Charles Burkdorn PRINT NAME Charles Burkdorn

SPECIAL INSTRUCTIONS:

FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:

Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____

CONSIGNEE PRINT NAME _____

CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM _____ DATE _____

BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12504

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	9/30/09	729	
TRUCK # 99718 PA #624	TRAILER # 221		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE [signature] PRINT NAME Joseph Davey

SPECIAL INSTRUCTIONS:

FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:

Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____

CONSIGNEE PRINT NAME _____

CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM _____ DATE _____

BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12505

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	9/30/09	7:32	
TRUCK # 21283 PA #265	TRAILER # 152		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE C LaBarge PRINT NAME C. LaBarge

SPECIAL INSTRUCTIONS:

FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:

Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____

CONSIGNEE PRINT NAME _____

CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM _____ DATE _____

BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12506

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	9/30/09	7:35	
TRUCK # 666 JX #38	TRAILER # NA		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION		WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN**	
		WEIGHT OUT	
		BILLED WEIGHT	

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE _____ PRINT NAME _____

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12507

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	9/30/09	742	
TRUCK # 97 5738JZ	TRAILER #		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION		WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN**	
		WEIGHT OUT	
		BILLED WEIGHT	

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Tom Felice PRINT NAME Tom Felice

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12508

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	9/30/04	752	
TRUCK # 35018 JT #19	TRAILER # ~~7A 402~~ T414		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Neil Bailey PRINT NAME Neil Bailey

SPECIAL INSTRUCTIONS:

FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:

Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____

CONSIGNEE PRINT NAME _____

CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM _____ DATE _____

BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12509

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	9/30/09		
TRUCK # 64340 PM 156	TRAILER # 2111		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE _____ PRINT NAME Jimmy Q. via 1253.

SPECIAL INSTRUCTIONS:

FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:

Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____

CONSIGNEE PRINT NAME _____

CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM _____ DATE _____

BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12510

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	9/30/09	908	
TRUCK # 78 6651JX	TRAILER # 7A-402		426

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Howie 554 PRINT NAME Howie 554

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12511

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	9/30/09	911	
TRUCK # 309 32787JU	TRAILER # 420		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE [illegible] PRINT NAME [illegible]

SPECIAL INSTRUCTIONS:

FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:

Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____

CONSIGNEE PRINT NAME _____

CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM _____ DATE _____

BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12512

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	9/30/09	913	
TRUCK # 32 46889 JE	TRAILER # ~~32~~ T402		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION		WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN**	
		WEIGHT OUT	
		BILLED WEIGHT	

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE [signature] PRINT NAME [illegible]

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____ (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12513

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	9/30/09	916	
TRUCK # 11 48057 72	TRAILER # 7409		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION		WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN**	
		WEIGHT OUT	
		BILLED WEIGHT	

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Charley Buckalew PRINT NAME Charley Buckalew

SPECIAL INSTRUCTIONS:

FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:

Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____

CONSIGNEE PRINT NAME _____

CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION — FIRM _____ DATE _____ ☐ AM ☐ PM
BY _____ TIME _____

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12514

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	9/30/09	0953	
TRUCK # 6642 JX 38	TRAILER #		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Mark Lutz PRINT NAME Mark E. Lutz

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12515

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	[illegible]	0156	
TRUCK # 578 77 52 77	TRAILER #		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Tom Felice PRINT NAME Tom Felice

SPECIAL INSTRUCTIONS:

FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:

Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____

CONSIGNEE PRINT NAME _____

CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM _____ DATE _____ ☐ AM

BY _____ TIME _____ ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12516

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	07/30/09	0958	
TRUCK # 21283PA 265	TRAILER # 152		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Chris Bourg PRINT NAME Craig LeRoux

SPECIAL INSTRUCTIONS:

FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm **Saturday 7:00 am to Noon**

DESTINATION:

Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____

CONSIGNEE PRINT NAME _____

CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM _____ DATE _____

BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12517

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	09/30/09	0751	
TRUCK # 9918 PA 624	TRAILER # 9[illegible] NY 221		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE [signature] PRINT NAME Joseph Davey

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12518

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	09.007	10:18	
TRUCK # 350b JT 19	TRAILER # T414		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Neil Bailey PRINT NAME Neil Bailey

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____ (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse	Rochester	Geneva
P.O. Box 6418	6800 W. Henrietta Road	1210 Gifford Road
Syracuse, NY 13217	Rush, NY 14543	Phelps, NY 14532
(315) 433-5115	(585) 344-8410	(315) 548-4049

12519

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	01/30/07	1:18	
TRUCK # 156 64340 PA	TRAILER # 211		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION		WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN**	
		WEIGHT OUT	
		BILLED WEIGHT	

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE [signature] PRINT NAME Jimmy Austin 1352

SPECIAL INSTRUCTIONS:

FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:

Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____

CONSIGNEE PRINT NAME _____

CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION — FIRM _____ DATE _____ ☐ AM ☐ PM — BY _____ TIME _____

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
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Syracuse, NY 13217
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Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12520

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	093009	1124	
TRUCK # 14 58059 J2	TRAILER # T409		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE [signature] PRINT NAME [signature]

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

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White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1[illegible]10 Gifford Road
F[illegible]lps, NY 14532
(315) 548-4049

12521

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	013009	1133	
TRUCK # 309 32787 JH	TRAILER # 420		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE [illegible] PRINT NAME [illegible]

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____ (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12522

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	013009	1137	
TRUCK # 78 6611 JX	TRAILER # 426		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION		WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN**	
		WEIGHT OUT	
		BILLED WEIGHT	

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Howie 554 PRINT NAME Howie 554

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

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White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12523

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	093009	1140	
TRUCK # 38 66642 JX	TRAILER #		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE [illegible] PRINT NAME [illegible]

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12524

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	093009	1152	
TRUCK # 19 57899 J2	TRAILER #		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Tom Ferrara PRINT NAME Tom Ferrara

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____ (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12525

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	093009	1156	
TRUCK # 624 97718 PA	TRAILER # 221		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE [signature] PRINT NAME Joseph Davey

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12526

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	013009	1201	
TRUCK # 35018 JT #19	TRAILER # T414		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION		WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN**	
		WEIGHT OUT	
		BILLED WEIGHT	

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Neil Bailey PRINT NAME Neil Bailey

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____

CONSIGNEE PRINT NAME _____

CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM _____ DATE _____ ☐ AM ☐ PM

BY _____ TIME _____

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12527

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	09/30/07	12 11	
TRUCK # 156 64340 PA	TRAILER # 211		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE _____ PRINT NAME _____

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

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Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12528

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	093009	1213	
TRUCK # 265 21283 PA	TRAILER # 152		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE [signature] PRINT NAME [signature]

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12529

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	093009	1220	
TRUCK # 32 46867 JE	TRAILER # T402		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE _____ PRINT NAME _____

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12530

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	0930 ish	808	
TRUCK # 14 58059 J2	TRAILER # T409		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE [signature] PRINT NAME Charley Bucklew

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

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White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

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Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
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(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12531

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	093009	1321	
TRUCK # 38 66642 JX	TRAILER #		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE [illegible] PRINT NAME [illegible]

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

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White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

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Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12532

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	9/30/09	1337	
TRUCK # 97	TRAILER #		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION		WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN**	
		WEIGHT OUT	
		BILLED WEIGHT	

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE [signature] PRINT NAME Tom Felice

SPECIAL INSTRUCTIONS:

FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:

Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____

CONSIGNEE PRINT NAME _____

CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM _____ DATE _____

BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

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P.O. Box 6418
Syracuse, NY 13217
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Rochester
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Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12533

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	9/30/09	1347	
TRUCK # 624 99718PA	TRAILER # 221		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE [signature] PRINT NAME Joseph Davey

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

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White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

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Rochester
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Rush, NY 14543
(585) 344-8410

Geneva
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Phelps, NY 14532
(315) 548-4049

12534

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	9/30/09	1356	
TRUCK # 309 32787 JU	TRAILER # 920		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION		WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN**	
		WEIGHT OUT	
		BILLED WEIGHT	

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE [signature] PRINT NAME [illegible]

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____

CONSIGNEE PRINT NAME _____

CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM _____ DATE _____

BY _____ TIME _____ ☐ AM ☐ PM

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White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

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(585) 344-8410

Geneva
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Phelps, NY 14532
(315) 548-4049

12535

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	9/30/04	1358	
TRUCK # 6619 JY 79	TRAILER # 426		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Howie SSY PRINT NAME Howie SSY

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12536

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	9/30/09	1403	
TRUCK # 19 350185T	TRAILER # T 914		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION		WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN**	
		WEIGHT OUT	
		BILLED WEIGHT	

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Neil Bailey PRINT NAME Neil Bailey

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

N

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12537

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	9/30/09	1404	
TRUCK # 156	TRAILER # 211		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE _____ PRINT NAME _____

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____ (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____ ☐ AM ☐ PM
BY _____ TIME _____

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12538

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	9/30/09	1946	
TRUCK # 265 21283 PA	TRAILER # 152		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE [signature] PRINT NAME Craig LaBarge

SPECIAL INSTRUCTIONS:

FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:

Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____

CONSIGNEE PRINT NAME _____

CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM _____ DATE _____

BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

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P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

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1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12539

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	093009	1437	
TRUCK # 32 46609 JE	TRAILER # T402		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION		WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN**	
		WEIGHT OUT	
		BILLED WEIGHT	

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE _____ PRINT NAME _____

SPECIAL INSTRUCTIONS:

FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:

Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____

CONSIGNEE PRINT NAME _____

CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM _____ DATE _____

BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12540

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10 30 09	0710	
TRUCK # 14 58059 JZ	TRAILER # T409		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Charley Burbank PRINT NAME Charley Burbank

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____ (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
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(585) 344-8410

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1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12541

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/01/09	0711	
TRUCK # 32 46889 JE	TRAILER # T402		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE _____ PRINT NAME _____

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

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White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

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Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
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(585) 344-8410

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1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12542

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	100109	0712	
TRUCK # 97 57899 JZ	TRAILER # NA		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Tom Felco PRINT NAME Tom Felco

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

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White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12543

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/01/09	0713	
TRUCK # 19 35018 JT	TRAILER # T414		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Neil Bailey PRINT NAME Neil Bailey

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____

CONSIGNEE PRINT NAME _____

CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM _____ DATE _____

BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12544

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/01/09	0715	
TRUCK # 38 66642 JX	TRAILER # NA		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Mark Fenton PRINT NAME Mark T. Fenton

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

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Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12545

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/01/09	0720	
TRUCK # 265 21283 PA	TRAILER # NA		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION		WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN**	
		WEIGHT OUT	
		BILLED WEIGHT	

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE [signature] PRINT NAME [signature]

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

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White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

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Syracuse, NY 13217
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(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12546

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/01/07	0724	
TRUCK # 624 99718 PA	TRAILER # 221		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE [signature] PRINT NAME Joseph Davis

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____ (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION — FIRM _____ DATE _____ ☐ AM ☐ PM — BY _____ TIME _____

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Syracuse, NY 13217
(315) 433-5115

Rochester
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Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12547

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/01/09	0729
TRUCK # 135 32262PA	TRAILER # 217	

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION		WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN**	
		WEIGHT OUT	
		BILLED WEIGHT	

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE [signature] PRINT NAME [signature]

SPECIAL INSTRUCTIONS:

FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:

Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____

CONSIGNEE PRINT NAME _____

CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM _____ DATE _____

BY _____ TIME _____ ☐ AM ☐ PM

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Phelps, NY 14532
(315) 548-4049

12548

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/01/09	0749	
TRUCK # 262 55921 PA	TRAILER # 158		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION		WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN**	
		WEIGHT OUT	
		BILLED WEIGHT	

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE James Chapman PRINT NAME James Chapman

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____

CONSIGNEE PRINT NAME _____

CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM _____ DATE _____

BY _____ TIME _____ ☐ AM ☐ PM

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(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12549

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/16/09	0756	
TRUCK # 253 79251 R9	TRAILER # 153		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE [signature] PRINT NAME [illegible] Stevens

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____ (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse	Rochester	Geneva
P.O. Box 6418	6800 W. Henrietta Road	1210 Gifford Road
Syracuse, NY 13217	Rush, NY 14543	Phelps, NY 14532
(315) 433-5115	(585) 344-8410	(315) 548-4049

12550

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/01/11	08 25	
TRUCK # 156 64340 PA	TRAILER # 211		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION		WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN**	
		WEIGHT OUT	
		BILLED WEIGHT	

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE [signature] PRINT NAME Jimmy Rush 752

SPECIAL INSTRUCTIONS:

FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:

Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____

CONSIGNEE PRINT NAME _____

CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION — FIRM _____ DATE _____ ☐ AM ☐ PM — BY _____ TIME _____

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12551

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/6/04	0827	
TRUCK # 645 13608 PB	TRAILER # 220		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE [signature] PRINT NAME TOM DALUS

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____

CONSIGNEE PRINT NAME _____

CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM _____ DATE _____

BY _____ TIME _____ ☐ AM ☐ PM

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White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

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Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12552

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/01/09	0829	
TRUCK # 507 55485 PA	TRAILER # 215		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE [signature] PRINT NAME [illegible]

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

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White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

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Geneva
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Phelps, NY 14532
(315) 548-4049

12553

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/01/09	0859	
TRUCK # 78 66517 JX	TRAILER # 426		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Illegible PRINT NAME Illegible

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____ (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

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White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

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(315) 548-4049

12554

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/01/09	0900	
TRUCK # 309 32787 34	TRAILER # 420		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE [signature] PRINT NAME [illegible]

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

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(315) 548-4049

12555

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/01/09	0701	
TRUCK # 14 58059 J2	TRAILER # T409		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Christy Bucklew PRINT NAME Christy Bucklew

SPECIAL INSTRUCTIONS:

FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:

Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____

CONSIGNEE PRINT NAME _____

CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM _____ DATE _____

BY _____ TIME _____ ☐ AM ☐ PM

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White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

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P.O. Box 6418
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Rochester
6800 W. Henrietta Road
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(315) 548-4049

12556

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/01/09	0903	
TRUCK # 52 46889 JE	TRAILER # 7402		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE _____ PRINT NAME _____

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

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White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

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Syracuse
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Rochester
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Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12557

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/01/09	0910	
TRUCK # 17 57879 J2	TRAILER # NA		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION		WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN**	
		WEIGHT OUT	
		BILLED WEIGHT	

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Tom Felice PRINT NAME Tom Felice

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____

CONSIGNEE PRINT NAME _____

CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM _____ DATE _____ ☐ AM ☐ PM

BY _____ TIME _____

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

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Syracuse
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Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12558

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/01/09	0911	
TRUCK # 19 35018 JT	TRAILER # T414		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION		WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN**	
		WEIGHT OUT	
		BILLED WEIGHT	

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Neil Bailey PRINT NAME Neil Bailey

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____

CONSIGNEE PRINT NAME _____

CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM _____ DATE _____

BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse	Rochester	Geneva
P.O. Box 6418	6800 W. Henrietta Road	1210 Gifford Road
Syracuse, NY 13217	Rush, NY 14543	Phelps, NY 14532
(315) 433-5115	(585) 344-8410	(315) 548-4049

12559

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/01/01	0722	
TRUCK # 38 66642 JX	TRAILER # NA		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION		WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN**	
		WEIGHT OUT	
		BILLED WEIGHT	

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE [illegible] PRINT NAME [illegible]

SPECIAL INSTRUCTIONS:

FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:

Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____

CONSIGNEE PRINT NAME _____

CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION — FIRM _____ DATE _____ ☐ AM ☐ PM — BY _____ TIME _____

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(585) 344-8410

Geneva
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Phelps, NY 14532
(315) 548-4049

12560

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/01/01	0131	
TRUCK # 765	TRAILER # 152		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION		WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN**	
		WEIGHT OUT	
		BILLED WEIGHT	

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Paul LaBarge PRINT NAME Paul LaBarge

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

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White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

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Rochester
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(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12561

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	6/3/01	1:55	
TRUCK # 624 7718 91	TRAILER # 21		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steo Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE [signature] PRINT NAME Joseph Dwyer

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____ (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

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Geneva
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Phelps, NY 14532
(315) 548-4049

12562

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/01/01	0148	
TRUCK # 135 32262 PA	TRAILER # 217		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE _____ PRINT NAME Russell Stevens

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

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White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

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Phelps, NY 14532
(315) 548-4049

12563

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/01/09	1005	
TRUCK # 262 55721 PA	TRAILER # 158		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE James Chapman PRINT NAME James Chapman

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____

CONSIGNEE PRINT NAME _____

CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM _____ DATE _____

BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12564

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/01/09	1020	
TRUCK # 253 77251 PA	TRAILER # 153		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION		WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN**	
		WEIGHT OUT	
		BILLED WEIGHT	

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE [signature] PRINT NAME [signature]

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____ (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION — FIRM _____ DATE _____ ☐ AM ☐ PM — BY _____ TIME _____

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12565

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/01/09	1048	
TRUCK # 156 64340 PA	TRAILER # 211		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE [signature] PRINT NAME Jimmy Reed 1752.

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse	Rochester	Geneva
P.O. Box 6418	6800 W. Henrietta Road	1210 Gifford Road
Syracuse, NY 13217	Rush, NY 14543	Phelps, NY 14532
(315) 433-5115	(585) 344-8410	(315) 548-4049

12566

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	Nov 01	1050	
TRUCK # 507 55485 PA	TRAILER # 215		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION		WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN**	
		WEIGHT OUT	
		BILLED WEIGHT	

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE [illegible] PRINT NAME [illegible]

SPECIAL INSTRUCTIONS:

FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:

Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____

CONSIGNEE PRINT NAME _____

CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION — FIRM _____ DATE _____ ☐ AM ☐ PM — BY _____ TIME _____

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12567

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/01/09	10:52	
TRUCK # 14 5805102	TRAILER # T409		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Charley Buckley PRINT NAME Charley Buckley

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12568

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/01/09	11/01	
TRUCK # 32 46801 JE	TRAILER # T402		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE _____ PRINT NAME _____

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

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P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12569

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/01/09	1104	
TRUCK # 97 57677 52	TRAILER #		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Tim Feltz PRINT NAME Tim Feltz

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

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Syracuse
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Syracuse, NY 13217
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Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12570

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/01/09	11:10	
TRUCK # 38 66642 JV	TRAILER # NA		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE [signature] PRINT NAME [illegible]

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12571

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/01/09	11:11	
TRUCK # 78 665/7 JV	TRAILER # 426		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Harris SH PRINT NAME Harris SH

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____ ☐ AM ☐ PM
BY _____ TIME _____

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12572

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/01/09	11:15	
TRUCK # 309 32787 JU	TRAILER # 420		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION		WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN**	
		WEIGHT OUT	
		BILLED WEIGHT	

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE [signature] PRINT NAME [illegible]

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____ (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

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Syracuse, NY 13217
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(585) 344-8410

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1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12573

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/01/07	1126	
TRUCK # 765 21283PA	TRAILER # 15 2		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION		WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN**	
		WEIGHT OUT	
		BILLED WEIGHT	

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE [signature] PRINT NAME [signature]

SPECIAL INSTRUCTIONS:

FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:

Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____

CONSIGNEE PRINT NAME _____

CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM _____ DATE _____ ☐ AM ☐ PM

BY _____ TIME _____

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

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Syracuse, NY 13217
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(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12574

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/01/01	1127	
TRUCK # 624 99718 PA	TRAILER # 221		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE [signature] PRINT NAME Joseph Davey

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

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White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12575

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/16/07	1142	
TRUCK # 135 32762 PA	TRAILER # 217		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION		WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN**	
		WEIGHT OUT	
		BILLED WEIGHT	

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE [signature] PRINT NAME [signature]

SPECIAL INSTRUCTIONS:

FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:

Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____

CONSIGNEE PRINT NAME _____

CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM _____ DATE _____

BY _____ TIME _____ ☐ AM ☐ PM

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White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

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Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12576

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/1/09	1145	
TRUCK # 19 35018 JT	TRAILER # T414		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Neil Bailey PRINT NAME Neil Bailey

SPECIAL INSTRUCTIONS:

FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:

Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____

CONSIGNEE PRINT NAME _____

CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM _____ DATE _____

BY _____ TIME _____ ☐ AM ☐ PM

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White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

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(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12577

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/01/09	1204	
TRUCK # 262 55-121 PA	TRAILER # 758		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Jana Chap PRINT NAME Jana Chap

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12578

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/01/09	1216	
TRUCK # 7759 PA 253	TRAILER # 153		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION		WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN**	
		WEIGHT OUT	
		BILLED WEIGHT	

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE [signature] PRINT NAME [illegible]

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

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White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

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P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12579

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/01/09	1247	
TRUCK # 14 58059 JZ	TRAILER # T409		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Charley Bucklew PRINT NAME Charley Bucklew

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____ (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

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Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12580

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/6/09	1253	
TRUCK # 507 55485 PA	TRAILER # 215		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE _____ PRINT NAME _____

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

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White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

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P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12561

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/01/09	1255	
TRUCK # 7599752 97	TRAILER # N4		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Tom Felice PRINT NAME Tom Felice

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

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White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
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Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12582

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/01/09		
TRUCK # 64340 PA 156	TRAILER # 211		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE _____ PRINT NAME Jimmy Rose

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____ (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____ ☐ AM ☐ PM
BY _____ TIME _____

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12583

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/01/09	802	
TRUCK # 46889 JE 32	TRAILER # T402		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION		WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN**	
		WEIGHT OUT	
		BILLED WEIGHT	

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE _____ PRINT NAME _____

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

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Rochester
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(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12584

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/01/09	1307	
TRUCK # 38 66642 JX	TRAILER #		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Mark Fenton PRINT NAME Mark Fenton

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12585

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/01/09	1327	
TRUCK # 78 66519 JX	TRAILER # 426		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Howie 551 PRINT NAME Howie 551

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____ (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____ ☐ AM ☐ PM
BY _____ TIME _____

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12586

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/01/09	1335	
TRUCK # 309 32787 JU	TRAILER # 420		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE [signature] PRINT NAME [illegible]

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____

CONSIGNEE PRINT NAME _____

CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM _____ DATE _____ ☐ AM ☐ PM

BY _____ TIME _____

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

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(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12587

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/01/09	1347	
TRUCK # 265 21283 PA	TRAILER # 152		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE [signature] PRINT NAME [signature]

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

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White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

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(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12588

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/01/09	1348	
TRUCK # 624 99718 PA	TRAILER # 221		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE [signature] PRINT NAME Joseph Davey

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____ ☐ AM ☐ PM
BY _____ TIME _____

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White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

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(585) 344-8410

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1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12589

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/01/09	1353	
TRUCK # 19 35018 JT	TRAILER # T414		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE [signature] PRINT NAME [signature]

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____

CONSIGNEE PRINT NAME _____

CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM _____ DATE _____

BY _____ TIME _____ ☐ AM ☐ PM

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(315) 548-4049

12590

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/01/09	1354	
TRUCK # 35 3276 PA	TRAILER # 217		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE _____ PRINT NAME _____

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

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White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

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Phelps, NY 14532
(315) 548-4049

12591

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	1/6/09	1357	
TRUCK # 262 55721 PA	TRAILER # 158		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE [signature] PRINT NAME [signature]

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12592

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/1/09	1436	
TRUCK # 253 77259 PA	TRAILER # 153		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION		WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN**	
		WEIGHT OUT	
		BILLED WEIGHT	

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE [illegible] PRINT NAME [illegible]

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

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White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

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(585) 344-8410

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1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12593

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/10/07	1444	
TRUCK # 14 58059 JZ	TRAILER # T409		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Chucky Burkhow PRINT NAME Chucky Burkhow

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____ (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse	Rochester	Geneva
P.O. Box 6418	6800 W. Henrietta Road	1210 Gifford Road
Syracuse, NY 13217	Rush, NY 14543	Phelps, NY 14532
(315) 433-5115	(585) 344-8410	(315) 548-4049

12594

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/01/09	215	
TRUCK # 507 55485 PA	TRAILER # 1446		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION		WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN**	
		WEIGHT OUT	
		BILLED WEIGHT	

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE [illegible] PRINT NAME [illegible]

SPECIAL INSTRUCTIONS:

FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:

Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____

CONSIGNEE PRINT NAME _____

CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION — FIRM _____ DATE _____ ☐ AM ☐ PM — BY _____ TIME _____

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

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P.O. Box 6418
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Rochester
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1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12595

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/01/09	1447	
TRUCK # 156 64340 PA	TRAILER # 221		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION		WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN**	
		WEIGHT OUT	
		BILLED WEIGHT	

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE [signature] PRINT NAME Jimmy R. Sin. 1752

SPECIAL INSTRUCTIONS:

FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:

Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____

CONSIGNEE PRINT NAME _____

CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION — FIRM _____ DATE _____ ☐ AM ☐ PM — BY _____ TIME _____

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White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

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(585) 344-8410

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1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12596

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/01/09	1505	
TRUCK # 32 46809 JE	TRAILER # 7402		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION		WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN**	
		WEIGHT OUT	
		BILLED WEIGHT	

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE [signature] PRINT NAME [signature]

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____

CONSIGNEE PRINT NAME _____

CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM _____ DATE _____

BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

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Syracuse, NY 13217
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(585) 344-8410

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Phelps, NY 14532
(315) 548-4049

12597

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/01/09	1507	
TRUCK # 97 578JJZ	TRAILER # NA		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Tom Felice PRINT NAME Tom Felice

SPECIAL INSTRUCTIONS:

FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:

Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____

CONSIGNEE PRINT NAME _____

CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM _____ DATE _____

BY _____ TIME _____ ☐ AM ☐ PM

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White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

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(585) 344-8410

Geneva
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Phelps, NY 14532
(315) 548-4049

12598

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/16/07	1508	
TRUCK # 38 6642 JV	TRAILER # ~~X~~ NA		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE [signature] PRINT NAME [illegible]

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

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White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

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P.O. Box 6418
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(585) 344-8410

Geneva
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Phelps, NY 14532
(315) 548-4049

12599

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/01/09		
TRUCK #	TRAILER #		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Neil Bailey PRINT NAME Neil Bailey

SPECIAL INSTRUCTIONS:

FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:

Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____

CONSIGNEE PRINT NAME _____

CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM _____ DATE _____

BY _____ TIME _____ ☐ AM ☐ PM

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White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12600

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/02/09	612	
TRUCK # 21283 PA	TRAILER # 192		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE [signature] PRINT NAME Craig LaBarge

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____ ☐ AM ☐ PM
BY _____ TIME _____

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White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

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Rochester
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Rush, NY 14543
(585) 344-8410

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1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12601

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/2/09	615	
TRUCK # 99718PA 624	TRAILER # 221		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE _____ PRINT NAME _____

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____ (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____ ☐ AM ☐ PM
BY _____ TIME _____

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White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

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(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12602

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/2/09	1618	
TRUCK # 58059 52 14	TRAILER # T 409		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Charley Buckles PRINT NAME Charley Buckles

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____ (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

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White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

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(315) 433-5115

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6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12603

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/2/09	626	
TRUCK # 46889 JE #32	TRAILER # 402		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Bill Kelly PRINT NAME Bill Kelly

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____ (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

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White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

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(315) 548-4049

12604

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/2/09	628	
TRUCK # 66425X 38	TRAILER # NA		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION		WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN**	
		WEIGHT OUT	
		BILLED WEIGHT	

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE [signature] PRINT NAME Mark T-Tan

SPECIAL INSTRUCTIONS:

FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:

Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____

CONSIGNEE PRINT NAME _____

CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM _____ DATE _____

BY _____ TIME _____ ☐ AM ☐ PM

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White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

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(315) 548-4049

12605

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/2/09	630
TRUCK # 32262 PA 135	TRAILER # 217	

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION		WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN**	
		WEIGHT OUT	
		BILLED WEIGHT	

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE [signature] PRINT NAME [signature]

SPECIAL INSTRUCTIONS:

FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:

Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____

CONSIGNEE PRINT NAME _____

CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM _____ DATE _____

BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12606

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/2/09	634	
TRUCK # 58089 J2 94	TRAILER # NA		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION		WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN**	
		WEIGHT OUT	
		BILLED WEIGHT	

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE [signature] PRINT NAME [signature]

SPECIAL INSTRUCTIONS:

FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:

Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____

CONSIGNEE PRINT NAME _____

CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM _____ DATE _____ ☐ AM

BY _____ TIME _____ ☐ PM

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Syracuse, NY 13217
(315) 433-5115

Rochester
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(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12607

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/2/09	690	
TRUCK # 72121 JTR 73	TRAILER # NA		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION		WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN**	
		WEIGHT OUT	
		BILLED WEIGHT	

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Daniel Case PRINT NAME David Case

SPECIAL INSTRUCTIONS:

FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:

Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____

CONSIGNEE PRINT NAME _____

CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM _____ DATE _____

BY _____ TIME _____ ☐ AM ☐ PM

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White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

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Syracuse, NY 13217
(315) 433-5115

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(315) 548-4049

12608

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/2/09	641	
TRUCK # S7899 JZ #97	TRAILER # NA		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION		WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN**	
		WEIGHT OUT	
		BILLED WEIGHT	

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Tom Tolle PRINT NAME Tom Tolle

SPECIAL INSTRUCTIONS:

FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:

Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____

CONSIGNEE PRINT NAME _____

CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM _____ DATE _____

BY _____ TIME _____ ☐ AM ☐ PM

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(315) 548-4049

12609

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/2/09	642	
TRUCK # 10170 PB 500	TRAILER # 223		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION		WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN**	
		WEIGHT OUT	
		BILLED WEIGHT	

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Aaron Mackay PRINT NAME AARON Mackay

SPECIAL INSTRUCTIONS:

FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:

Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____

CONSIGNEE PRINT NAME _____

CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM _____ DATE _____

BY _____ TIME _____ ☐ AM ☐ PM

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(315) 548-4049

12610

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/2/09	647	
TRUCK # 55921 PA 262	TRAILER # 158		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION		WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN**	
		WEIGHT OUT	
		BILLED WEIGHT	

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE [signature] PRINT NAME James Chapman

SPECIAL INSTRUCTIONS:

FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:

Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____

CONSIGNEE PRINT NAME _____

CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM _____ DATE _____

BY _____ TIME _____ ☐ AM ☐ PM

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White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

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Syracuse, NY 13217
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Rochester
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(585) 344-8410

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(315) 548-4049

12611

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/21/04	650	
TRUCK # 64340 PA 156	TRAILER # 211		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION		WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN**	
		WEIGHT OUT	
		BILLED WEIGHT	

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE _____ PRINT NAME _____

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

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White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

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(315) 548-4049

12612

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/2/09	701	
TRUCK # 253 77759 PA	TRAILER # 153		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION		WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN**	
		WEIGHT OUT	
		BILLED WEIGHT	

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE [signature] PRINT NAME [illegible]

SPECIAL INSTRUCTIONS:

FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:

Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____

CONSIGNEE PRINT NAME _____

CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM _____ DATE _____

BY _____ TIME _____ ☐ AM ☐ PM

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White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

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Syracuse, NY 13217
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1210 Gifford Road
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(315) 548-4049

12613

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/2/09	809	
TRUCK # 116 37283 PA	TRAILER # 7A402		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE William Vincent PRINT NAME William Vincent

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____ (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

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White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12614

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/21/09	810	
TRUCK # 3226 OPA 138	TRAILER # 207		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE [signature] PRINT NAME [signature]

SPECIAL INSTRUCTIONS:

FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:

Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____

CONSIGNEE PRINT NAME _____

CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM _____ DATE _____

BY _____ TIME _____ ☐ AM ☐ PM

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White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

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(315) 548-4049

12615

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/2/09	615	
TRUCK # 35109 ST 19	TRAILER # T 414		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Neil Bailey PRINT NAME Neil Bailey

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____ (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

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White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

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(315) 548-4049

12616

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/2/09	841	
TRUCK # 265 21293 PA	TRAILER # 152		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Craig LaBarge PRINT NAME Craig LaBarge

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____ (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

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Phelps, NY 14532
(315) 548-4049

12617

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/2/09	843	
TRUCK # 14 58059 J2	TRAILER # T409		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION		WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN**	
		WEIGHT OUT	
		BILLED WEIGHT	

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Charley Burbank PRINT NAME Charley Burbank

SPECIAL INSTRUCTIONS:

FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:

Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____

CONSIGNEE PRINT NAME _____

CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM _____ DATE _____

BY _____ TIME _____ ☐ AM ☐ PM

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12618

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/2/09	846	
TRUCK # 268 11139TR	TRAILER # 162		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Glen Sauerhafer PRINT NAME Glen Sauerhafer

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____ (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

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White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

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Phelps, NY 14532
(315) 548-4049

12619

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/2/09	847	
TRUCK # 624 99718PA	TRAILER # 221		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION		WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN**	
		WEIGHT OUT	
		BILLED WEIGHT	

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE [signature] PRINT NAME Joseph Davey

SPECIAL INSTRUCTIONS:

FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:

Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____

CONSIGNEE PRINT NAME _____

CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM _____ DATE _____

BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12620

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/21/09	856	
TRUCK # 3Z 46889 5E	TRAILER # T402		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE _____ PRINT NAME _____

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12621

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/2/09	859	
TRUCK # 38 66642 JX	TRAILER # NA		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE [signature] PRINT NAME Mark Fagan

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12622

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/2/09	900	
TRUCK # 94 58089 JZ	TRAILER # NA		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE _____ PRINT NAME _____

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm **Saturday 7:00 am to Noon**

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12623

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/2/09	902	
TRUCK # 135 32262 PA	TRAILER # 217		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE [signature] PRINT NAME [signature]

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

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P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12624

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/2/09	903	
TRUCK # 73 72121JR	TRAILER # NA		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION		WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN**	
		WEIGHT OUT	
		BILLED WEIGHT	

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE David Case PRINT NAME David CASE

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____ (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12625

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/2/09	906	
TRUCK # 97 570992	TRAILER # D4		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION		WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN**	
		WEIGHT OUT	
		BILLED WEIGHT	

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Tom Felice PRINT NAME Tom Felice

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
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(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12626

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/2/09	9 12	
TRUCK # 262 55921 PA	TRAILER # 158		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION		WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN**	
		WEIGHT OUT	
		BILLED WEIGHT	

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE [signature] PRINT NAME [signature]

SPECIAL INSTRUCTIONS:

FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:

Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____

CONSIGNEE PRINT NAME _____

CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM _____ DATE _____

BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12627

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/2/09	9 15	
TRUCK # 500 10170 PB	TRAILER # 223		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Aaron Muckey PRINT NAME AARON MUCKEY

SPECIAL INSTRUCTIONS:

FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:

Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____

CONSIGNEE PRINT NAME _____

CONSIGNEE SIGN HERE _____ (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM _____ DATE _____

BY _____ TIME _____ ☐ AM ☐ PM

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White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12628

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/2/09	917	
TRUCK # 156 64340 PA	TRAILER # 211		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE _____ PRINT NAME Jimmy Rusin 1257

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____ (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
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Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
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Phelps, NY 14532
(315) 548-4049

12629

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/2/09	920	
TRUCK # 71 90789 JD	TRAILER # NA		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION		WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN**	
		WEIGHT OUT	
		BILLED WEIGHT	

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Gene Miller PRINT NAME Gene Miller

SPECIAL INSTRUCTIONS:

FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:

Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____

CONSIGNEE PRINT NAME _____

CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM _____ DATE _____

BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
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Syracuse, NY 13217
(315) 433-5115

Rochester
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(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12630

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/2/09		
TRUCK # 29	TRAILER #		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION		WEIGHT
1	~~Truckload Soil~~ box 3225 * Approval # ~~09-073~~ Aluminum Scrap	WEIGHT IN	
		WEIGHT OUT	
		BILLED WEIGHT	

SHIPPER SIGNATURE Steve Absolom PRINT NAME Steve Absolom

DRIVER SIGNATURE _____ PRINT NAME _____

SPECIAL INSTRUCTIONS:

FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:

~~Seneca Meadows Landfill- Rte #14 North~~ Luthmann Metal Scrap

FOR APPROVAL: _____

CONSIGNEE PRINT NAME _____

CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM _____ DATE _____

BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12631

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/21/09	1220	
TRUCK # 97 57399 JZ	TRAILER # NA		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Tom Felice PRINT NAME Tom Felice

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____

CONSIGNEE PRINT NAME _____

CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM _____ DATE _____

BY _____ TIME _____ ☐ AM ☐ PM

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White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

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Syracuse, NY 13217
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Rochester
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(585) 344-8410

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(315) 548-4049

12632

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/2/09	1222	
TRUCK # 32 46889EJ	TRAILER # T402		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE _____ PRINT NAME _____

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

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White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

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(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12633

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/2/09	1225	
TRUCK # 19 35018 JT	TRAILER # T414		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Neil Bailey PRINT NAME Neil Bailey

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12634

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/2/04	1227	
TRUCK # 14 58059 JZ	TRAILER # T409		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Charley Bucklew PRINT NAME Charley Bucklew

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12635

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/2/09	1229	
TRUCK # 38 66642 JX	TRAILER # NA		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE _____ PRINT NAME _____

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12636

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/2/09	1315	
TRUCK # 29	TRAILER #		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION		WEIGHT
1	**Truckload Soil** *** Approval # 09-073** Scrap Alum to Luffin	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**	

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE _____ PRINT NAME _____

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12637

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/2/09	1430	
TRUCK # 29	TRAILER #		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION		WEIGHT
1	**Truckload Soil** *** Approval # 09-073** Luftman	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**	

SHIPPER SIGNATURE _____ PRINT NAME **Steve Absolom**

DRIVER SIGNATURE _____ PRINT NAME _____

SPECIAL INSTRUCTIONS:

FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:

Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____

CONSIGNEE PRINT NAME _____

CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM _____ DATE _____

BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

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P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
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(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12639

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/8/09	0103	
TRUCK # 64 73066 JU	TRAILER # T416		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Gene J Fletcher PRINT NAME Gene Fletcher

SPECIAL INSTRUCTIONS:

FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:

Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____

CONSIGNEE PRINT NAME _____

CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM _____ DATE _____

BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12640

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/8/09	0915	
TRUCK # 265 21283 PA	TRAILER # 152		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION		WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN**	
		WEIGHT OUT	
		BILLED WEIGHT	

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE C LaBarge PRINT NAME Craig LaBarge

SPECIAL INSTRUCTIONS:

FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:

Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____

CONSIGNEE PRINT NAME _____

CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION — FIRM _____ DATE _____ ☐ AM ☐ PM
BY _____ TIME _____

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12641

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/8/09	0917	
TRUCK # 138 32260 PA	TRAILER # 207		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION		WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN**	
		WEIGHT OUT	
		BILLED WEIGHT	

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE [signature] PRINT NAME [signature]

SPECIAL INSTRUCTIONS:

FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:

Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____

CONSIGNEE PRINT NAME _____

CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM _____ DATE _____ ☐ AM ☐ PM

BY _____ TIME _____

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12642

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/08/09	0719	
TRUCK # 16 35060 JT	TRAILER # T411		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE [signature] PRINT NAME [illegible]

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____ (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12643

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/8/09	0948	
TRUCK # 645 13608 PB	TRAILER # 220		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Jon W. Davis PRINT NAME JON DAVIS

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____

CONSIGNEE PRINT NAME _____

CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM _____ DATE _____ ☐ AM ☐ PM

BY _____ TIME _____

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

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P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12644

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/8/09	1135	
TRUCK # 265 21783 PA	TRAILER # 152		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE [signature] PRINT NAME [signature]

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____ (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

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(585) 344-8410

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Phelps, NY 14532
(315) 548-4049

12645

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/8/09	1137	
TRUCK # 64	TRAILER # T416		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Gene Fletcher PRINT NAME Geo. Fletcher

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____

CONSIGNEE PRINT NAME _____

CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM _____ DATE _____

BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

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P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
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(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12646

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/8/09	1140	
TRUCK # 138 32260 PA	TRAILER # 207		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE [signature] PRINT NAME George Dawson

SPECIAL INSTRUCTIONS:

FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:

Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____

CONSIGNEE PRINT NAME _____

CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM _____ DATE _____

BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

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Phelps, NY 14532
(315) 548-4049

12647

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/8/09	1145	
TRUCK # 16 35060 J7	TRAILER # T 411		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION		WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN**	
		WEIGHT OUT	
		BILLED WEIGHT	

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Richard Kwiatkowski PRINT NAME Richard Kwiatkowski

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____ (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

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Rochester
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(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12548

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/8/09	1150	
TRUCK # 645 13608 PB	TRAILER # 220		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE [signature] PRINT NAME JON DAVIS

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____ (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12649

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/8/09	1645	
TRUCK # 645 13608 PA	TRAILER # 220		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Jon. D PRINT NAME JON DAVIS

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____ (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

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White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12650

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/9/09	0700	
TRUCK # 58057 P1 14	TRAILER # 1409		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Charley Buckalew PRINT NAME Charley Buckalew

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12651

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/9/01	0902	
TRUCK # 32 46807 JE	TRAILER # T402		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE [signature] PRINT NAME [signature]

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

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White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12652

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/9/09	0930	
TRUCK # 14 58057 J2	TRAILER # T409		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION		WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN**	
		WEIGHT OUT	
		BILLED WEIGHT	

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Charley Burbeck PRINT NAME Charley Burbeck

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12659

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/9/09	935	
TRUCK # 32 46889 JE	TRAILER # T407		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE _____ PRINT NAME **Steve Absolom**

DRIVER SIGNATURE _____ PRINT NAME _____

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____ (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12660

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/14/09	1600	
TRUCK #	TRAILER #		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION		WEIGHT
1	**Truckload Soil** **Approval # 09-073** Lufthmann Soap to yar	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**	

SHIPPER SIGNATURE _____ PRINT NAME **Steve Absolom**

DRIVER SIGNATURE _____ PRINT NAME _____

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12661

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	Oct 15	600	
TRUCK # 14	TRAILER # 409		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Charley Buckley PRINT NAME Charley Buckley

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

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White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12662

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/15/09	605	
TRUCK # 46899 SE 32	TRAILER # T402		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE _____ PRINT NAME _____

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
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Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12663

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/15/09	608	
TRUCK # 35018 ST #19	TRAILER # 414		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Neil Bailey PRINT NAME Neil Bailey

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____

CONSIGNEE PRINT NAME _____

CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM _____ DATE _____ ☐ AM ☐ PM

BY _____ TIME _____

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White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12664

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10-15-19	6:30	
TRUCK # 94	TRAILER #		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION		WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN**	
		WEIGHT OUT	
		BILLED WEIGHT	

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Robert H Hawe Jr PRINT NAME Robert H Hawe Jr

SPECIAL INSTRUCTIONS:

FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:

Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____

CONSIGNEE PRINT NAME _____

CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM _____ DATE _____ ☐ AM

BY _____ TIME _____ ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

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Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12665

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/15/09	6:30	
TRUCK # 73 RICCELLI	TRAILER #		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION		WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN**	
		WEIGHT OUT	
		BILLED WEIGHT	

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE David Case PRINT NAME DAVID CASE

SPECIAL INSTRUCTIONS:

FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:

Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____

CONSIGNEE PRINT NAME _____

CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM _____ DATE _____

BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12666

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/15/09	6 35	
TRUCK # 38	TRAILER #		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Mark Foster PRINT NAME Mark Foster

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

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White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

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Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12667

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/15/09	7:10 a.m.	
TRUCK # 56	TRAILER #		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Richard Cooper PRINT NAME Richard Cooper

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

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White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12668

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/15/09	7:11	
TRUCK # 95	TRAILER #		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Michael Bove PRINT NAME Michael Bove

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____ (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12669

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10-15-09	7 30	
TRUCK # 97	TRAILER #		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Tom Felice PRINT NAME Tom Felice

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12670

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10-15-09	8:35	
TRUCK # 14	TRAILER # 409		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Charley Bucklew PRINT NAME Charley Bucklew

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12671

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	6 15 09	8 30	
TRUCK # 52	TRAILER # 112		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE [signature] PRINT NAME [signature]

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12672

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/15/09	9:06	
TRUCK # 19	TRAILER # 414		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Neil Bailey PRINT NAME Neil Bailey

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12673

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/15/09	7:15	
TRUCK # 151	TRAILER #		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION		WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN**	
		WEIGHT OUT	
		BILLED WEIGHT	

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE [signature] PRINT NAME [illegible]

SPECIAL INSTRUCTIONS:

FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:

Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____

CONSIGNEE PRINT NAME _____

CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM _____ DATE _____

BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12674

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/15/08	9:25	
TRUCK # #73	TRAILER #		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE David Case PRINT NAME DAVID CASE

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____ (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12675

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/15/09	9:26	
TRUCK # 38	TRAILER #		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION		WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN**	
		WEIGHT OUT	
		BILLED WEIGHT	

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE [signature] PRINT NAME [illegible]

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____ (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12676

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/15/09	945	
TRUCK # 97	TRAILER #		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Tom Felice PRINT NAME Tom Felice

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____ (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12677

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/15/09	9:45	
TRUCK # 56	TRAILER #		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Richard Cooper PRINT NAME Richard Cooper

SPECIAL INSTRUCTIONS:

FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:

Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____

CONSIGNEE PRINT NAME _____

CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM _____ DATE _____

BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12678

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/15/09	9:46	
TRUCK # 95	TRAILER #		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION		WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN**	
		WEIGHT OUT	
		BILLED WEIGHT	

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE _____ PRINT NAME _____

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
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(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12679

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/15/09	10:49	
TRUCK # 52	TRAILER # 702		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE [signature] PRINT NAME [illegible]

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

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(315) 433-5115

Rochester
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(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12680

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/15/09	1053	
TRUCK # 14	TRAILER # 409		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Charley Buckley PRINT NAME Charley Buckley

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____ (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

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Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12681

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/15/09	10:58	
TRUCK # 19	TRAILER # 414		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Neil O Bailey PRINT NAME Neil Bailey

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12682

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/15/09	11:12	
TRUCK # 94	TRAILER #		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE _____ PRINT NAME **Steve Absolom**

DRIVER SIGNATURE _____ PRINT NAME _____

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

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White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12683

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/15/09	11:17	
TRUCK # 73	TRAILER #		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION		WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN**	
		WEIGHT OUT	
		BILLED WEIGHT	

SHIPPER SIGNATURE _____ PRINT NAME **Steve Absolom**

DRIVER SIGNATURE David Case PRINT NAME DAVID CASE

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

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(585) 344-8410

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Phelps, NY 14532
(315) 548-4049

12684

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/15/09	11:21	
TRUCK # 38	TRAILER #		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE _____ PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Mark Eaton PRINT NAME Mark Eaton

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

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(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12685

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/15/09	11:24	
TRUCK # 97	TRAILER #		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE _____ PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Tom Felice PRINT NAME Tom Felice

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____ (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

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(315) 548-4049

12686

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/15/09	12.03	
TRUCK # 56	TRAILER #		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE _____ PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Richard Cooper PRINT NAME Richard Cooper

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____ (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

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(315) 548-4049

12687

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/5/09	12:05	
TRUCK # 95	TRAILER #		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION		WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN**	
		WEIGHT OUT	
		BILLED WEIGHT	

SHIPPER SIGNATURE _____ PRINT NAME **Steve Absolom**

DRIVER SIGNATURE _____ PRINT NAME _____

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse	Rochester	Geneva
P.O. Box 6418	6800 W. Henrietta Road	1210 Gifford Road
Syracuse, NY 13217	Rush, NY 14543	Phelps, NY 14532
(315) 433-5115	(585) 344-8410	(315) 548-4049

12688

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/15/09	12:26	
TRUCK # 32	TRAILER # 102		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION		WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN**	
		WEIGHT OUT	
		BILLED WEIGHT	

SHIPPER SIGNATURE _____ PRINT NAME **Steve Absolom**

DRIVER SIGNATURE [signature] PRINT NAME [signature]

SPECIAL INSTRUCTIONS:

FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:

Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____

CONSIGNEE PRINT NAME _____

CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION — FIRM _____ DATE _____ ☐ AM ☐ PM — BY _____ TIME _____

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

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(315) 548-4049

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NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/15/09	12:41	
TRUCK # 14	TRAILER # 409		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION		WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN**	
		WEIGHT OUT	
		BILLED WEIGHT	

SHIPPER SIGNATURE _____ PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Charley Buckley PRINT NAME Charley Buckley

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

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(315) 548-4049

12690

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/15/09	12:50	
TRUCK # 19	TRAILER # 414		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE _____ PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Neil Bailey PRINT NAME Neil Bailey

SPECIAL INSTRUCTIONS:

FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:

Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____

CONSIGNEE PRINT NAME _____

CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM _____ DATE _____

BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

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(315) 548-4049

12691

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/15/09	12:56	
TRUCK # 73	TRAILER #		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE _____ PRINT NAME **Steve Absolom**

DRIVER SIGNATURE David Case PRINT NAME DAVID CASE

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

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(315) 548-4049

12692

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	12/15/09	12:58	
TRUCK # 38	TRAILER #		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE _____ PRINT NAME **Steve Absolom**

DRIVER SIGNATURE _____ PRINT NAME _____

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

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(315) 548-4049

12693

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/15/09	~~12:~~ 1:12	
TRUCK # 97	TRAILER #		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE _____ PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Tom Tedesco PRINT NAME Tantelico

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

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(315) 548-4049

12694

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/15/09	2:15	
TRUCK # 46	TRAILER #		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE _____ PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Richard Cooper PRINT NAME Richard Cooper

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

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NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/15/09		
TRUCK #	TRAILER #		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION		WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**	

SHIPPER SIGNATURE _____ PRINT NAME **Steve Absolom**

DRIVER SIGNATURE _____ PRINT NAME _____

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

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NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/1-/17	2 16	
TRUCK # 15	TRAILER #		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION	WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN** **WEIGHT OUT** **BILLED WEIGHT**

SHIPPER SIGNATURE _____ PRINT NAME **Steve Absolom**

DRIVER SIGNATURE _____ PRINT NAME _____

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

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12697

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/25/09	654	
TRUCK # 7A402	TRAILER #		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION		WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN**	
		WEIGHT OUT	
		BILLED WEIGHT	

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE [signature] PRINT NAME Gene Miller

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____ (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____ ☐ AM ☐ PM
BY _____ TIME _____

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

RICCELLI ENTERPRISES INC.

Syracuse
P.O. Box 6418
Syracuse, NY 13217
(315) 433-5115

Rochester
6800 W. Henrietta Road
Rush, NY 14543
(585) 344-8410

Geneva
1210 Gifford Road
Phelps, NY 14532
(315) 548-4049

12698

NON-HAZARDOUS SOLID WASTE MANIFEST

TRANSPORTER	DATE	TIME IN / OUT	
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217	10/25/04	845	
TRUCK # 71	TRAILER #		

CONSIGNEE	SHIPPER
RICCELLI ENTERPRISES INC. P.O. BOX 6418 SYRACUSE, NY 13217 PHONE # (315) 433-5115	SENECA ARMY DEPOT ACTIVITY 5786 STATE ROUTE 96 ROMULUS, NY 14541

NO. PIECES	ARTICLES OR DESCRIPTION		WEIGHT
1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT IN**	
		WEIGHT OUT	
		BILLED WEIGHT	

SHIPPER SIGNATURE Steve Absolm PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Gene Miller PRINT NAME Gene Miller

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____

CONSIGNEE PRINT NAME _____

CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM _____ DATE _____

BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

Parems

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1814447
Date: 09/30/2009
Time: 08:04:16 - 08:26:25

Customer: 15RIC / RICCELLI ENTERPRI

Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12502

Origin: 116 / SENECA
Truck: RIC32
Comment:

Gross: 104380LBS
Tare: 38720LBS
Net: 65660LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	32.8300 Tons

Weighmaster: ANN 450072

Driver:

	* Approval # 09-073		38720
		BILLED WEIGHT	65660
		#1814447	32.83 Ton

SHIPPER SIGNATURE Steve Absolom PRINT NAME Steve Absolom

DRIVER SIGNATURE Bill LeVesque PRINT NAME Bill LeVesque

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL:
CONSIGNEE PRINT NAME
CONSIGNEE SIGN HERE
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM DATE 9/30/09
BY TIME
☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1814451
Date: 09/30/2009
Time: 08:06:26 - 08:30:46

Customer: 15RIC / RICCELLI ENTERPRI

Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07

Cust Ref: 12503

Origin: 116 / SENECA
Truck: RIC14
Comment:

Gross: 112320LBS
Tare: 39580LBS
Net: 72740LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	36.3700 Tons

Charley

	* Approval # 09-073	BILLED WEIGHT	
		1814451	36.37

SHIPPER SIGNATURE Steve Absolom PRINT NAME Steve Absolom

DRIVER SIGNATURE Charley Buckalew PRINT NAME Charley Buckalew

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL:
CONSIGNEE PRINT NAME
CONSIGNEE SIGN HERE (NO INITIALS) 9/30/09

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM DATE
BY TIME
☐ AM ☑ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

1346003

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1814498
Date: 09/30/2009
Time: 08:36:49 - 09:07:36

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12504
Gross: 138040LBS
Tare: 41620LBS
Net: 96420LBS

Origin: 116 / SENECA
Truck: RIC624
Comment:

Wastes & Services	Quantity
BC501 / B/R-CONTAM SOIL	48.2100 Tons

Weighmaster: ANN 450072

Driver:

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1814488
Date: 09/30/2009
Time: 08:35:45 - 08:57:45

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12505

Origin: 116 / SENECA
Truck: RIC265
Comment:

Gross: 113940LBS
Tare: 35620LBS
Net: 78320LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	39.1600 Tons

Weighmaster: ANN 450072

Driver:

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1814485
Date: 09/30/2009
Time: 08:37:58 - 08:55:44

Customer: 15RIC / RICCELLI ENTERPRI

Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12506

Origin: 116 / SENECA
Truck: RIC38
Comment:

Gross: 72320LBS
Tare: 28660LBS
Net: 43660LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	21.8300 Tons

Weighmaster: ANN 45007E

Driver:

	* Approval # 09-073	BILLED WEIGHT	43660
			21.83 TON

SHIPPER SIGNATURE Steve Absolom PRINT NAME Steve Absolom

DRIVER SIGNATURE Mark Fenton PRINT NAME Mark Fenton

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL:
CONSIGNEE PRINT NAME
CONSIGNEE SIGN HERE
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM DATE
BY TIME
☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1814487
Date: 09/30/2009
Time: 08:38:45 - 08:56:43

Customer: 15RIC / RICCELLI ENTERPRI

Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12507

Origin: 116 / SENECA
Truck: RIC97
Comment:

Gross: 68040LBS
Tare: 28060LBS
Net: 39980LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	19.9900 Tons

	* Approval # 09-073	WEIGHT OUT	
		BILLED WEIGHT	

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Tom Felice PRINT NAME Tom Felice

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL:
CONSIGNEE PRINT NAME
CONSIGNEE SIGN HERE (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM DATE 9/30/09
BY TIME ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli Yellow Copy- Driver Pink Copy - Land Fill Gold Copy- Shipper

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1814506
Date: 09/30/2009
Time: 08:39:47 - 09:14:37

Customer: 15RIC / RICCELLI ENTERPRI

Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07

Cust Ref: 12508

Origin: 116 / SENECA
Truck: RIC19
Comment:

Gross: 111320LBS
Tare: 40800LBS
Net: 70520LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	35.2600 Tons

Weighmaster: ANN 450072

Driver: Neil

	* Approval # 09-073	BILLED WEIGHT	35.26
	#1814506		

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Neil Bailey PRINT NAME Neil Bailey Jr

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____ 9/30/09
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli Yellow Copy- Driver Pink Copy - Land Fill Gold Copy- Shipper

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1814516
Date: 09/30/2009
Time: 09:02:51 - 09:25:09

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12509
Origin: 116 / SENECA
Truck: RIC156
Comment:
Gross: 145460LBS
Tare: 42740LBS
Net: 102720LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	51.3600 Tons

Weighmaster: ANN 450072

Driver: [signature] 352

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1814569
Date: 09/30/2009
Time: 10:01:13 - 10:37:54

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12510
Gross: 127280LBS
Tare: 44400LBS
Net: 82880LBS
Origin: 116 / SENECA
Truck: RIC78
Comment:

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	41.4400 Tons

Weighmaster: ANN 450072
Driver: Harris 554

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1814567
Date: 09/30/2009
Time: 10:02:02 - 10:35:45

Customer: 15RIC / RICCELLI ENTERPRI

Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12511

Origin: 116 / SENECA
Truck: RIC309
Comment:

Gross: 129960LBS
Tare: 44440LBS
Net: 85520LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	42.7600 Tons

Weighmaster: ANN 450072

Driver: [signature]

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1814564
Date: 09/30/2009
Time: 10:03:00 - 10:31:56

Customer: 15RIC / RICCELLI ENTERPRI

Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12512

Origin: 116 / SENECA
Truck: RIC32
Comment:

Gross: 111400LBS
Tare: 38700LBS
Net: 72700LBS

Wastes & Services	Quantity
BCS01 / D/R-CONTAM SOIL	36.3500 Tons

1	Truckload Soil * Approval # 09-073	WEIGHT OUT	34700
		BILLED WEIGHT	72700
	#1814564		36.35 TON

SHIPPER SIGNATURE Steve Absolom PRINT NAME Steve Absolom

DRIVER SIGNATURE [signature] PRINT NAME [signature]

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL:
CONSIGNEE PRINT NAME
CONSIGNEE SIGN HERE (NO INITIALS) 9/30/09

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM DATE
BY TIME ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli Yellow Copy- Driver Pink Copy - Land Fill Gold Copy- Shipper

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1814570
Date: 09/30/2009
Time: 10:07:19 - 10:39:17

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12513
Origin: 116 / SENECA
Truck: RIC14
Comment:
Gross: 108260LBS
Tare: 39600LBS
Net: 68660LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	34.3300 Tons

Weighmaster: ANN 450072
Driver:

* Approval # 09-073

BILLED WEIGHT

1814570 34.33

SHIPPER SIGNATURE Steve Absolom PRINT NAME Steve Absolom

DRIVER SIGNATURE Charley Buckalew PRINT NAME Charley Buckalew

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL:
CONSIGNEE PRINT NAME
CONSIGNEE SIGN HERE (NO INITIALS)
RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM DATE 9/30/09
BY TIME ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli Yellow Copy- Driver Pink Copy - Land Fill Gold Copy- Shipper

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1814585
Date: 09/30/2009
Time: 10:34:53 - 10:49:51

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12514

Origin: 116 / SENECA
Truck: RIC38
Comment:

Gross: 74920LBS
Tare: 28680LBS
Net: 46240LBS

Wastes & Services	Quantity
BC601 / B/R-CONTAM SOIL	23.1200 Tons

	* Approval # 09-073	WEIGHT OUT	28 680
		BILLED WEIGHT	46240
			23.12 Ton

SHIPPER SIGNATURE Steve Absolom PRINT NAME Steve Absolom

DRIVER SIGNATURE Mark Fuoco PRINT NAME Mark Fuoco

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL:
CONSIGNEE PRINT NAME
CONSIGNEE SIGN HERE (NO INITIALS) 9/30/09

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM DATE
BY TIME ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli Yellow Copy- Driver Pink Copy - Land Fill Gold Copy- Shipper

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1814600
Date: 09/30/2009
Time: 10:38:33 - 11:03:23

Customer: 15RIC / RICCELLI ENTERPRI

Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12515

Origin: 116 / SENECA
Truck: RIC97
Comment:

Gross: 67680LBS
Tare: 28260LBS
Net: 39420LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	19.7100 Tons

Weighmaster: ANN 450072

Driver: _____

* Approval # 09-073

		BILLED WEIGHT	

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Tom Felice PRINT NAME Tom Felice

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____ 9/30/09
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli Yellow Copy- Driver Pink Copy - Land Fill Gold Copy- Shipper

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1814605
Date: 09/30/2009
Time: 10:44:45 - 11:08:15

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12516

Origin: 116 / SENECA
Truck: RIC265
Comment:

Gross: 100600LBS
Tare: 35780LBS
Net: 64820LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	32.4100 Tons

Weighmaster: ANN 450072

Driver: C A Boyle

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1814610
Date: 09/30/2009
Time: 10:46:18 - 11:12:39

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12517
Gross: 118620LBS
Tare: 41700LBS
Net: 76920LBS
Origin: 116 / SENECA
Truck: RIC624
Comment:

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	38.4600 Tons

Weighmaster: ANN 450072
Driver:

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1814613
Date: 09/30/2009
Time: 10:52:06 - 11:16:04

Customer: 15RIC / RICCELLI ENTERPRI

Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12518

Origin: 116 / SENECA
Truck: RIC19
Comment:

Gross: 116120LBS
Tare: 40220LBS
Net: 75900LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	37.9500 Tons

17.0

	Trucked Soil	WEIGHT OUT	
	* Approval # 09-073	BILLED WEIGHT	
		1814613	37.95

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Neil Bailey PRINT NAME Neil Bailey

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE 9/30/09
BY _____ TIME 2 ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli | Yellow Copy- Driver | Pink Copy - Land Fill | Gold Copy- Shipper

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1814617
Date: 09/30/2009
Time: 11:05:24 - 11:20:48

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12519
Gross: 128740LBS
Origin: 116 / SENECA
Tare: 42540LBS
Truck: RIC156
Net: 86200LBS
Comment:

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	43.1000 Tons

1332

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1814662
Date: 09/30/2009
Time: 12:00:39 - 12:29:57

Customer: 15RIC / RICCELLI ENTERPRI

Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12520

Origin: 116 / SENECA
Truck: RIC14
Comment:

Gross: 109540LBS
Tare: 39260LBS
Net: 70280LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	35.1400 Tons

Weighmaster: RUSS 450014

Driver:

*** Approval # 09-073**

BILLED WEIGHT

1814662 35.14

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Charley Buckalew PRINT NAME Charley Buckalew

SPECIAL INSTRUCTIONS:

FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:

Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL:

CONSIGNEE PRINT NAME

CONSIGNEE SIGN HERE (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM DATE 9-30-09

BY TIME ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli Yellow Copy- Driver Pink Copy - Land Fill Gold Copy- Shipper

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1814680
Date: 09/30/2009
Time: 12:20:34 - 12:45:04

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12521

Origin: 116 / SENECA
Truck: RIC309
Comment:

Gross: 117080LBS
Tare: 44160LBS
Net: 72920LBS

Wastes & Services	Quantity
BC501 / B/R-CONTAM SOIL	36.4600 Tons

Weighmaster: RUSS 450014

Driver: Russ

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1814688
Date: 09/30/2009
Time: 12:21:20 - 12:54:51

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12522

Origin: 116 / SENECA
Truck: RIC78
Comment:

Gross: 124060LBS
Tare: 44160LBS
Net: 79900LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	39.9500 Tons

Weighmaster: RUSS 450014

Driver: Howie 554

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1814670
Date: 09/30/2009
Time: 12:23:48 - 12:36:54

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12523
Origin: 116 / SENECA
Truck: RIC38
Comment:
Gross: 76100LBS
Tare: 28500LBS
Net: 47600LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	23.8000 Tons

	* Approval # 09-073	WEIGHT OUT	28500
		BILLED WEIGHT	47600
			23.80 Tow

SHIPPER SIGNATURE Steve Absolom PRINT NAME Steve Absolom

DRIVER SIGNATURE Mark Fenton PRINT NAME Mark Fenton

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL:
CONSIGNEE PRINT NAME
CONSIGNEE SIGN HERE (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM DATE 09-30-09
BY TIME ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli Yellow Copy- Driver Pink Copy - Land Fill Gold Copy- Shipper

Seneca Meadows, Inc.
1786 Balcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1814687
Date: 09/30/2009
Time: 12:31:54 - 12:53:33

Customer: 15RIC / RICCELLI ENTERPRI

Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07

Origin: 116 / SENECA
Truck: RIC97
Comment:

Cust Ref: 12524

Gross: 69560LBS
Tare: 28080LBS
Net: 41480LBS

Wastes & Services	Quantity
BC501 / B/R-CONTAM SOIL	20.7400 Tons

Weighmaster: RUSS 450014

Driver: _____

	* Approval # 09-073	BILLED WEIGHT	

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Tom Fel PRINT NAME Tom Fel

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____ (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE 09-30-09
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1814699
Date: 09/30/2009
Time: 12:38:00 - 13:05:51

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12525
Gross: 128760LBS
Tare: 41480LBS
Net: 87280LBS
Origin: 116 / SENECA
Truck: RIC624
Comment:

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	43.6400 Tons

Weighmaster: RUSS 450014

Driver:

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1814706
Date: 09/30/2009
Time: 12:45:15 - 13:11:55

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12526

Origin: 116 / SENECA
Truck: RIC19
Comment:

Gross: 104180LBS
Tare: 39900LBS
Net: 64280LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	32.1400 Tons

1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT OUT**	
		BILLED WEIGHT	
		1814706	32.14

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Neil Bailey PRINT NAME Neil Bailey

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE 09-30-09
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1814708
Date: 09/30/2009
Time: 12:50:59 - 13:14:08

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12527

Origin: 116 / SENECA
Truck: RIC156
Comment:

Gross: 127120LBS
Tare: 42260LBS
Net: 84860LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	42.4300 Tons

Weighmaster: RUSS 450014

Driver: 1352

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1814712
Date: 09/30/2009
Time: 12:52:34 - 13:18:57

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12528
Gross: 114960LBS
Origin: 116 / SENECA
Tare: 35440LBS
Truck: RIC265
Net: 79520LBS
Comment:

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	39.7600 Tons

Weighmaster: RICC 459814
Drivers:

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1814744
Date: 09/30/2009
Time: 13:17:56 - 13:47:21

Customer: 15RIC / RICCELLI ENTERPRI

Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12529

Origin: 116 / SENECA
Truck: RIC32
Comment:

Gross: 107280LBS
Tare: 38560LBS
Net: 68720LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	34.3600 Tons

	* Approval # 09-073	WEIGHT OUT
		BILLED WEIGHT 68720
		#1814744 34.36TON

SHIPPER SIGNATURE Steve Absolom PRINT NAME Steve Absolom

DRIVER SIGNATURE [signature] PRINT NAME [signature]

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____ (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE 9/30/09
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli Yellow Copy- Driver Pink Copy - Land Fill Gold Copy- Shipper

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1814785
Date: 09/30/2009
Time: 13:50:53 - 14:22:58

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profiles: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12530

Origin: 116 / SENECA
Truck: RIC14
Comment:

Gross: 108760LBS
Tare: 38800LBS
Net: 69960LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	34.9800 Tons

Weighmaster: ANN 450072
Driver: _____

Approval # 09-073

		BILLED WEIGHT	
		1814785	34.98

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Chadey Buckalew PRINT NAME Chadey Buckalew

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____ (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE 9/30
BY _____ TIME ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli Yellow Copy- Driver Pink Copy - Land Fill Gold Copy- Shipper

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1814789
Date: 09/30/2009
Time: 14:00:31 - 14:26:20

Customer: 15RIC / RICCELLI ENTERPRI

Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12531

Origin: 116 / SENECA
Truck: RIC38
Comment:

Gross: 68240LBS
Tare: 28700LBS
Net: 39540LBS

Wastes & Services	Quantity
BC501 / B/R-CONTAM SOIL	19.7700 Tons

Weighmaster: ANN 450072

Driver:

* Approval # 09-073

BILLED WEIGHT 39540 / 19.77Ton

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE [signature] PRINT NAME Mark Fenton

SPECIAL INSTRUCTIONS:

FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:

Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____

CONSIGNEE PRINT NAME _____

CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM _____ DATE 09-30-09

BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli Yellow Copy- Driver Pink Copy - Land Fill Gold Copy- Shipper

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1814814
Date: 09/30/2009
Time: 14:25:46 - 14:46:28

Customer: 15RIC / RICCELLI ENTERPRI

Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12532

Origin: 116 / SENECA
Truck: RIC97
Comment:

Gross: 64700LBS
Tare: 28080LBS
Net: 36620LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	18.3100 Tons

1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT OUT** **BILLED WEIGHT**	

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Tom Felice PRINT NAME Tom Felice

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE (NO INITIALS) _____

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE 9/30/09
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli Yellow Copy- Driver Pink Copy - Land Fill Gold Copy- Shipper

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1814828
Date: 09/30/2009
Time: 14:36:21 - 14:54:04

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12533
Gross: 126880LBS
Tare: 41600LBS
Net: 85280LBS
Origin: 116 / SENECA
Truck: RIC624
Comment:

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	42.6400 Tons

Weighmaster: ANN 450072

Driver:

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1814858
Date: 09/30/2009
Time: 14:45:06 - 15:26:20

Customer: 15RIC / RICCELLI ENTERPRI

Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07

Cust Ref: 12534

Origin: 116 / SENECA
Truck: RIC309
Comment:

Gross: 119080LBS
Tare: 44400LBS
Net: 74680LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	37.3400 Tons

Weighmaster: ANN 450072

Driver: [signature]

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1814872
Date: 09/30/2009
Time: 14:45:52 -- 15:36:20

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12535

Origin: 116 / SENECA
Truck: RIC78
Comment:

Gross: 115820LBS
Tare: 43920LBS
Net: 71900LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	35.9500 Tons

Weighmaster: ANN 450072

Driver: Howie SS

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1814899
Date: 09/30/2009
Time: 14:59:45 - 15:58:07

Customer: 15RIC / RICCELLI ENTERPRI

Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07

Origin: 116 / SENECA
Truck: RIC19
Comment:

Cust Ref: 12536

Gross: 98920LBS
Tare: 39700LBS
Net: 59220LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	29.6100 Tons

1	Truckload Soil * Approval # 09-073	BILLED WEIGHT 1814899	29.61

SHIPPER SIGNATURE Steve Absolom PRINT NAME Steve Absolom

DRIVER SIGNATURE Neil Bailey PRINT NAME Neil Bailey

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____ (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE 9/30/09
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli Yellow Copy- Driver Pink Copy - Land Fill Gold Copy- Shipper

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1814876
Date: 09/30/2009
Time: 15:10:17 - 15:38:35

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12537

Origin: 116 / SENECA
Truck: RIC156
Comment:

Gross: 109980LBS
Tare: 42500LBS
Net: 67480LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	33.7400 Tons

Weighmaster: ANN 450072

Driver: JSZ

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1814886
Date: 09/30/2009
Time: 15:18:31 - 15:48:41

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12538

Origin: 116 / SENECA
Truck: RIC265
Comment:

Gross: 93380LBS
Tare: 35720LBS
Net: 57660LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	28.8300 Tons

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1814889
Date: 09/30/2009
Time: 15:21:46 - 15:50:15

Customer: 15RIC / RICCELLI ENTERPRI

Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07

Cust Ref: 12539

Origin: 116 / SENECA
Truck: RIC32
Comment:

Gross: 101620LBS
Tare: 38760LBS
Net: 62860LBS

Wastes & Services	Quantity
BC501 / B/R-CONTAM SOIL	31.4300 Tons

Weighmaster: ANN 450072

Driver:

* Approval # 09-073

BILLED WEIGHT 62860

#1814889 31.43 Tons

SHIPPER SIGNATURE Steve Absolom PRINT NAME Steve Absolom

DRIVER SIGNATURE [signature] PRINT NAME [signature]

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL:

CONSIGNEE PRINT NAME

CONSIGNEE SIGN HERE (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM DATE 9/30/09

BY TIME ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli Yellow Copy- Driver Pink Copy - Land Fill Gold Copy- Shipper

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815040
Date: 10/01/2009
Time: 07:55:25 - 08:14:51

Customer: 15RIC / RICCELLI ENTERPRI

Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12540

Origin: 116 / SENECA
Truck: RIC14
Comments:

Gross: 97140LBS
Tare: 40880LBS
Net: 56260LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	28.1300 Tons

Weighmaster: ANN 450072

Driver: Charley

* Approval # 09-073

	BILLED WEIGHT	
	1815040	28.13

SHIPPER SIGNATURE Steve Absolom PRINT NAME Steve Absolom

DRIVER SIGNATURE Charley Burbaker PRINT NAME Charley Burbaker

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE 10/1/09
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli Yellow Copy- Driver Pink Copy - Land Fill Gold Copy- Shipper

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815041
Date: 10/01/2009
Time: 07:57:14 - 08:15:42

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12541
Origin: 116 / SENECA
Truck: RIC32
Comment:

Gross: 92940LBS
Tare: 39080LBS
Net: 53860LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	26.9300 Tons

Truckload Soil

*** Approval # 09-073**

WEIGHT OUT	39080
BILLED WEIGHT	53860
#1815041	26.93Ton

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE _____ PRINT NAME _____

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE 10/1/09
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli Yellow Copy - Driver Pink Copy - Land Fill Gold Copy- Shipper

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815044
Date: 10/01/2009
Time: 07:59:01 - 08:17:45

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12542

Origin: 116 / SENECA
Truck: RIC97
Comment:

Gross: 59540LBS
Tare: 29560LBS
Net: 29980LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	14.9900 Tons

Weighmaster: ANN 450072
Driver: _____

*** Approval # 09-073**

BILLED WEIGHT

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Tom Felice PRINT NAME Tom Felice

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____ (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE 10/1/09
BY _____ TIME _____ ☑ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli Yellow Copy- Driver Pink Copy - Land Fill Gold Copy- Shipper

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815050
Date: 10/01/2009
Time: 08:04:23 - 08:24:33

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12543
Origin: 116 / SENECA
Truck: RIC19
Comment:
Gross: 100120LBS
Tare: 40780LBS
Net: 59340LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	29.6700 Tons

N-N

*** Approval # 09-073**

WEIGHT OUT	
BILLED WEIGHT	
1815050	29.67

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Neil Bailey PRINT NAME Neil Bailey

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____ (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE 10/1/09
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli Yellow Copy- Driver Pink Copy - Land Fill Gold Copy- Shipper

Seneca Meadows, Inc.
1786 Salteman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815064
Date: 10/01/2009
Time: 08:05:32 - 08:39:23

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12544

Origin: 116 / SENECA
Truck: RIC38
Comment:

Gross: 67120LBS
Tare: 29020LBS
Net: 38100LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	19.0500 Tons

Weighmaster: ANN 450072
Driver:

* Approval # 09-073

BILLED WEIGHT 38,100
19.05 TON

SHIPPER SIGNATURE Steve Absolom PRINT NAME Steve Absolom

DRIVER SIGNATURE Mark Fenton PRINT NAME Mark Fenton

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL:
CONSIGNEE PRINT NAME
CONSIGNEE SIGN HERE (NO INITIALS)
RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM DATE
BY TIME AM PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli Yellow Copy- Driver Pink Copy - Land Fill Gold Copy- Shipper

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815067
Date: 10/01/2009
Time: 08:14:15 - 08:42:24

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12545
Gross: 98380LBS
Tare: 35800LBS
Net: 62580LBS

Origin: 116 / SENECA
Truck: RIC265
Comment:

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	31.2900 Tons

Weighmaster: ANN 450072

Driver:

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815074
Date: 10/01/2009
Time: 08:19:13 - 08:49:46

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12546

Origin: 116 / SENECA
Truck: RIC624
Comment:

Gross: 108800LBS
Tare: 42320LBS
Net: 66480LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	33.2400 Tons

Weighmaster: ANN 450072

Driver:

1346003

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815095
Date: 10/01/2009
Time: 08:22:40 - 09:06:58

Customer: 15RIC / RICCELLI ENTERPRI

Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12547

Origin: 116 / SENECA
Truck: RIC135
Comment:

Gross: 113020LBS
Tare: 45160LBS
Net: 67860LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	33.9300 Tons

Weighmaster: ANN 450072

Driver:

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815103
Date: 10/01/2009
Time: 08:37:33 - 09:15:50

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12548 -

Origin: 116 / SENECA
Truck: RIC262
Comment:

Gross: 104960LBS
Tare: 40480LBS
Net: 64480LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	32.2400 Tons

Weighmaster: ANN 450072

Driver:

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815115
Date: 10/01/2009
Time: 08:51:40 - 09:27:47

Customer: 15RIC / RICCELLI ENTERPRI

Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07

Cust Ref: 12549

Gross: 99740LBS
Tare: 39220LBS
Net: 60520LBS

Origin: 116 / SENECA
Truck: RIC253
Comment:

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	30.2600 Tons

Weighmaster: ANN 450072

Driver:

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815143
Date: 10/01/2009
Time: 09:33:19 - 09:57:02

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12550

Gross: 100880LBS
Tare: 42920LBS
Net: 57960LBS

Origin: 116 / SENECA
Truck: RIC156
Comment:

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	28.9800 Tons

Weighmaster: ANN 450072

Driver: [signature]

609

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815144
Date: 10/01/2009
Time: 09:34:19 - 09:58:42

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12551

Origin: 116 / SENECA
Truck: RIC645
Comment:

Gross: 114440LBS
Tare: 42260LBS
Net: 72180LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	36.0900 Tons

20

Weighmaster: ANN 450072

Driver: _____

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815149
Date: 10/01/2009
Time: 09:35:05 - 10:02:57

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12552

Origin: 116 / SENECA
Truck: RIC507
Comment:

Gross: 79320LBS
Tare: 39300LBS
Net: 40020LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	20.0100 Tons

Weighmaster: ANN 450072

Driver: _____

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815156
Date: 10/01/2009
Time: 09:42:12 - 10:16:48

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12553
Origin: 116 / SENECA
Truck: RIC78
Comment:
Gross: 108920LBS
Tare: 44280LBS
Net: 64640LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	32.3200 Tons

Weighmaster: ANN 450072
Driver: Howie SS

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815160
Date: 10/01/2009
Time: 09:47:00 - 10:23:31

Customer: 15RIC / RICCELLI ENTERPRI

Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12554

Gross: 108560LBS
Tare: 44500LBS
Net: 64060LBS

Origin: 116 / SENECA
Truck: RIC309
Comment:

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	32.0300 Tons

Weighmaster: ANN 450072

Driver: [signature]

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815151
Date: 10/01/2009
Time: 09:50:41 - 10:11:3

Customer: 15RIC / RICCELLI ENTERPRI

Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12555

Origin: 116 / SENECA
Truck: RIC14
Comment:

Gross: 97940LBS
Tare: 39800LBS
Net: 58140LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	29.0700 Tons

Weighmaster: ANN 450072

Driver:

*** Approval # 09-073**

BILLED WEIGHT

1815151 29.07

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Charley Buckalew PRINT NAME Charley Buckalew

SPECIAL INSTRUCTIONS:

FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:

Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL:

CONSIGNEE PRINT NAME

CONSIGNEE SIGN HERE (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM DATE 10/1/09

BY TIME ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815150
Date: 10/01/2009
Time: 09:53:21 - 10:10:43

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12556

Origin: 116 / SENECA
Truck: RIC32
Comment:

Gross: 97940LBS
Tare: 39160LBS
Net: 58780LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	29.3900 Tons

Truckload Soil

*** Approval # 09-073**

WEIGHT OUT	39160
BILLED WEIGHT	58780
# 1815150	29.39 Tons

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE _____ PRINT NAME _____

SPECIAL INSTRUCTIONS:

FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:

Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____

CONSIGNEE PRINT NAME _____

CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM _____ DATE 10/1/09

BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815155
Date: 10/01/2009
Time: 10:01:21 - 10:15:36

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12557

Origin: 116 / SENECA
Truck: RIC97
Comment:

Gross: 65440LBS
Tare: 29420LBS
Net: 36020LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	18.0100 Tons

1	Truckload Soil * Approval # 09-073	WEIGHT OUT BILLED WEIGHT	

SHIPPER SIGNATURE Steve Absolom PRINT NAME Steve Absolom

DRIVER SIGNATURE Tom Felice PRINT NAME Tom Felice

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL:
CONSIGNEE PRINT NAME
CONSIGNEE SIGN HERE
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM DATE
BY TIME AM PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli Yellow Copy- Driver Pink Copy - Land Fill Gold Copy- Shipper

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815186
Date: 10/01/2009
Time: 10:03:20 - 10:46:55

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12558
Origin: 116 / SENECA
Truck: RIC19
Comment:

Gross: 98700LBS
Tare: 40120LBS
Net: 58580LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	29.2900 Tons

No. 0

1	**Truckload Soil** *** Approval # 09-073**	**WEIGHT OUT**	
		BILLED WEIGHT	
		1815186	29.29

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Neil Bailey PRINT NAME Neil Bailey

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL:
CONSIGNEE PRINT NAME
CONSIGNEE SIGN HERE
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM DATE 10/1/09 ☐ AM ☐ PM
BY TIME

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli Yellow Copy- Driver Pink Copy - Land Fill Gold Copy- Shipper

Seneca Meadows, Inc
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815158
Date: 10/01/2009
Time: 10:07:37 - 10:20:16

Customer: 15RIC / RICCELLI ENTERPRI

Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12559

Origin: 116 / SENECA
Truck: RIC38
Comment:

Gross: 68260LBS
Tare: 28760LBS
Net: 39500LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	19.7500 Tons

Weighmaster: ANN 450072

Driver:

Approval #

BILLED WEIGHT 39500
19.75 TON

SHIPPER SIGNATURE Steve Absolom PRINT NAME Steve Absolom

DRIVER SIGNATURE Mark Fenton PRINT NAME Mark Fenton

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE 10/1/09
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815179
Date: 10/01/2009
Time: 10:14:42 - 10:41:58

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12560

Origin: 116 / SENECA
Truck: RIC265
Comment:

Gross: 94140LBS
Tare: 35940LBS
Net: 58200LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	29.1000 Tons

Weighmaster: ANN 450072

Driver:

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1015101
Date: 10/01/2009
Time: 10:15:34 - 10:42:51

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12561
Origin: 116 / SENECA
Truck: RIC624
Comment:
Gross: 106440LBS
Tare: 42380LBS
Net: 64060LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	32.0300 Tons

Weighmaster: ANN 450072
Driver:

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815198
Date: 10/01/2009
Time: 10:25:27 - 10:58:40

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12562

Origin: 116 / SENECA
Truck: RIC135
Comment:

Gross: 108040LBS
Tare: 45220LBS
Net: 62820LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	31.4100 Tons

Weighmaster: ANN 450072

Driver:

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815206
Date: 10/01/2009
Time: 10:55:24 - 11:08:38

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12563

Gross: 88380LBS
Tare: 39780LBS
Net: 48600LBS

Origin: 116 / SENECA
Truck: RIC262
Comment:

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	24.3000 Tons

Weighmaster: ANN 450072

Driver:

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815224
Date: 10/01/2009
Time: 11:09:27 -- 11:30:15

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12564

Origin: 116 / SENECA
Truck: RIC253
Comment:

Gross: 99540LBS
Tare: 35500LBS
Net: 64040LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	32.0200 Tons

Weighmaster: ANN 450072

Driver: Patrick Stevens

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815257
Date: 10/01/2009
Time: 11:56:03 - 12:21:20

Customer: 15RIC / RICCELLI ENTERPRI

Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12565

Gross: 104760LBS
Tare: 42540LBS
Net: 62220LBS

Origin: 116 / SENECA
Truck: RIC156
Comment:

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	31.1100 Tons

Weighmaster: RUSS 450014

Driver: 1352

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815252
Date: 10/01/2009
Time: 11:44:22 - 12:10:18

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12566

Origin: 116 / SENECA
Truck: RIC507
Comment:

Gross: 95820LBS
Tare: 38960LBS
Net: 56860LBS

Wastes & Services	Quantity
DCS01 / B/R-CONTAM SOIL	28.4300 Tons

Weighmaster: RUSS 450014

Driver: _____

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815245
Date: 10/01/2009
Time: 11:41:21 - 11:58:26

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12567
Origin: 116 / SENECA
Truck: RIC14
Comment:
Gross: 103480LBS
Tare: 39120LBS
Net: 64360LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	32.1800 Tons

Weighmaster: LYDIA 450104
Driver: Charley

	* Approval # 09-073	WEIGHT OUT	
		BILLED WEIGHT	
		1815245	32.18

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Charley Buckley PRINT NAME Charley Buckley

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL:
CONSIGNEE PRINT NAME
CONSIGNEE SIGN HERE (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM DATE 10-1-09
BY TIME ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli Yellow Copy- Driver Pink Copy - Land Fill Gold Copy- Shipper

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815251
Date: 10/01/2009
Time: 11:46:21 - 12:09:09

Customer: 15RIC / RICCELLI ENTERPRI

Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12568

Origin: 116 / SENECA
Truck: RIC32
Comment:

Gross: 107620LBS
Tare: 39160LBS
Net: 68460LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	34.2300 Tons

* Approval # 09-073

BILLED WEIGHT 68460

#1815251 34.23 TONS

SHIPPER SIGNATURE Steve Absolom PRINT NAME Steve Absolom

DRIVER SIGNATURE [signature] PRINT NAME Billy Wagner

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE 10-1-09
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli Yellow Copy- Driver Pink Copy - Land Fill Gold Copy- Shipper

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815253
Date: 10/01/2009
Time: 11:51:42 - 12:11:20

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12569

Origin: 116 / SENECA
Truck: RIC97
Comment:

Gross: 64660LBS
Tare: 28040LBS
Net: 36620LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	18.3100 Tons

Hauler: RUSS 450014
Driver:

	* Approval # 09-073	WEIGHT SET	
		BILLED WEIGHT	

SHIPPER SIGNATURE Steve Absolom PRINT NAME Steve Absolom

DRIVER SIGNATURE Tom Felice PRINT NAME Tom Felice

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL:
CONSIGNEE PRINT NAME
CONSIGNEE SIGN HERE (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION — FIRM DATE 10-1-09 — BY TIME AM PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli Yellow Copy- Driver Pink Copy - Land Fill Gold Copy- Shipper

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815256
Date: 10/01/2009
Time: 11:57:55 - 12:19:06

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12570

Origin: 116 / SENECA
Truck: RIC38
Comment:

Gross: 63660LBS
Tare: 28520LBS
Net: 35140LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	17.5700 Tons

	* Approval # 09-073	WEIGHT OUT	28520
		BILLED WEIGHT	35140
			17,57TON

SHIPPER SIGNATURE Steve Absolom PRINT NAME Steve Absolom

DRIVER SIGNATURE Mark Fenton PRINT NAME Mark Fenton

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE 10-1-09
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815272
Date: 10/01/2009
Time: 11:59:01 - 12:38:15

Customer: 15RIC / RICCELLI ENTERPRI

Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07

Cust Ref: 12571

Origin: 116 / SENECA
Truck: RIC78
Comment:

Gross: 114780LBS
Tare: 43900LBS
Net: 70880LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	35.4400 Tons

Weighmaster: RUSS 450014

Driver: Howie 55Y

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815273
Date: 10/01/2009
Time: 12:02:31 - 12:39:26

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12572

Origin: 116 / SENECA
Truck: RIC309
Comment:

Gross: 111400LBS
Tare: 44060LBS
Net: 67340LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	33.6700 Tons

Weighmaster: RUSS 450014

Driver: Rus 5572

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

******* Reprint Ticket *******

Ticket: 1815292
Date: 10/01/2009
Time: 12:07:32 - 13:01:40

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12573

Origin: 116 / SENECA
Truck: RIC265
Comment:

Gross: 90400LBS
Tare: 35660LBS
Net: 54740LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	27.3700 Tons

Weighmaster: RUSS 450014

Driver: C LaBar

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815293
Date: 10/01/2009
Time: 12:08:34 - 13:03:32

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12574

Origin: 116 / SENECA
Truck: RIC624
Comment:

Gross: 96900LBS
Tare: 42080LBS
Net: 54820LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	27.4100 Tons

Weighmaster: RUSS 450014

Driver: _____

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815294
Date: 10/01/2009
Time: 12:10:43 - 13:04:38

Customer: 15RIC / RICCELLI ENTERPRI

Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12575

Origin: 116 / SENECA
Truck: RIC135
Comment:

Gross: 106260LBS
Tare: 44880LBS
Net: 61380LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	30.6900 Tons

Weighmaster: RUSS 450014

Driver:

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815302
Date: 10/01/2009
Time: 12:27:46 - 13:11:40

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12576
Origin: 116 / SENECA
Truck: RIC19
Comment:

Gross: 98760LBS
Tare: 39640LBS
Net: 59120LBS

Wastes & Services	Quantity
BCB01 / B/R-CONTAM SOIL	29.5600 Tons

Weighmaster: RUSS-450014

Drivers: Neil

* Approval # 09-073

WEIGHT OUT

BILLED WEIGHT

1815302 29.56

SHIPPER SIGNATURE Steve Absolom PRINT NAME Steve Absolom

DRIVER SIGNATURE Neil Bailey PRINT NAME Neil Bailey

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____ (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE 10-1-09
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli Yellow Copy- Driver Pink Copy - Land Fill Gold Copy- Shipper

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815297
Date: 10/01/2009
Time: 12:47:10 - 13:06:47

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12577

Origin: 116 / SENECA
Truck: RIC262
Comment:

Gross: 97580LBS
Tare: 39760LBS
Net: 57820LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	28.9100 Tons

Weighmaster: RUSS 450014

Driver:

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815330
Date: 10/01/2009
Time: 13:12:59 - 13:44:34

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12578

Origin: 116 / SENECA
Truck: RIC253
Comment:

Gross: 93020LBS
Tare: 35460LBS
Net: 57560LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	28.7800 Tons

Weighmaster: RUSS 450014

Driver:

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815347
Date: 10/01/2009
Time: 13:32:18 - 14:02:08

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12579
Gross: 100320LBS
Tare: 38980LBS
Net: 61340LBS

Origin: 116 / SENECA
Truck: RIC14
Comment:

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	30.6700 Tons

Weighmaster: OWN 450073

	* Approval # 09-073	WEIGHT OUT	
		BILLED WEIGHT	
		1815347	30.67

SHIPPER SIGNATURE Steve Absolom PRINT NAME Steve Absolom

DRIVER SIGNATURE Charley Burkolow PRINT NAME Charley Burkolow

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL:
CONSIGNEE PRINT NAME
CONSIGNEE SIGN HERE
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM DATE 10/1/09
BY TIME
☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815352
Date: 10/01/2009
Time: 13:41:39 - 14:08:00

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12580

Origin: 116 / SENECA
Truck: RIC507
Comment:

Gross: 93540LBS
Tare: 38820LBS
Net: 54720LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	27.3600 Tons

Weighmaster: ANN 450072

Driver: _____

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815355
Date: 10/01/2009
Time: 13:43:14 - 14:10:55

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12581

Origin: 116 / SENECA
Truck: RIC97
Comment:

Gross: 61900LBS
Tare: 28080LBS
Net: 33820LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	16.9100 Tons

Weighmaster: ANN 450072
Driver:

1	Truckload Soil * Approval # 09-073	WEIGHT OUT BILLED WEIGHT	

SHIPPER SIGNATURE Steve Absolom PRINT NAME Steve Absolom

DRIVER SIGNATURE Tom Felice PRINT NAME Tom Felice

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL:
CONSIGNEE PRINT NAME
CONSIGNEE SIGN HERE
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM DATE 10/1/09
BY TIME ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli Yellow Copy- Driver Pink Copy - Land Fill Gold Copy- Shipper

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815353
Date: 10/01/2009
Time: 13:40:31 - 14:08:53

Customer: 1SRIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12582
Gross: 90960LBS
Tare: 42240LBS
Net: 48720LBS
Origin: 116 / SENECA
Truck: RIC156
Comment:

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	24.3600 Tons

Weighmaster: ANN 450072

Driver:

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815362
Date: 10/01/2009
Time: 13:48:39 - 14:19:54

Customer: 15RIC / RICCELLI ENTERPRI

Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12583

Origin: 116 / SENECA
Truck: RIC32
Comment:

Gross: 102080LBS
Tare: 38820LBS
Net: 63260LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	31.6300 Tons

Weighmaster: [illegible]

	* Approval # 09-073	WEIGHT OUT	38820
		BILLED WEIGHT	63260
		#1815362	31.63 Ton.

SHIPPER SIGNATURE Steve Absolom PRINT NAME Steve Absolom

DRIVER SIGNATURE [signature] PRINT NAME [signature]

SPECIAL INSTRUCTIONS:

FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:

Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL:
CONSIGNEE PRINT NAME
CONSIGNEE SIGN HERE (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION — FIRM — DATE 10/1/4 — BY — TIME — ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli Yellow Copy - Driver

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815365
Date: 10/01/2009
Time: 13:52:17 - 14:22:18

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12584
Origin: 116 / SENECA
Truck: RIC38
Comment:

Gross: 66860LBS
Tare: 28300LBS
Net: 38560LBS

Wastes & Services	Quantity
BC801 / B/R-CONTAM SOIL	19.2800 Tons

Driver:

1	Truckload Soil * Approval # 09-073	WEIGHT OUT	28.300
		BILLED WEIGHT	38560
			19.28 Ton

SHIPPER SIGNATURE Steve Absolom PRINT NAME Steve Absolom

DRIVER SIGNATURE Mark Fenton PRINT NAME Mark Fenton

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL:
CONSIGNEE PRINT NAME
CONSIGNEE SIGN HERE (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM DATE
BY TIME ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli Yellow Copy- Driver Pink Copy - Land Fill Gold Copy- Shipper

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815391
Date: 10/01/2009
Time: 14:13:24 - 14:49:30

Customer: 15RIC / RICCELLI ENTERPRI

Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07

Cust Ref: 12585

Origin: 116 / SENECA
Truck: RIC78
Comment:

Gross: 101540LBS
Tare: 43520LBS
Net: 58020LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	29.0100 Tons

Weighmaster: ANN 450072

Driver: Howie SSH

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815392
Date: 10/01/2009
Time: 14:18:54 - 14:50:36

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12586
Origin: 116 / SENECA
Truck: RIC309
Comment:
Gross: 112540LBS
Tare: 43980LBS
Net: 68560LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	34.2800 Tons

Weighmaster: ANN 450072

Driver: Riel 552

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815899
Date: 10/01/2009
Time: 14:31:36 - 15:04:18

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12587
Origin: 116 / SENECA
Truck: RIC265
Comment:

Gross: 112180LBS
Tare: 35340LBS
Net: 76840LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	38.4200 Tons

Weighmaster: ANN 450072

Driver: Rob Beyl

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815408
Date: 10/01/2009
Time: 14:32:19 - 15:12:31

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12588

Origin: 116 / SENECA
Truck: RIC624
Comment:

Gross: 99260LBS
Tare: 41040LBS
Net: 58220LBS

Wastes & Services	Quantity
EC501 / B/R-CONTAM SOIL	29.1100 Tons

Weighmaster: ANN 450072

Driver:

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815396
Date: 10/01/2009
Time: 14:38:45 - 14:57:01

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12589
Origin: 116 / SENECA
Truck: RIC19
Comment:

Gross: 95040LBS
Tare: 39440LBS
Net: 55600LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	27.8000 Tons

	* Approval # 09-073	WEIGHT OUT	
		BILLED WEIGHT	
		1815396	27.80

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Neil Bailey PRINT NAME Neil Bailey

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____ (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE 10/1/09
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli Yellow Copy- Driver Pink Copy - Land Fill Gold Copy- Shipper

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815395
Date: 10/01/2009
Time: 14:38:01 - 14:56:03

Customer: 15RIC / RICCELLI ENTERPRI

Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07

Cust Ref: 12590

Origin: 116 / SENECA
Truck: RIC135
Comment:

Gross: 109920LBS
Tare: 44440LBS
Net: 65480LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	32.7400 Tons

Weighmaster: ANN 450072

Driver: _____

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815397
Date: 10/01/2009
Time: 14:46:01 - 14:59:32

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12591

Origin: 116 / SENECA
Truck: RIC262
Comment:

Gross: 101360LBS
Tare: 39540LBS
Net: 61820LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	30.9100 Tons

Weighmaster: ANN 450072

Driver:

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815432
Date: 10/01/2009
Time: 15:35:05 - 15:54:30

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12592

Origin: 116 / SENECA
Truck: RIC253
Comment:

Gross: 99980LBS
Tare: 35200LBS
Net: 64780LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	32.3900 Tons

Weighmaster: ANN 450072

Driver: Patrick Stevens

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815424
Date: 10/01/2009
Time: 15:23:34 - 15:40:43

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12593
Origin: 116 / SENECA
Truck: RIC14
Comment:
Gross: 103660LBS
Tare: 38520LBS
Net: 65140LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	32.5700 Tons

Driver:

1	**Truckload Soil**	**WEIGHT OUT**	
	*** Approval # 09-073**	**BILLED WEIGHT**	
		1815424	32.57

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Chadey Burton PRINT NAME Chadey Burton

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL:
CONSIGNEE PRINT NAME
CONSIGNEE SIGN HERE (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM DATE 10/1/09
BY TIME ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli Yellow Copy- Driver Pink Copy - Land Fill Gold Copy- Shipper

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815440
Date: 10/01/2009
Time: 15:36:08 - 16:06:17

Customer: 15RIC / RICCELLI ENTERPRI

Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12594

Origin: 116 / SENECA
Truck: RIC507
Comment:

Gross: 99840LBS
Tare: 38500LBS
Net: 61340LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	30.6700 Tons

MC

Weighmaster: ANN 450072

Driver: _____

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815438
Date: 10/01/2009
Time: 15:42:47 - 16:03:45

Customer: 15RIC / RICCELLI ENTERPRI

Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07

Cust Ref: 12595

Gross: 111260LBS
Tare: 42020LBS
Net: 69240LBS

Origin: 116 / SENECA
Truck: RIC156
Comment:

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	34.6200 Tons

Weighmaster: ANN 450072

Driver: 1352

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815447
Date: 10/01/2009
Time: 15:43:48 - 16:13:31

Customer: 15RIC / RICCELLI ENTERPRI

Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12596

Origin: 116 / SENECA
Truck: RIC32
Comment:

Gross: 110880LBS
Tare: 38140LBS
Net: 72740LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	36.3700 Tons

Approval # 09-073

BILLED WEIGHT 72740

#1815447 36.37TON

SHIPPER SIGNATURE Steve Absolom PRINT NAME Steve Absolom

DRIVER SIGNATURE [signature] PRINT NAME [illegible]

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL:
CONSIGNEE PRINT NAME
CONSIGNEE SIGN HERE (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM DATE
BY TIME ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli Yellow Copy- Driver Pink Copy - Land Fill Gold Copy- Shipper

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815443
Date: 10/01/2009
Time: 15:44:25 - 16:09:27

Customer: 15RIC / RICCELLI ENTERPRI

Carrier: 8667 / RICCELLI ENTERPRIS
Profiles: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12597

Origin: 116 / SENECA
Truck: RIC97.
Comment:

Gross: 65100LBS
Tare: 27620LBS
Net: 37480LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	18.7400 Tons

1	Truckload Soil * Approval # 09-073	Drivers:	BILLED WEIGHT

SHIPPER SIGNATURE Steve Absolom PRINT NAME Steve Absolom

DRIVER SIGNATURE Tom Felice PRINT NAME Tom Felice

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL:
CONSIGNEE PRINT NAME
CONSIGNEE SIGN HERE (NO INITIALS) 10/1/09

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM DATE
BY TIME AM PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli Yellow Copy- Driver Pink Copy - Land Fill Gold Copy- Shipper

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5601 Fax: (315) 539-3097

Ticket: 1815437
Date: 10/01/2009
Time: 15:45:12 - 16:03:02

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12598

Origin: 116 / SENECA
Truck: RIC38
Comment:

Gross: 65860LBS
Tare: 28220LBS
Net: 37640LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	18.8200 Tons

*** Approval # 09-073**

WEIGHT OUT	28220
BILLED WEIGHT	37640
	18.82 Ton

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Mark Fenton PRINT NAME Mark Fenton

SPECIAL INSTRUCTIONS:

FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:

Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL:

CONSIGNEE PRINT NAME

CONSIGNEE SIGN HERE (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM DATE 10/1/09

BY TIME ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli Yellow Copy- Driver Pink Copy - Land Fill Gold Copy- Shipper

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815517
Date: 10/02/2009
Time: 07:12:02 - 07:24:29

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12599

Origin: 116 / SENECA
Truck: RIC19
Comment:

Gross: 111980LBS
Tare: 39780LBS
Net: 72200LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	36.1000 Tons

Weighmaster: ANN 450072

Driver: Neil Bailey

*** Approval # 09-073**

BILLED WEIGHT

1815517 | 36.10

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Neil Bailey PRINT NAME Neil Bailey

SPECIAL INSTRUCTIONS:

FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:

Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____

CONSIGNEE PRINT NAME _____

CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM _____ DATE 10-2-09

BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815546
Date: 10/02/2009
Times: 07:39:19 - 07:53:44

Customer: 15RIC / RICCELLI ENTERPRI

Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12600

Origin: 116 / SENECA
Truck: RIC265
Comment:

Gross: 108320LBS
Tare: 35600LBS
Net: 72720LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	36.3600 Tons

Weighmaster: ANN 450072

Driver: [redacted]

1346003

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815549
Date: 10/02/2009
Time: 07:42:36 - 07:56:16

Customer: 15RIC / RICCELLI ENTERPRI

Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12601

Origin: 116 / SENECA
Truck: RIC624
Comment:

Gross: 114880LBS
Tare: 41560LBS
Net: 73320LBS

Wastes & Services	Quantity
BC501 / B/R-CONTAM SOIL	36.6600 Tons

Weighmaster: ANN 450072

Driver:

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815550
Date: 10/02/2009
Time: 07:46:45 - 07:57:18

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12602
Origin: 116 / SENECA
Truck: RIC14
Comment:
Gross: 112380LBS
Tare: 38740LBS
Net: 73640LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	36.8200 Tons

	* Approval # 09-073	WEIGHT OUT	
		BILLED WEIGHT	
		1815550	36.82

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Charley Buckalew PRINT NAME Charley Buckalew

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE 10/2/09
BY _____ TIME _____ ☑ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli Yellow Copy- Driver Pink Copy - Land Fill Gold Copy- Shipper

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815559
Date: 10/02/2009
Time: 07:51:26 - 08:04:48

Customer: 15RIC / RICCELLI ENTERPRI

Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07

Cust Ref: 12603

Origin: 116 / SENECA
Truck: RIC32
Comment:

Gross: 107040LBS
Tare: 38700LBS
Net: 68340LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	34.1700 Tons

Weighmaster: ANN 450072

Driver:

*** Approval # 09-073**

BILLED WEIGHT 68340

#1815559 34.17Ton

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Bill McGregor PRINT NAME Bill McGregor

SPECIAL INSTRUCTIONS:

FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:

Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____

CONSIGNEE PRINT NAME _____

CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM _____ DATE 10/2/09

BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815562
Date: 10/02/2009
Time: 07:54:39 - 08:06:57

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12604
Gross: 65160LBS
Tare: 28520LBS
Net: 36640LBS

Origin: 116 / SENECA
Truck: RIC38
Comment:

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	18.3200 Tons

Weighmaster: ONN 450072

	Truckload Soil * Approval # 09-073	WEIGHT OUT	28520
		BILLED WEIGHT	36 640
			18.32 TON

SHIPPER SIGNATURE Steve Absolom PRINT NAME Steve Absolom

DRIVER SIGNATURE Mark Fenton PRINT NAME Mark Fenton

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL:
CONSIGNEE PRINT NAME
CONSIGNEE SIGN HERE
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM DATE 10/2
BY TIME
☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815571
Date: 10/02/2009
Time: 07:57:58 - 08:13:47

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12605

Origin: 116 / SENECA
Truck: RIC135
Comment:

Gross: 125160LBS
Tare: 44920LBS
Net: 80240LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	40.1200 Tons

Weighmaster: ANN 450072

Driver:

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815570
Date: 10/02/2009
Time: 08:00:57 - 08:12:49

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12606
Origin: 116 / SENECA
Truck: RIC94
Comment:
Gross: 64060LBS
Tare: 28980LBS
Net: 35080LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	17.5400 Tons

Weighmaster: ANN 450072
Driver: Bob H

*** Approval # 09-073**

1815570 **BILLED WEIGHT** 17.54

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Robert H Hawn PRINT NAME Robert H Hawn

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL:
CONSIGNEE PRINT NAME
CONSIGNEE SIGN HERE (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM DATE 10/2/09
BY TIME ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli Yellow Copy - Driver Pink Copy - Land Fill Gold Copy - Shipper

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815572
Date: 10/02/2009
Time: 08:02:05 - 08:14:37

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12607

Origin: 116 / SENECA
Truck: RIC73
Comment:

Gross: 66080LBS
Tare: 28420LBS
Net: 37660LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	18.8300 Tons

Dan

Trackload Soil

* Approval # 09-073

WEIGHT OUT	28420
BILLED WEIGHT	37660
Tons	18.83

#1815572

SHIPPER SIGNATURE Steve Absdom PRINT NAME Steve Absolom

DRIVER SIGNATURE David Case PRINT NAME DAvid CAse

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL:
CONSIGNEE PRINT NAME
CONSIGNEE SIGN HERE (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM DATE 10/2/09
BY TIME ☑ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli Yellow Copy- Driver Pink Copy - Land Fill Gold Copy- Shipper

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815575
Date: 10/02/2009
Time: 08:02:57 - 08:18:57

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12600

Gross: 71440LBS
Tare: 27920LBS
Net: 43520LBS

Origin: 116 / SENECA
Truck: RIC97
Comment:

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	21.7600 Tons

Weighmaster: ANN 450072

Driver: _____

* Approval # 09-073

BILLED WEIGHT 21.76

SHIPPER SIGNATURE Steve Absalom PRINT NAME Steve Absolom

DRIVER SIGNATURE Tom Felice PRINT NAME Tom Felice

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE 10/2/09
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli Yellow Copy- Driver Pink Copy - Land Fill Gold Copy- Shipper

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1615581
Date: 10/02/2009
Time: 08:08:00 - 08:25:11

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12609
Origin: 116 / SENECA
Truck: RIC500
Comment:
Gross: 103160LBS
Tare: 40040LBS
Net: 63120LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	31.5600 Tons

Driver: Devon Ruckey

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815579
Date: 10/02/2009
Time: 08:10:12 - 08:23:14

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12610

Origin: 116 / SENECA
Truck: RIC262
Comment:

Gross: 93680LBS
Tare: 39720LBS
Net: 53960LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	26.9800 Tons

Weighmaster: ANN 450072

Driver:

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815588
Date: 10/02/2009
Time: 08:16:03 - 08:29:41

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12611

Origin: 116 / SENECA
Truck: RIC156
Comment:

Gross: 89660LBS
Tare: 42420LBS
Net: 47240LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	23.6200 Tons

Weighmaster: ANN 450072

Driver: 1752

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815604
Date: 10/02/2009
Time: 08:24:36 - 08:44:05

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12612

Origin: 116 / SENECA
Truck: RIC253
Comment:

Gross: 99180LBS
Tare: 35460LBS
Net: 63720LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	31.8600 Tons

Weighmaster: ANN 450072

Driver: Patrick Stevens

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815674
Date: 10/02/2009
Time: 09:08:20 - 09:44:32

Customer: 15RIC / RICCELLI ENTERPRI

Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12613

Origin: 116 / SENECA
Truck: RIC116
Comment:

Gross: 93840LBS
Tare: 43800LBS
Net: 50040LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	25.0200 Tons

Weighmaster: ANN 450072

Driver:

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815700
Date: 10/02/2009
Time: 09:10:43 - 10:15:44

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12614
Gross: 100160LBS
Tare: 43780LBS
Net: 56380LBS
Origin: 116 / SENECA
Truck: RIC138
Comment:

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	28.1900 Tons

Weighmaster: ANN 450072

Driver:

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815699
Date: 10/02/2009
Time: 09:15:54 - 10:14:30

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12615
Gross: 107940LBS
Tare: 39540LBS
Net: 68400LBS

Origin: 116 / SENECA
Truck: ~~RIC19~~ 1815699
Comment:

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	34.2000 Tons

Weighmaster: [illegible]

	Truckload Soil * Approval # 09-073	WEIGHT OUT	
		BILLED WEIGHT	
		1815699	34.20

SHIPPER SIGNATURE Steve Absolom PRINT NAME Steve Absolom

DRIVER SIGNATURE Neil Bailey PRINT NAME Neil Bailey

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL:
CONSIGNEE PRINT NAME
CONSIGNEE SIGN HERE (NO INITIALS)
RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM DATE 10/2/
BY TIME
☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815704
Date: 10/02/2009
Time: 09:27:17 - 10:17:41

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12616

Origin: 116 / SENECA
Truck: RIC265
Comment:

Gross: 96220LBS
Tare: 35360LBS
Net: 60860LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	30.4300 Tons

Weighmaster: ANN 450072

Driver:

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815706
Date: 10/02/2009
Time: 09:28:05 - 10:18:34

Customer: 15RIC / RICCELLI ENTERPRI

Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12617

Gross: 103140LBS
Tare: 38540LBS
Net: 64600LBS

Origin: 116 / SENECA
Truck: RIC14
Comment:

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	32.3000 Tons

Weighmaster: ANN 450072

Driver: Charley

	* Approval # 09-073	WEIGHT CO...	
		BILLED WEIGHT	
		1815706	32.30

SHIPPER SIGNATURE Steve Absolom PRINT NAME Steve Absolom

DRIVER SIGNATURE Charley Buckalew PRINT NAME Charley Buckalew

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL:
CONSIGNEE PRINT NAME
CONSIGNEE SIGN HERE
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM DATE 10/2/09
BY TIME
☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815720
Date: 10/02/2009
Time: 09:37:58 - 10:25:29

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12618

Origin: 116 / SENECA
Truck: RIC260
Comment:

Gross: 94140LBS
Tare: 35920LBS
Net: 58220LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	29.1100 Tons

Weighmaster: ANN 450072

Driver: Glen Swanthaler

134002

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815726
Date: 10/02/2009
Time: 09:38:56 - 10:29:50

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12619

Origin: 116 / SENECA
Truck: RIC624
Comment:

Gross: 94060LBS
Tare: 41100LBS
Net: 52960LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	26.4800 Tons

Weighmaster: ANN 450072

Driver: _____

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815718
Date: 10/02/2009
Time: 09:44:27 - 10:24:41

Customer: 15RIC / RICCELLI ENTERPRI

Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07

Cust Ref: 12620

Origin: 116 / SENECA
Truck: RIC32
Comment:

Gross: 100920LBS
Tare: 38420LBS
Net: 62500LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	31.2500 Tons

Weighmaster: ANN 450072

Driver: _____

*** Approval # 09-073**

BILLED WEIGHT	62500
1815718	31.25 Tons

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE _____ PRINT NAME _____

SPECIAL INSTRUCTIONS:

FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:

Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____

CONSIGNEE PRINT NAME _____

CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM _____ DATE _____

BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815709
Date: 10/02/2009
Time: 09:46:16 - 10:19:29

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12621

Origin: 116 / SENECA
Truck: RIC38
Comment:

Gross: 61180LBS
Tare: 28300LBS
Net: 32880LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	16.4400 Tons

*** Approval # 09-073**

WEIGHT OUT	28300
BILLED WEIGHT	32880
	16.44 Ton

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Mark Fenton PRINT NAME Mark Fenton

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE 10/2
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815711
Date: 10/02/2009
Time: 09:45:18 - 10:20:18

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12622

Origin: 116 / SENECA
Truck: RIC94
Comment:

Gross: 61560LBS
Tare: 28740LBS
Net: 32820LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	16.4100 Tons

Weighmaster: ANN 450072

Driver:

* Approval # 09-073

1815711 **BILLED WEIGHT** 16.41

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE PRINT NAME

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL:
CONSIGNEE PRINT NAME
CONSIGNEE SIGN HERE (NO INITIALS)
RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM DATE 10/2/09
BY TIME ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli Yellow Copy- Driver Pink Copy - Land Fill Gold Copy- Shipper

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815777
Date: 10/02/2009
Time: 10:01:56 - 11:04:07

Customer: 15RIC / RICCELLI ENTERPRI

Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07

Cust Ref: 12623

Origin: 116 / SENECA
Truck: RIC135
Comment:

Gross: 92300LBS
Tare: 42400LBS
Net: 49900LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	24.9500 Tons

Weighmaster: ANN 450072

Driver: _____

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815713
Date: 10/02/2009
Time: 09:56:53 - 10:21:24

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12624

Origin: 116 / SENECA
Truck: RIC73
Comment:

Gross: 62880LBS
Tare: 28240LBS
Net: 34560LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	17.2800 Tons

David

	* Approval # 09-073	WEIGHT OUT	28240
	# 1815713	BILLED WEIGHT	34560
		Tons	17.28

SHIPPER SIGNATURE Steve Absolom PRINT NAME Steve Absolom

DRIVER SIGNATURE David Case PRINT NAME David CASE

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL:
CONSIGNEE PRINT NAME
CONSIGNEE SIGN HERE
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM DATE 10/2
BY TIME ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli Yellow Copy- Driver Pink Copy - Land Fill Gold Copy- Shipper

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815722
Date: 10/02/2009
Time: 09:58:48 - 10:26:40

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12625

Origin: 116 / SENECA
Truck: RIC97
Comment:

Gross: 62440LBS
Tare: 27740LBS
Net: 34700LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	17.3500 Tons

	* Approval # 09-073	WEIGHT OUT	
	# 1815722	BILLED WEIGHT	17.35

SHIPPER SIGNATURE Steve Absolom PRINT NAME Steve Absolom

DRIVER SIGNATURE Tom Felice PRINT NAME Tom Felice

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE 10/2/09
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli Yellow Copy- Driver Pink Copy - Land Fill Gold Copy- Shipper

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815730
Date: 10/02/2009
Time: 10:00:04 - 10:31:45

Customer: 15RIC / RICCELLI ENTERPRI

Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07

Cust Ref: 12626

Origin: 116 / SENECA
Truck: RIC262
Comment:

Gross: 84000LBS
Tare: 39540LBS
Net: 44460LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	22.2300 Tons

Weighmaster: ANN 450072

Driver:

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815760
Date: 10/02/2009
Time: 10:11:59 - 10:49:35

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12627

Origin: 116 / SENECA
Truck: RIC500
Comment:

Gross: 97160LBS
Tare: 39820LBS
Net: 57340LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	28.6700 Tons

Weighmaster: ANN 450072

Driver: [signature]

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815750
Date: 10/02/2009
Time: 10:13:38 - 10:42:58

Customer: 15RIC / RICCELLI ENTERPRI

Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12628

Origin: 116 / SENECA
Truck: RIC156
Comment:

Gross: 88160LBS
Tare: 42080LBS
Net: 46080LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	23.0400 Tons

Weighmaster: ANN 450072

Driver: 1752

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815745
Date: 10/02/2009
Time: 10:17:07 - 10:39:49

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12629

Origin: 116 / SENECA
Truck: RIC71
Comment:

Gross: 59940LBS
Tare: 29200LBS
Net: 30740LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	15.3700 Tons

Weighmaster: ANN 450072

Driver:

*** Approval # 09-073**

BILLED WEIGHT

Ticket # 1815745

29200
30740
15.37 Ton

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Gene Miller PRINT NAME Gene Miller

SPECIAL INSTRUCTIONS:

FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:

Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL:

CONSIGNEE PRINT NAME

CONSIGNEE SIGN HERE (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM DATE 10-2-09

BY TIME ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli Yellow Copy- Driver Pink Copy - Land Fill Gold Copy- Shipper

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815891
Date: 10/02/2009
Time: 13:03:52 - 13:30:32

Customer: 15RIC / RICCELLI ENTERPRI

Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12631

Origin: 116 / SENECA
Truck: RIC97
Comment:

Gross: 73740LBS
Tare: 27940LBS
Net: 45800LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	22.9000 Tons

	* Approval # 09-073	WEIGHT OUT
		BILLED WEIGHT
	# 1815891	22.90

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Tom Felice PRINT NAME Tom Felice

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____

CONSIGNEE PRINT NAME _____

CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM _____ DATE 10/2/09

BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli Yellow Copy - Driver Pink Copy - Land Fill Gold Copy - Shipper

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815901
Date: 10/02/2009
Time: 13:10:56 - 13:43:10

Customer: 15RIC / RICCELLI ENTERPRI

Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12632

Origin: 116 / SENECA
Truck: RIC32
Comment:

Gross: 112720LBS
Tare: 38580LBS
Net: 74140LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	37.0700 Tons

Weighmaster: RUSS 450014

Driver:

* Approval # 09-073

BILLED WEIGHT	74140
#1815901	37.07 Ton

SHIPPER SIGNATURE Steve Absolom PRINT NAME Steve Absolom

DRIVER SIGNATURE [signature] PRINT NAME Bill McVeigh

SPECIAL INSTRUCTIONS:

FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:

Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL:

CONSIGNEE PRINT NAME

CONSIGNEE SIGN HERE (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM DATE 10/2/09

BY TIME

☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815937
Date: 10/02/2009
Time: 13:22:03 - 14:15:01

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12633

Gross: 109400LBS
Tare: 39560LBS
Net: 69840LBS

Origin: 116 / SENECA
Truck: RIC19
Comment:

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	34.9200 Tons

0-0

1	Truckload Soil * Approval # 09-073	WEIGHT OUT	
		BILLED WEIGHT	
		+1815937	34.92

SHIPPER SIGNATURE Steve Absolom PRINT NAME Steve Absolom

DRIVER SIGNATURE Neil Bailey PRINT NAME Neil Bailey

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____ 10/2/
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☑ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli Yellow Copy- Driver Pink Copy - Land Fill Gold Copy- Shipper

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815935
Date: 10/02/2009
Time: 13:27:00 - 14:13:03

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12634

Origin: 116 / SENECA
Truck: RIC14
Comment:

Gross: 104300LBS
Tare: 38680LBS
Net: 65620LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	32.8100 Tons

Weighmaster: ANN 450072

Drivers: _____

*** Approval # 09-073**

	BILLED WEIGHT	
	1815935	32.81

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Charley Buckley PRINT NAME Charley Buckley

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____ 10/2/11
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1815919
Date: 10/02/2009
Time: 13:31:28 - 13:57:37

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12635
Gross: 70880LBS
Tare: 28480LBS
Net: 42400LBS

Origin: 116 / SENECA
Truck: RIC38
Comment:

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	21.2000 Tons

1	Truckload Soil * Approval # 09-073	WEIGHT OUT	28480
		BILLED WEIGHT	42400
			21.20 Tons

SHIPPER SIGNATURE Steve Absolom PRINT NAME Steve Absolom

DRIVER SIGNATURE Mark Fenton PRINT NAME Mark Fenton

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL:
CONSIGNEE PRINT NAME
CONSIGNEE SIGN HERE (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM DATE
BY TIME ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli Yellow Copy- Driver Pink Copy - Land Fill Gold Copy- Shipper

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1818002
Date: 10/08/2009
Time: 10:04:21 - 10:34:41

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12639

Origin: 116 / SENECA
Truck: RIC64
Comment:

Gross: 106500LBS
Tare: 40960LBS
Net: 65540LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	32.7700 Tons

120 Barre

Weighmaster: ANN 450072

Drivers:

1346003

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1817999
Date: 10/08/2009
Time: 10:03:30 - 10:30:55

Customer: 15RIC / RICCELLI ENTERPRI

Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12640

Gross: 108140LBS
Tare: 35620LBS
Net: 72520LBS

Origin: 116 / SENECA
Truck: RIC265
Comment:

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	36.2600 Tons

Weighmaster: ANN 450072

Driver: [signature]

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1818015
Date: 10/08/2009
Time: 10:05:12 - 10:50:53

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12641
Origin: 116 / SENECA
Truck: RIC138
Comment:

Gross: 107180LBS
Tare: 42120LBS
Net: 65060LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	32.5300 Tons

Weighmaster: ANN 450072

Driver:

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1818009
Date: 10/08/2009
Time: 10:06:11 - 10:43:11

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12642

Origin: 116 / SENECA
Truck: RIC16
Comment:

Gross: 103260LBS
Tare: 39420LBS
Net: 63840LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	31.9200 Tons

Weighmaster: ANN 450072

Driver:

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1818030
Date: 10/08/2009
Time: 10:53:50 - 11:17:00

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12643
Gross: 113680LBS
Tare: 41400LBS
Net: 72280LBS

Origin: 116 / SENECA
Truck: RIC645
Comment:

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	36.1400 Tons

Weighmaster: ANN 450072

Driver:

134443

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1818078
Date: 10/08/2009
Time: 12:25:18 - 12:46:28

Customer: 15RIC / RICCELLI ENTERPRI

Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12644

Gross: 99220LBS
Tare: 35540LBS
Net: 63680LBS

Origin: 116 / SENECA
Truck: RIC265
Comment:

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	31.8400 Tons

Weighmaster: RUSS 450014

Driver:

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1818082
Date: 10/08/2009
Time: 12:26:06 - 12:53:05

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12645

Origin: 116 / SENECA
Truck: RIC64
Comment:

Gross: 90840LBS
Tare: 40840LBS
Net: 50000LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	25.0000 Tons

Weighmaster: RUSS 450014

Driver: 120 Bee

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1810086
Date: 10/08/2009
Time: 12:30:21 - 12:57:28

Customer: 15RIC / RICCELLI ENTERPRI

Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12646

Gross: 113640LBS
Tare: 42020LBS
Net: 71620LBS

Origin: 116 / SENECA
Truck: RIC138
Comment:

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	35.8100 Tons

Weighmaster: BUSS 450014

Driver:

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1818103
Date: 10/08/2009
Time: 12:36:35 - 13:18:05

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 0667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12647

Origin: 116 / SENECA
Truck: RIC16
Comment:

Gross: 93280LBS
Tare: 39320LBS
Net: 53960LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	26.9800 Tons

Weighmaster: RUSS 450014
Drivers:

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1818100
Date: 10/08/2009
Time: 12:43:54 - 13:15:05

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 0667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12648
Gross: 114660LBS
Tare: 41240LBS
Net: 73420LBS
Origin: 116 / SENECA
Truck: RIC645
Comment:

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	36.7100 Tons

Weighmaster: RUSS 450014
Driver:

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1818255
Date: 10/08/2009
Time: 15:46:41 - 16:05:34

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12649
Gross: 120120LBS
Tare: 41260LBS
Net: 78860LBS
Origin: 116 / SENECA
Truck: RIC645
Comment:

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	39.4300 Tons

Weighmaster: ANN 450072
Driver: _____

Parsons

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1818388
Date: 10/09/2009
Time: 08:16:21 - 08:35:45

Customer: 15RIC / RICCELLI ENTERPRI

Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12650

Origin: 116 / SENECA
Truck: RIC14 (25)
Comment:

Gross: 89900LBS
Tare: 38920LBS
Net: 50980LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	25.4900 Tons

1 Truckload Soil

* Approval # 09-073

WEIGHT OUT

BILLED WEIGHT

1818388 25.49

SHIPPER SIGNATURE Steve Absolom PRINT NAME Steve Absolom

DRIVER SIGNATURE Charley Buckalew PRINT NAME Charley Buckalew

SPECIAL INSTRUCTIONS:

FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:

Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL:

CONSIGNEE PRINT NAME

CONSIGNEE SIGN HERE
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM DATE

BY TIME ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli Yellow Copy- Driver Pink Copy - Land Fill Gold Copy- Shipper

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1818391
Date: 10/09/2009
Time: 08:17:12 - 08:37:48

Customer: 15RIC / RICCELLI ENTERPRI

Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07

Gross: 101280LBS
Tare: 38740LBS
Net: 62540LBS

Origin: 116 / SENECA
Truck: RIC32
Comment:

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	31.2700 Tons

*** Approval # 09-073**

WEIGHT OUT	38740
BILLED WEIGHT	62540
#1818391	31.27 TONS

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Bill McVaugh PRINT NAME Bill McVaugh

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1818506
Date: 10/09/2009
Time: 10:16:26 - 10:55:34

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12652

Origin: 116 / SENECA
Truck: RIC14
Comment:

Gross: 108560LBS
Tare: 38680LBS
Net: 69880LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	34.9400 Tons

Weighmaster: ANN 450072

Driver: _____

Approval # 09-073

		BILLED WEIGHT	
		1818506	34.94

SHIPPER SIGNATURE Steve Absolom PRINT NAME Steve Absolom

DRIVER SIGNATURE Charley Buckalew PRINT NAME Charley Buckalew

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE 10/9/09
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli Yellow Copy- Driver Pink Copy - Land Fill Gold Copy- Shipper

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1818500
Date: 10/09/2009
Time: 10:19:00 - 10:48:43

Customer: 15RIC / RICCELLI ENTERPRI

Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12659

Origin: 116 / SENECA
Truck: RIC32
Comment:

Gross: 106980LBS
Tare: 38600LBS
Net: 68380LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	34.1900 Tons

Weighmaster: ANN 450072

Driver:

* Approval # 09-073

BILLED WEIGHT 68380

#1818500 34.19Ton

SHIPPER SIGNATURE _____ PRINT NAME Steve Absolom

DRIVER SIGNATURE _____ PRINT NAME _____

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE 10/9/09
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

Parsons

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1820456
Date: 10/15/2009
Time: 07:42:41 - 08:06:52

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12661
Origin: 116 / SENECA
Truck: RIC14
Comment:
Gross: 107560LBS
Tare: 38760LBS
Net: 68800LBS

#	Wastes & Services	Quantity
1	RCS01 / D/R-CONTAM SOIL	34.4000 Tons

Weighmaster: ANN 450072
Driver:

	* Approval # 09-073	WEIGHT OUT	
		BILLED WEIGHT	
		1820456	34.40

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Charley Buckley PRINT NAME Charley Buckley

SPECIAL INSTRUCTIONS:

FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:

Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____

CONSIGNEE PRINT NAME _____

CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM _____ DATE 10/15/09

BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli Yellow Copy- Driver Pink Copy - Land Fill Gold Copy- Shipper

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1820463
Date: 10/15/2009
Time: 07:46:37 - 08:11:16

Customer: 15RIC / RICCELLI ENTERPRI

Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12662

Origin: 116 / SENECA
Truck: RIC32
Comment:

Gross: 115780LBS
Tare: 38680LBS
Net: 77100LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	38.5500 Tons

Weighmaster: ANN 450072

Driver:

*** Approval # 09-073**

BILLED WEIGHT 77100

#1820463 38.55 TONS

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE _____ PRINT NAME _____

SPECIAL INSTRUCTIONS:

FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:

Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____

CONSIGNEE PRINT NAME _____

CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM _____ DATE 10-15-09

BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1820489
Date: 10/15/2009
Time: 08:02:46 - 08:39:49

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 0667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12063
Origin: 116 / SENECA
Truck: RIC19
Comment:
Gross: 114920LBS
Tare: 39580LBS
Net: 75340LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	37.6700 Tons

Weighmaster: ANN 450072
Driver: Neil

* Approval # 09-073

WEIGHT OUT
BILLED WEIGHT
1820489 37.67

SHIPPER SIGNATURE Steve Absolom PRINT NAME Steve Absolom

DRIVER SIGNATURE Neil Bailey PRINT NAME Neil Bailey

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL:
CONSIGNEE PRINT NAME
CONSIGNEE SIGN HERE (NO INITIALS)
RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM DATE 10/15
BY TIME AM PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli Yellow Copy- Driver Pink Copy - Land Fill Gold Copy- Shipper

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1820494
Date: 10/15/2009
Time: 08:18:17 - 08:44:04

Customer: 15RIC / RICCELLI ENTERPRI

Carrier: 8667 / RICCELLI ENTERPRI$
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12664

Origin: 116 / SENECA
Truck: RIC94
Comment:

Gross: 66640LBS
Tare: 28940LBS
Net: 37700LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	18.8500 Tons

Weighmaster: ANN 450072

Driver:

*** Approval # 09-073**

BILLED WEIGHT

1820494 | 18.85

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Robert H Hauer Jr PRINT NAME Robert H Hauer Jr

SPECIAL INSTRUCTIONS:

FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:

Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL:

CONSIGNEE PRINT NAME

CONSIGNEE SIGN HERE (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM DATE 10/15/09

BY TIME ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli Yellow Copy- Driver Pink Copy - Land Fill Gold Copy- Shipper

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1820503
Date: 10/15/2009
Time: 08:19:02 - 08:53:48

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12665
Origin: 116 / SENECA
Truck: RIC73
Comment:
Gross: 68860LBS
Tare: 28520LBS
Net: 40340LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	20.1700 Tons

Weighmaster: ANN 450072
Driver: Dave

*** Approval # 09-073**

WEIGHT OUT	28520
BILLED WEIGHT	4034
Tons	20.17

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE David Case PRINT NAME DAVID CASE

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____ (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE 10/15/09
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli Yellow Copy- Driver Pink Copy - Land Fill Gold Copy- Shipper

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1820504
Date: 10/15/2009
Time: 08:23:09 - 08:55:01

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12666
Origin: 116 / SENECA
Truck: RIC38
Comment:

Gross: 71080LBS
Tare: 28580LBS
Net: 42500LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	21.2500 Tons

Weighmaster: ANN 450072
Driver:

Truckload Soil

* Approval # 09-073

WEIGHT OUT	28580
BILLED WEIGHT	42500
	21.25 TON

SHIPPER SIGNATURE Steve Absolom PRINT NAME Steve Absolom

DRIVER SIGNATURE Mark Fenton PRINT NAME Mark Fenton

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL:
CONSIGNEE PRINT NAME
CONSIGNEE SIGN HERE (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM DATE 10/15/09
BY TIME ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli Yellow Copy- Driver Pink Copy - Land Fill Gold Copy- Shipper

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1820520
Date: 10/15/2009
Time: 08:46:27 - 09:12:17

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12667
Origin: 116 / SENECA
Truck: RIC56
Comment:

Gross: 69660LBS
Tare: 28260LBS
Net: 41400LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	20.7000 Tons

1820649

Weighmaster: ANN 450072

Driver: Richard Cooper

*** Approval # 09-073**

BILLED WEIGHT 20.7000 3

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Richard Cooper PRINT NAME Richard Cooper

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1820521
Date: 10/15/2009
Time: 08:47:22 - 09:13:27

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 0667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12668

Origin: 116 / SENECA
Truck: RIC95
Comment:

Gross: 69600LBS
Tare: 27800LBS
Net: 41800LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	20.9000 Tons

Weighmaster: ANN 450072

Driver:

Truckload Soil

*** Approval # 09-073**

WEIGHT OUT	27800
BILLED WEIGHT	41,800
	20.90 Tons

Ticket # 1820521

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Michael Payne PRINT NAME Michael Payne

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL:
CONSIGNEE PRINT NAME
CONSIGNEE SIGN HERE
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION — FIRM — DATE 10/15/09 — BY — TIME — ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli Yellow Copy- Driver Pink Copy - Land Fill Gold Copy- Shipper

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1820524
Date: 10/15/2009
Time: 08:52:15 - 09:16:41

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009 073 15RIC / 15RIC-2009 07
Cust Ref: 12669
Origin: 116 / SENECA
Truck: RIC97
Comment:
Gross: 69380LBS
Tare: 28140LBS
Net: 41240LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	20.6200 Tons

Weighmaster: ANN 450072
Driver:

* Approval # 09-073

1820524

WEIGHT OUT

BILLED WEIGHT 20.62

SHIPPER SIGNATURE Steve Absolom PRINT NAME Steve Absolom

DRIVER SIGNATURE Tom Felice PRINT NAME Tom Felice

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL:
CONSIGNEE PRINT NAME
CONSIGNEE SIGN HERE (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM DATE 10/15
BY TIME AM PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1820587
Date: 10/15/2009
Time: 09:33:54 - 10:22:00

Customer: 15RIC / RICCELLI ENTERPRI

Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12670

Origin: 116 / SENECA
Truck: RIC14
Comment:

Gross: 110480LBS
Tare: 38940LBS
Net: 71540LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	35.7700 Tons

Weighmaster: ANN 450072

Driver: Charley

*** Approval # 09-073**

BILLED WEIGHT

1820587 35.77

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Charley Buckalew PRINT NAME Charley Buckalew

SPECIAL INSTRUCTIONS:

FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:

Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL:

CONSIGNEE PRINT NAME

CONSIGNEE SIGN HERE (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM DATE 10/15/09

BY TIME ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1820588
Date: 10/15/2009
Time: 09:39:38 - 10:23:00

Customer: 15RIC / RICCELLI ENTERPRI

Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12671

Origin: 116 / SENECA
Truck: RIC32
Comment:

Gross: 110400LBS
Tare: 38840LBS
Net: 71560LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	35.7800 Tons

Weighmaster: ANN 450072

Driver: _____

*** Approval # 09-073**

BILLED WEIGHT 71560

1820588 35.78 Tons

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE _____ PRINT NAME Bill Bellegue

SPECIAL INSTRUCTIONS:

FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:

Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____

CONSIGNEE PRINT NAME _____

CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM _____ DATE 10/15/09

BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1820593
Date: 10/15/2009
Time: 10:03:42 - 10:29:45

Customer: 15RIC / RICCELLI ENTERPRI

Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07

Origin: 116 / SENECA
Truck: RIC19
Comment:

Cust Ref: 12672

Gross: 111560LBS
Tare: 39520LBS
Net: 72040LBS

Wastes & Services	Quantity
BC901 / D/R-CONTAM SOIL	36.0200 Tons

Weighmaster: ANN 450072

Driver: Neil

1	**Truckload Soil** *** Approval # 09-073**	**BILLED WEIGHT** 1820593	36.02

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Neil Bailey PRINT NAME Neil Bailey

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____ (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE 10/15
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1820613
Date: 10/15/2009
Time: 10:14:08 - 10:47:16

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12673
Origin: 116 / SENECA
Truck: RIC94
Comment:
Gross: 69800LBS
Tare: 28940LBS
Net: 40860LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	20.4300 Tons

Weighmaster: ANN 450072

Driver: Bob H.

Approval #

	BILLED WEIGHT	
	1820613	20.43

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Robert H Hauser PRINT NAME Robert H Hauser

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL:
CONSIGNEE PRINT NAME
CONSIGNEE SIGN HERE (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM DATE 10/15/09
BY TIME ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli Yellow Copy- Driver Pink Copy - Land Fill Gold Copy- Shipper

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1820617
Date: 10/15/2009
Time: 10:14:56 - 10:51:26

Customer: 15RIC / RICCELLI ENTERPRI

Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12674

Origin: 116 / SENECA
Truck: RIC73
Comment:

Gross: 70120LBS
Tare: 28420LBS
Net: 41700LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	20.8500 Tons

Weighmaster: ANN 450072

Driver: David Case

1	**Truckload Soil**	**WEIGHT OUT**	28420
	*** Approval # 09-073**	**BILLED WEIGHT**	41700
		Tons	20.85

SHIPPER SIGNATURE Steve Absolom PRINT NAME Steve Absolom

DRIVER SIGNATURE David Case PRINT NAME DAVID CASE

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____ (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE 10/15/09
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli Yellow Copy- Driver Pink Copy - Land Fill Gold Copy- Shipper

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1820620
Date: 10/15/2009
Time: 10:16:46 - 10:55:09

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12675
Origin: 116 / SENECA
Truck: RIC30
Comment:
Gross: 71200LBS
Tare: 28500LBS
Net: 42700LBS

Wastes & Services	Quantity
BC601 / B/R-CONTAM SOIL	21.3500 Tons

Weighmaster: ANN 450072

Driver: _____

*** Approval # 09-073**

BILLED WEIGHT 42700

21.35 TON

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Mark Fenton PRINT NAME Mark Fenton

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____ (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE 10/15/09
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli Yellow Copy- Driver Pink Copy - Land Fill Gold Copy- Shipper

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Customer: 15RIC / RICCELLI ENTERPRI

Origin: 116 / SENECA
Truck: RIC97
Comment:

Ticket: 1820622
Date: 10/15/2009
Time: 10:37:03 - 10:56:15

Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12676

Gross: 72060LBS
Tare: 28020LBS
Net: 44040LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	22.0200 Tons

Weighmaster: ANN 450072

1	Truckload … Driver:	
	* Approval # 09-073	BILLED WEIGHT 22.02
	# 1820622	

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Tom Felice PRINT NAME Tom Felice

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE 10/15/09
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1820649
Date: 10/15/2009
Time: 10:44:50 -- 11:38:47

Customer: 15RIC / RICCELLI ENTERPRI

Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12677

Origin: 116 / SENECA
Truck: RIC56
Comment:

Gross: 71340LBS
Tare: 28080LBS
Net: 43260LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	21.6300 Tons

182 0737

Weighmaster: LYDIA 450104

Driver:

	* Approval # 09-073	BILLED WEIGHT
		21.63

SHIPPER SIGNATURE Steve Absolom PRINT NAME Steve Absolom

DRIVER SIGNATURE Richard Cooper PRINT NAME Richard Cooper

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____ (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION — FIRM _____ DATE _____ ☐ AM ☐ PM — BY _____ TIME _____

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1820650
Date: 10/15/2009
Time: 10:45:34 - 11:40:01

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12678

Origin: 116 / SENECA
Truck: RIC95
Comment:

Gross: 70680LBS
Tare: 27700LBS
Net: 42980LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	21.4900 Tons

Weighmaster: LYDIA 450104

Driver:

1	**Truckload Soil**	**WEIGHT OUT**	27,700
	*** Approval # 09-073**	**BILLED WEIGHT**	42,980
			21.49

Ticket # 1820650

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE [signature] PRINT NAME Michael Byrne

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL:

CONSIGNEE PRINT NAME

CONSIGNEE SIGN HERE (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION — FIRM DATE — BY TIME — ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli Yellow Copy- Driver Pink Copy - Land Fill Gold Copy- Shipper

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1820666
Date: 10/15/2009
Time: 11:40:50 - 12:00:02

Customer: 15RIC / RICCELLI ENTERPRI

Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12679

Origin: 116 / SENECA
Truck: RIC32
Comment:

Gross: 112600LBS
Tare: 38100LBS
Net: 74500LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	37.2500 Tons

Weighmaster: RUSS 450014

Driver: _____

	BILLED WEIGHT	74500
	#1820666	37.25Tons

SHIPPER SIGNATURE Steve Absolom PRINT NAME Steve Absolom

DRIVER SIGNATURE _____ PRINT NAME _____

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE 10-15-09
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli Yellow Copy- Driver Pink Copy - Land Fill Gold Copy- Shipper

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1820679
Date: 10/15/2009
Time: 11:53:57 - 12:15:25

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12600
Origin: 116 / SENECA
Truck: RIC14
Comment:
Gross: 116120LBS
Tare: 38420LBS
Net: 77700LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	38.8500 Tons

Weighmaster: RUSS 450014
Driver:

Truckload Soil

*** Approval # 09-073**

WEIGHT OUT	
BILLED WEIGHT	
1820679	38.85

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Chadey Buckalew PRINT NAME Chadey Buckalew

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL:
CONSIGNEE PRINT NAME
CONSIGNEE SIGN HERE (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM DATE 10-15-09
BY TIME ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli Yellow Copy- Driver Pink Copy - Land Fill Gold Copy- Shipper

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1820683
Date: 10/15/2009
Time: 12:01:24 - 12:21:59

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12601
Origin: 116 / SENECA
Truck: RIC19
Comment:
Gross: 115420LBS
Tare: 39020LBS
Net: 76400LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	38.2000 Tons

Weighmaster: RUSS 450014

Driver: Neil

*** Approval # 09-073**

WEIGHT OUT	
BILLED WEIGHT	
1820683	38.20

SHIPPER SIGNATURE Steve Absolom PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Neil Bailey PRINT NAME Neil Bailey

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE 10-15-09
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1820800
Date: 10/15/2009
Time: 14:33:11 - 15:00:56

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12682

Origin: 116 / SENECA
Truck: RIC94
Comment:

Gross: 71800LBS
Tare: 28600LBS
Net: 43200LBS

Wastes & Services	Quantity
BC501 / B/R-CONTAM SOIL	21.6000 Tons

Weighmaster: ANN 450072

Driver: Bob H

*** Approval # 09-073**

BILLED WEIGHT 1820860 | 21.60

SHIPPER SIGNATURE _____ PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Robert H Hauser Jr PRINT NAME Robert H Hauser Jr

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____ (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1820687
Date: 10/15/2009
Time: 12:16:25 - 12:31:25

Customer: 15RIC / RICCELLI ENTERPRI

Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07

Cust Ref: 12683

Origin: 116 / SENECA
Truck: RIC73
Comment:

Gross: 72760LBS
Tare: 27940LBS
Net: 44820LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	22.4100 Tons

Weighmaster: RUSS 450014

Driver:

	* Approval # 09-073	WEIGHT OUT	27940
		BILLED WEIGHT	44820 LBS
		Tons	22.4073

SHIPPER SIGNATURE _____ PRINT NAME Steve Absolom

DRIVER SIGNATURE David Case PRINT NAME DAVid CASE

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE 10-15-09
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli Yellow Copy- Driver Pink Copy - Land Fill Gold Copy- Shipper

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1820688
Date: 10/15/2009
Time: 12:17:40 - 12:32:50

Customer: 15RIC / RICCELLI ENTERPRI

Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12684

Origin: 116 / SENECA
Truck: RIC38
Comment:

Gross: 73980LBS
Tare: 28000LBS
Net: 45980LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	22.9900 Tons

Weighmaster: RUSS 450014

Drivers: _____

* Approval # 09-073

BILLED WEIGHT 45980

22.99 Tons

SHIPPER SIGNATURE _____ PRINT NAME Steve Absolom

DRIVER SIGNATURE Mark Fenton PRINT NAME Mark Fenton

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE 10-15-09
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1820696
Date: 10/15/2009
Time: 12:23:20 - 12:46:20

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12685
Origin: 116 / SENECA
Truck: RIC97
Comment:
Gross: 75740LBS
Tare: 27520LBS
Net: 48220LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	24.1100 Tons

Weighmaster: RUSS 450014
Driver: _____

1	Truckload Soil * Approval # 09-073 #1820696	WEIGHT OUT BILLED WEIGHT	 24.11

SHIPPER SIGNATURE _____ PRINT NAME Steve Absolom

DRIVER SIGNATURE Tom Felice PRINT NAME Tom Felice

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE 10-15-09
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli Yellow Copy- Driver Pink Copy - Land Fill Gold Copy- Shipper

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1820737
Date: 10/15/2009
Time: 13:01:19 - 13:47:13

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12686
Gross: 70080LBS
Tare: 27620LBS
Net: 42460LBS

Origin: 116 / SENECA
Truck: RIC56
Comment:

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	21.2300 Tons

Weighmaster: RUSS 450014

Driver: R T Cooper

	* Approval # 09-073	WEIGHT OUT	27620
		BILLED WEIGHT	
			21230

SHIPPER SIGNATURE _____ PRINT NAME Steve Absolom

DRIVER SIGNATURE Richard Cooper PRINT NAME Richard Cooper

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____ ☐ AM ☐ PM
BY _____ TIME _____

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1820738
Date: 10/15/2009
Time: 13:02:01 - 13:48:49

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12687
Origin: 116 / SENECA
Truck: RIC95
Comment:

Gross: 70680LBS
Tare: 27320LBS
Net: 43360LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	21.6800 Tons

Weighmaster: RUSS 450014
Driver:

Truckload Soil

*** Approval # 09-073**

WEIGHT OUT	27320
BILLED WEIGHT	43360
	21.68+

Ticket # 1820738

SHIPPER SIGNATURE _____ PRINT NAME **Steve Absolom**

DRIVER SIGNATURE _____ PRINT NAME Michael Payne

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____ (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE 10/15/09
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1820751
Date: 10/15/2009
Time: 13:46:35 - 14:05:25

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12688
Origin: 116 / SENECA
Truck: RIC32
Comment:
Gross: 109540LBS
Tare: 38080LBS
Net: 71460LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	35.7300 Tons

Weighmaster: ANN 450072
Driver:

*** Approval # 09-073**

BILLED WEIGHT
1820751
71460
35.73Ton

SHIPPER SIGNATURE _____ PRINT NAME **Steve Absolom**

DRIVER SIGNATURE _____ PRINT NAME _____

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____ 10/15/09
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy - Driver* *Pink Copy - Land Fill* *Gold Copy - Shipper*

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1820757
Date: 10/15/2009
Time: 13:47:24 - 14:11:08

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12689
Origin: 116 / SENECA
Truck: RIC14
Comment:
Gross: 108340LBS
Tare: 38200LBS
Net: 70140LBS

Wastes & Services	Quantity
BC501 / B/R-CONTAM SOIL	35.0700 Tons

Weighmaster: ANN 450072
Driver:

Truckload Soil

*** Approval # 09-073**

WEIGHT OUT	
BILLED WEIGHT	
1820757	35.07

SHIPPER SIGNATURE _____ PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Charley Buckalew PRINT NAME Charley Buckalew

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE 10/15/09
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli Yellow Copy- Driver Pink Copy - Land Fill Gold Copy- Shipper

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1820785
Date: 10/15/2009
Time: 14:09:08 - 14:42:04

Customer: 15RIC / RICCELLI ENTERPRI

Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12690

Origin: 116 / SENECA
Truck: RIC19
Comment:

Gross: 113180LBS
Tare: 39040LBS
Net: 74140LBS

Wastes & Services	Quantity
BCS01 / R/R-CONTAM SOIL	37.0700 Tons

Weighmaster: ANN 450072

Driver: Neil

	* Approval # 09-073	WEIGHT OUT	
		BILLED WEIGHT	
		1820785	37.07

SHIPPER SIGNATURE _____ PRINT NAME Steve Absolom

DRIVER SIGNATURE Neil Bailey PRINT NAME Neil Bailey

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli Yellow Copy- Driver Pink Copy - Land Fill Gold Copy- Shipper

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1820780
Date: 10/15/2009
Time: 14:09:54 - 14:35:51

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12691

Origin: 116 / SENECA
Truck: RIC73
Comment:

Gross: 70620LBS
Tare: 27960LBS
Net: 42660LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	21.3300 Tons

Weighmaster: ANN 450072

Driver:

*** Approval # 09-073**

WEIGHT OUT	27960
BILLED WEIGHT	42660
Ton's	21.33

SHIPPER SIGNATURE _____ PRINT NAME **Steve Absolom**

DRIVER SIGNATURE David Case PRINT NAME DAVID CASE

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____ (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE 10/15/09
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1820790
Date: 10/15/2009
Time: 14:10:44 - 14:48:22

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12692
Origin: 116 / SENECA
Truck: RIC38
Comment:
Gross: 67880LBS
Tare: 28120LBS
Net: 39760LBS

Wastes & Services	Quantity
EC501 / D/R-CONTAM SOIL	19.8800 Tons

Weighmaster: ANN 450072

Driver: _____

*** Approval # 09-073**

BILLED WEIGHT 39760
19.88 TON

SHIPPER SIGNATURE _____ PRINT NAME **Steve Absolom**

DRIVER SIGNATURE _____ PRINT NAME _____

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1820793
Date: 10/15/2009
Time: 14:17:00 - 14:51:22

Customer: 15RIC / RICCELLI ENTERPRI

Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07

Origin: 116 / SENECA
Truck: RIC97
Comment:

Cust Ref: 12693

Gross: 74520LBS
Tare: 27560LBS
Net: 46960LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	23.4800 Tons

Weighmaster: ANN 450072

Driver: _____

*** Approval # 09-073**

1820793

BILLED WEIGHT 23.48

SHIPPER SIGNATURE _____ PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Tom Fel PRINT NAME Tom Felice

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE 10/15/09
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539 5624 Fax: (315) 539-3097

Ticket: 1820837
Date: 10/15/2009
Time: 15:16:16 - 15:36:49

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12694

Origin: 116 / SENECA
Truck: RIC56
Comment:

Gross: 76820LBS
Tare: 27660LBS
Net: 49160LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	24.5800 Tons

Weighmaster: ANN 450072

Driver: Richard Cooper

Truckload Soil

*** Approval # 09-073**

WEIGHT OUT	
BILLED WEIGHT	
1820837	24.58

SHIPPER SIGNATURE _____ PRINT NAME **Steve Absolom**

DRIVER SIGNATURE Richard Cooper PRINT NAME Richard Cooper

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE _____
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1820842
Date: 10/15/2009
Time: 15:16:52 - 15:42:55

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12696
Origin: 116 / SENECA
Truck: RIC95
Comment:

Gross: 73060LBS
Tare: 27420LBS
Net: 46440LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	23.2200 Tons

Weighmaster: ANN 450072
Driver:

	* Approval # 09-073	WEIGHT OUT	27420
		BILLED WEIGHT	46440
	Ticket# 1820842		23.22

SHIPPER SIGNATURE _____ PRINT NAME Steve Absolom

DRIVER SIGNATURE _____ PRINT NAME Michael Payne

SPECIAL INSTRUCTIONS:
FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:
Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL: _____
CONSIGNEE PRINT NAME _____
CONSIGNEE SIGN HERE _____
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION
FIRM _____ DATE 10/15/09
BY _____ TIME _____ ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

Paine

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1824483
Date: 10/27/2009
Time: 07:28:26 - 07:49:25

Customer: 15RIC / RICCELLI ENTERPRI
Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12697

Origin: 116 / SENECA
Truck: RIC71
Comment:

Gross: 74980LBS
Tare: 29440LBS
Net: 45540LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	22.7700 Tons

Weighmaster: ANN 450072

Driver:

* Approval # 09-073

#1824483

BILLED WEIGHT

45540

22.77 Tons

SHIPPER SIGNATURE Steve Absolom PRINT NAME Steve Absolom

DRIVER SIGNATURE Gene Miller PRINT NAME Gene Miller

SPECIAL INSTRUCTIONS:

FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:

Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL:

CONSIGNEE PRINT NAME

CONSIGNEE SIGN HERE (NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM DATE 10/27/09

BY TIME ☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli Yellow Copy- Driver Pink Copy - Land Fill Gold Copy- Shipper

Parsons

Seneca Meadows, Inc.
1786 Salcman Rd.
Waterloo, NY 13165
Ph: (315) 539-5624 Fax: (315) 539-3097

Ticket: 1824580
Date: 10/27/2009
Time: 09:25:51 - 09:36:32

Customer: 15RIC / RICCELLI ENTERPRI

Carrier: 8667 / RICCELLI ENTERPRIS
Profile: 2009-073-15RIC / 15RIC-2009-07
Cust Ref: 12698

Origin: 116 / SENECA
Truck: RIC71
Comment:

Gross: 66960LBS
Tare: 29340LBS
Net: 37620LBS

Wastes & Services	Quantity
BCS01 / B/R-CONTAM SOIL	18.8100 Tons

Weighmaster: ANN 450072

Driver: Gene

	* Approval # 09-073	WEIGHT OUT: 29340
		BILLED WEIGHT: 37620
	#1824580	18.81 Ton

SHIPPER SIGNATURE Steve Absolm PRINT NAME Steve Absolom

DRIVER SIGNATURE Gene Miller PRINT NAME Gene Miller

SPECIAL INSTRUCTIONS:

FACILITY OPEN - Monday to Friday 7:00 am to 3:30pm Saturday 7:00 am to Noon

DESTINATION:

Seneca Meadows Landfill- Rte 414 North

FOR APPROVAL:

CONSIGNEE PRINT NAME

CONSIGNEE SIGN HERE
(NO INITIALS)

RECEIVED ABOVE MATERIAL IN GOOD CONDITION

FIRM DATE 10/27/09

BY TIME

☐ AM ☐ PM

Solid waste being interpreted to mean only solid waste or waste containing animal and vegetable matter, rubbish, trash, debris, ashes and metal non-toxic sludge and other waste materials which is not a radioactive volatile, highly flammable explosive toxic or hazardous nature as listed.

White Copy - Riccelli *Yellow Copy- Driver* *Pink Copy - Land Fill* *Gold Copy- Shipper*

APPENDIX K

WATER ANALYTICAL RESULTS

(This page has been intentionally left blank)

Table K
SEAD-12 Complete Water Analytical Results
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION								SEAD-12
LOCATION ID								SITE
MATRIX								WATER
SAMPLE ID								WW1006-01
TOP OF SAMPLE								0
BOTTOM OF SAMPLE								0
SAMPLE DATE								10/6/2009
QC CODE								SA
STUDY ID								RA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Action Level**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	**Value (Q)**
Volatile Organic Compounds								
1,1,1-Trichloroethane	UG/L	0	0%	5	0	0	1	0.45 U
1,1,2,2-Tetrachloroethane	UG/L	0	0%	5	0	0	1	0.44 U
1,1,2-Trichloroethane	UG/L	0	0%	1	0	0	1	0.45 U
1,1-Dichloroethane	UG/L	0	0%	5	0	0	1	0.64 U
1,1-Dichloroethene	UG/L	0	0%	5	0	0	1	0.59 U
1,2-Dichloroethane	UG/L	0	0%	0.6	0	0	1	0.42 U
1,2-Dichloropropane	UG/L	0	0%	1	0	0	1	0.36 U
Acetone	UG/L	2.9	100%		0	1	1	2.9 J
Benzene	UG/L	0	0%	1	0	0	1	0.42 U
Bromodichloromethane	UG/L	0	0%	80	0	0	1	0.84 U
Bromoform	UG/L	0	0%	80	0	0	1	0.32 U
Carbon disulfide	UG/L	0	0%		0	0	1	0.52 U
Carbon tetrachloride	UG/L	0	0%	5	0	0	1	0.36 U
Chlorobenzene	UG/L	0	0%	5	0	0	1	0.44 U
Chlorodibromomethane	UG/L	0	0%	80	0	0	1	0.43 U
Chloroethane	UG/L	0	0%	5	0	0	1	0.36 U
Chloroform	UG/L	0	0%	7	0	0	1	0.18 U
Cis-1,2-Dichloroethene	UG/L	0	0%	5	0	0	1	0.48 U
Cis-1,3-Dichloropropene	UG/L	0	0%	0.4	0	0	1	0.38 U
Ethyl benzene	UG/L	0	0%	5	0	0	1	0.43 U
Meta/Para Xylene	UG/L	0	0%		0	0	1	0.85 U
Methyl bromide	UG/L	0	0%	5	0	0	1	0.58 U
Methyl butyl ketone	UG/L	0	0%		0	0	1	0.78 U
Methyl chloride	UG/L	0	0%	5	0	0	1	0.96 UJ
Methyl ethyl ketone	UG/L	0	0%		0	0	1	1 U
Methyl isobutyl ketone	UG/L	0	0%		0	0	1	0.71 U
Methylene chloride	UG/L	0	0%	5	0	0	1	0.5 U
Ortho Xylene	UG/L	0	0%	5	0	0	1	0.56 U
Styrene	UG/L	0	0%	5	0	0	1	0.37 U
Tetrachloroethene	UG/L	0	0%	5	0	0	1	0.43 U
Toluene	UG/L	0	0%	5	0	0	1	0.42 U
Trans-1,2-Dichloroethene	UG/L	0	0%	5	0	0	1	0.45 U
Trans-1,3-Dichloropropene	UG/L	0	0%	0.4	0	0	1	0.25 U

Table K
SEAD-12 Complete Water Analytical Results
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION								SEAD-12
LOCATION ID								SITE
MATRIX								WATER
SAMPLE ID								WW1006-01
TOP OF SAMPLE								0
BOTTOM OF SAMPLE								0
SAMPLE DATE								10/6/2009
QC CODE								SA
STUDY ID								RA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Action Level**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	**Value (Q)**
Trichloroethene	UG/L	0	0%	5	0	0	1	0.63 U
Vinyl chloride	UG/L	0	0%	2	0	0	1	0.52 U
Semivolatile Organic Compounds								
1,2,4-Trichlorobenzene	UG/L	0	0%	5	0	0	1	0.92 U
1,2-Dichlorobenzene	UG/L	0	0%	3	0	0	1	1.2 U
1,3-Dichlorobenzene	UG/L	0	0%	3	0	0	1	0.73 U
1,4-Dichlorobenzene	UG/L	0	0%	3	0	0	1	0.6 U
2,4,5-Trichlorophenol	UG/L	0	0%	1	0	0	1	0.74 U
2,4,6-Trichlorophenol	UG/L	0	0%	1	0	0	1	1.1 U
2,4-Dichlorophenol	UG/L	0	0%	5	0	0	1	0.91 U
2,4-Dimethylphenol	UG/L	0	0%		0	0	1	0.59 U
2,4-Dinitrophenol	UG/L	0	0%		0	0	1	44 U
2,4-Dinitrotoluene	UG/L	0	0%	5	0	0	1	1.3 U
2,6-Dinitrotoluene	UG/L	0	0%	5	0	0	1	1.1 U
2-Chloronaphthalene	UG/L	0	0%		0	0	1	0.55 U
2-Chlorophenol	UG/L	0	0%		0	0	1	0.77 U
2-Methylnaphthalene	UG/L	0	0%		0	0	1	0.66 U
2-Methylphenol	UG/L	0	0%		0	0	1	0.99 U
2-Nitroaniline	UG/L	0	0%	5	0	0	1	21 U
2-Nitrophenol	UG/L	0	0%	1	0	0	1	0.87 U
3,3'-Dichlorobenzidine	UG/L	0	0%	5	0	0	1	1.3 U
3-Nitroaniline	UG/L	0	0%	5	0	0	1	14 U
4,6-Dinitro-2-methylphenol	UG/L	0	0%	1	0	0	1	24 U
4-Bromophenyl phenyl ether	UG/L	0	0%		0	0	1	1.1 U
4-Chloro-3-methylphenol	UG/L	0	0%	1	0	0	1	0.86 U
4-Chloroaniline	UG/L	0	0%	5	0	0	1	0.92 U
4-Chlorophenyl phenyl ether	UG/L	0	0%		0	0	1	0.77 U
4-Nitroaniline	UG/L	0	0%	5	0	0	1	18 U
4-Nitrophenol	UG/L	0	0%	1	0	0	1	12 U
Acenaphthene	UG/L	0	0%		0	0	1	0.84 U
Acenaphthylene	UG/L	0	0%		0	0	1	0.73 U
Anthracene	UG/L	0	0%		0	0	1	0.64 U
Benzo(a)anthracene	UG/L	0	0%		0	0	1	0.78 U
Benzo(a)pyrene	UG/L	0	0%	0	0	0	1	0.63 U

Table K
SEAD-12 Complete Water Analytical Results
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION								SEAD-12
LOCATION ID								SITE
MATRIX								WATER
SAMPLE ID								WW1006-01
TOP OF SAMPLE								0
BOTTOM OF SAMPLE								0
SAMPLE DATE								10/6/2009
QC CODE								SA
STUDY ID								RA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Action Level**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	**Value (Q)**
Benzo(b)fluoranthene	UG/L	0	0%		0	0	1	0.62 U
Benzo(ghi)perylene	UG/L	0	0%		0	0	1	0.83 U
Benzo(k)fluoranthene	UG/L	0	0%		0	0	1	0.96 U
Benzyl alcohol	UG/L	0	0%		0	0	1	0.74 U
Bis(2-Chloroethoxy)methane	UG/L	0	0%	5	0	0	1	1.3 U
Bis(2-Chloroethyl)ether	UG/L	0	0%	1	0	0	1	1.2 U
Bis(2-Chloroisopropyl)ether	UG/L	0	0%	5	0	0	1	1.1 U
Bis(2-Ethylhexyl)phthalate	UG/L	0	0%	5	0	0	1	1.2 U
Butylbenzylphthalate	UG/L	0	0%		0	0	1	0.9 U
Carbazole	UG/L	0	0%		0	0	1	0.78 U
Chrysene	UG/L	0	0%		0	0	1	1.1 U
Di-n-butylphthalate	UG/L	0	0%	50	0	0	1	0.99 U
Di-n-octylphthalate	UG/L	0	0%		0	0	1	0.89 U
Dibenz(a,h)anthracene	UG/L	0	0%		0	0	1	0.77 U
Dibenzofuran	UG/L	0	0%		0	0	1	0.71 U
Diethyl phthalate	UG/L	0	0%		0	0	1	0.9 U
Dimethylphthalate	UG/L	0	0%		0	0	1	0.74 U
Fluoranthene	UG/L	0	0%		0	0	1	0.72 U
Fluorene	UG/L	0	0%		0	0	1	0.76 U
Hexachlorobenzene	UG/L	0	0%	0.04	0	0	1	0.96 U
Hexachlorobutadiene	UG/L	0	0%	0.5	0	0	1	0.67 U
Hexachlorocyclopentadiene	UG/L	0	0%	5	0	0	1	0.7 U
Hexachloroethane	UG/L	0	0%	5	0	0	1	0.71 U
Indeno(1,2,3-cd)pyrene	UG/L	0	0%		0	0	1	0.65 U
Isophorone	UG/L	0	0%		0	0	1	0.96 U
N-Nitrosodimethylamine	UG/L	0	0%		0	0	1	0.64 U
N-Nitrosodiphenylamine	UG/L	0	0%		0	0	1	0.72 U
N-Nitrosodipropylamine	UG/L	0	0%		0	0	1	1.1 U
Naphthalene	UG/L	0	0%		0	0	1	0.6 U
Nitrobenzene	UG/L	0	0%	0.4	0	0	1	0.9 U
Pentachlorophenol	UG/L	0	0%	1	0	0	1	31 U
Phenanthrene	UG/L	0	0%		0	0	1	0.75 U
Phenol	UG/L	0	0%	1	0	0	1	0.54 U
Pyrene	UG/L	0	0%		0	0	1	0.84 U

Table K
SEAD-12 Complete Water Analytical Results
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION								SEAD-12
LOCATION ID								SITE
MATRIX								WATER
SAMPLE ID								WW1006-01
TOP OF SAMPLE								0
BOTTOM OF SAMPLE								0
SAMPLE DATE								10/6/2009
QC CODE								SA
STUDY ID								RA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Action Level**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	**Value (Q)**
PCBs								
Aroclor-1016	UG/L	0	0%	0.09	0	0	1	0.5 U
Aroclor-1221	UG/L	0	0%	0.09	0	0	1	1 U
Aroclor-1232	UG/L	0	0%	0.09	0	0	1	0.5 U
Aroclor-1242	UG/L	0	0%	0.09	0	0	1	0.5 U
Aroclor-1248	UG/L	0	0%	0.09	0	0	1	0.5 U
Aroclor-1254	UG/L	0	0%	0.09	0	0	1	0.5 U
Aroclor-1260	UG/L	0	0%	0.09	0	0	1	0.5 U
Pesticides								
4,4'-DDD	UG/L	0	0%	0.3	0	0	1	0.05 U
4,4'-DDE	UG/L	0	0%	0.2	0	0	1	0.05 U
4,4'-DDT	UG/L	0	0%	0.2	0	0	1	0.05 U
Aldrin	UG/L	0	0%	0	0	0	1	0.025 U
Alpha-BHC	UG/L	0.067	100%	0.01	1	1	1	**0.067** J
Alpha-Chlordane	UG/L	0	0%		0	0	1	0.025 U
Beta-BHC	UG/L	0	0%	0.04	0	0	1	0.025 U
Delta-BHC	UG/L	0	0%	0.04	0	0	1	0.025 U
Dieldrin	UG/L	0	0%	0.004	0	0	1	0.05 U
Endosulfan I	UG/L	0	0%		0	0	1	0.025 U
Endosulfan II	UG/L	0	0%		0	0	1	0.05 U
Endosulfan sulfate	UG/L	0	0%		0	0	1	0.05 U
Endrin	UG/L	0	0%	0	0	0	1	0.05 U
Endrin aldehyde	UG/L	0	0%	5	0	0	1	0.05 U
Endrin ketone	UG/L	0	0%	5	0	0	1	0.05 U
Gamma-BHC/Lindane	UG/L	0	0%	0.05	0	0	1	0.025 U
Gamma-Chlordane	UG/L	0	0%		0	0	1	0.025 U

Table K
SEAD-12 Complete Water Analytical Results
Construction Completion Report for SEAD-12
Seneca Army Depot Activity

SITE LOCATION								SEAD-12	
LOCATION ID								SITE	
MATRIX								WATER	
SAMPLE ID								WW1006-01	
TOP OF SAMPLE								0	
BOTTOM OF SAMPLE								0	
SAMPLE DATE								10/6/2009	
QC CODE								SA	
STUDY ID								RA	
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Action Level**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	**Value**	**(Q)**
Heptachlor	UG/L	0	0%	0.04	0	0	1	0.025	U
Heptachlor epoxide	UG/L	0	0%	0.03	0	0	1	0.025	U
Methoxychlor	UG/L	0	0%	35	0	0	1	0.25	U
Toxaphene	UG/L	0	0%	0.06	0	0	1	0.5	U
Metals									
Aluminum	UG/L	657	100%	50	1	1	1	**657**	J
Antimony	UG/L	0	0%	3	0	0	1	60	U
Arsenic	UG/L	1.4	100%	10	0	1	1	1.4	J
Barium	UG/L	147	100%	1000	0	1	1	147	J
Beryllium	UG/L	0	0%	4	0	0	1	1	UJ
Cadmium	UG/L	0	0%	5	0	0	1	1	UJ
Calcium	UG/L	45600	100%		0	1	1	45600	J
Chromium	UG/L	1.8	100%	50	0	1	1	1.8	J
Cobalt	UG/L	0	0%		0	0	1	1	UJ
Copper	UG/L	3.2	100%	200	0	1	1	3.2	J
Cyanide	MG/L	0	0%		0	0	1	0.005	U
Iron	UG/L	1510	100%	300	1	1	1	**1510**	J
Lead	UG/L	0	0%	15	0	0	1	1	UJ
Magnesium	UG/L	16600	100%		0	1	1	16600	J
Manganese	UG/L	225	100%	300	0	1	1	225	J
Mercury	UG/L	0	0%	0.7	0	0	1	0.019	UJ
Nickel	UG/L	6.2	100%	100	0	1	1	6.2	J
Potassium	UG/L	2270	100%		0	1	1	2270	J
Selenium	UG/L	4.9	100%	10	0	1	1	4.9	J
Silver	UG/L	0	0%	50	0	0	1	1	UJ
Sodium	UG/L	11800	100%	20000	0	1	1	11800	J
Thallium	UG/L	0	0%	2	0	0	1	1	UJ
Vanadium	UG/L	0	0%		0	0	1	50	U
Zinc	UG/L	5	100%	5000	0	1	1	5	J

Note: Lowest Groundwater Action levels were used from the following standards:
a. NYSDEC Class GA Groundwater Standards (TOGS 1.1.1, June 1998).
b. Federal Maximum Contaminant Level (http://www.epa.gov/safewater/contaminants/index.html)

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APPENDIX L

RESPONSE TO COMMENTS

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Army's Response to Comments from the United States Environmental Protection Agency

Subject: Draft Construction Completion Report
Radiological Waste Burial Pits (SEAD-12)
Seneca Army Depot
Romulus, New York

Comments Dated: May 20, 2010

Date of Comment Response: July 19, 2010

Army's Response to Comments

GENERAL COMMENTS

Comment 1: The Report indicates that monitoring wells were excavated and removed in their entirety. However, it appears that the New York State Department of Environmental Conservation (NYSDEC)'s "Groundwater Monitoring Well Decommissioning Policy" (dated November 3, 2009) was not followed. The *Draft Final Completion Report, Former Sludge Waste Piles (SEAD-5), Seneca Army Depot Activity*, Romulus, New York, dated April 2010, indicates that the bottom of the wells to be abandoned will be punched out, and the interior annulus will be grouted with a Portland cement/bentonite/water slurry that is consistent with State of New York groundwater monitoring well decommissiong guidance. The well's protective casing will be pulled as grout is added to the evacuated space and the concrete pads will be broken up and added to any debris that is staged for removal. Assurances need to be provided that the existing or future contaminants will not migrate via these established preferential pathways (i.e., the former monitoring well locations). Revise the Report to indicate what procedures were implemented to meet current NYSDEC guidance on abandonment of monitoring wells.

Response 1: The report requires no revision. Monitoring wells were removed as is described in Section 3.4.9 of the Construction Completion Report.

Each of the removed wells was located in close proximity to one of the disposal pit excavations (Pit A, B, C1 and C2) that was opened to recover military-related items and to remove other debris and waste that had been buried within SEAD-12 during the Army's occupation and use of the property. The depth of the excavations created to remove the wells was the same as the disposal pit excavations, as both excavations extended from grade surface to bedrock; the notable difference was that the excavations created to remove the wells covered less area than the large pit excavations that were needed to recover the military-related items and other forms of debris.

All of the excavations, regardless of whether they were used for well removal or for military-item/debris recovery were backfilled and regraded using equivalent methods, materials, and means during a single site-wide restoration activity. Therefore, the locations of the former wells have a no greater potential to

represent a preferential pathway for migration than do the larger pit excavations; in fact, it is more likely that the larger disposal pit excavations have a greater potential to pose a preferential pathway then do the small well removal locations just based on areal dimensions. Furthermore, the buried materials previously contained in the historic burial pits were the likely source of the alleged contamination that might move through the supposed preferential pathways, and these sources have now been removed as is documented in the Construction Completion Report. These potential sources have been removed, and the results of new sampling and analysis and an updated risk assessment (See response to Comment 3 below) indicate that there are no unacceptable levels of risk associated with the historic disposal pit locations.

Comment 2: The report does not clearly substantiate that excavation chemical confirmatory sampling presented in Section 3.4.6.1, Conventional Chemical Analysis, was followed. For example, this section states, "Excavation perimeter samples were taken at locations approximately 1 to 2 feet back from the edge of the pit excavations, adjacent to location of pit sidewall samples;" however, excavation perimeter samples locations depicted on Figure 3-2, Confirmatory Sample Locations, are not consistent with this statement. Specifically, excavation perimeter sample location S12EXPR-0-8-02 does not appear to be correlated with a sidewall sample. In addition, Figure 3-10, Disposal Pit C2 Final Sample Locations from Sept-Oct 2009, includes multiple sidewall soil samples with no correlating perimeter samples. Further, the floor soil sample locations presented in the Report figures do appear to be grid-specific. Revise the Report to address all sample locations discrepancies and present a clear description of sampling activities to support the proposed unrestricted land use scenario at the site.

Response 2: A sidewall sample, S12EXSW-O-8-02 was collected from a location near S12EXPR-O-8-02 as is now shown on Figure 3-2. The original label and symbol for sample location S12EXSW-O-8-02 was inappropriately removed from the initial figure due to it being super-imposed over the other label rendering both illegible. The sample result data were provided in Appendix A of the Draft Construction Completion Report. New figures of the disposal pit excavations are provided in the Draft Final Construction Completion Report to enhance clarity and readability. Additionally, the identified text in Section 3.4.6.1 has been changed as shown below.

> Subsequent to the completion of the initial excavations at the historic burial pits and before the temporary suspension of work activities, confirmatory soil sampling was performed to verify that conventional chemical hazardous substances (i.e., not radiological) were not present at levels in excess of acceptable levels. Confirmation sampling was done separately for chemical and radionuclides contaminants of concern (COCs and RCOCs, respectively), with the sampling and analysis of chemical COCs done first. Confirmatory sampling and analysis for RCOCs was conducted once the results for the chemical COCs were received, reviewed, and verified to comply with the desired cleanup levels.
>
> Confirmatory soil samples from the base of the excavation were collected as a discrete grab sample from a unique location at a frequency of one sample per 2,500 square feet (sf) or less of excavation bottom, in accordance with the FSP (Parsons, 2008a). At locations where the base of excavation was greater than 2 feet below the adjacent ground surface, sidewall samples were collected at a rate of one soil sample for every 50 linear feet (lf) or less. Sidewall samples were collected at a depth halfway between the base of the excavation and the adjacent ground surface or sloped bench elevation. Excavation perimeter samples were

taken at locations approximately 1 to 2 feet back from the edge of the pit excavations, adjacent to the location of excavation pit sidewall samples. The minimum number of confirmatory samples required for each excavation is listed in **Table 3-1**. The location of the initial confirmatory soil samples collected from four excavation pits (A, B, C1, and C2) are shown on **Figures 3-2**, **3-3**, and **3-4** for Pits A/B, C1, and C2, respectively.

The floor samples previously shown in Figure 3-10 are correctly aligned within the grid cells; the location of the sample labels may have confused the reviewer. Again, new versions of Figures 3-8 through 3-10 are provided in the revised Report to enhance readability and legibility of the information.

A review of the new sample collection presentations indicates that the grid IDs included as part of the sample ID for samples S12EXSW-K-4-01 and S12EXPR-K-4-01 do not correspond correctly to their actual grid locations. This error likely arose due to field personnel misidentifying a grid stake during sample collection. Nevertheless these samples are appropriately positioned on the figure based on survey data, and their sample identities are unique. The original sample identities have been retained to ensure data traceability.

There are two sidewall samples that are not collocated with perimeter samples: S12EXSW-I-2-03 and S12EXSWJ-2-02. Field personnel indicate that failure to collect these samples was an oversight.

Comment 3: The Report indicates that it is the Army's intention to prepare a Proposed Plan and Record of Decision (ROD) that calls for no further action at the site that will ultimately be released for unrestricted use, based, partially on the results of chemical analysis of soil samples collected from the excavations. However, the Report does not include an adequate resolution of organochlorine pesticides concentrations in soil samples collected from Pits C1 and C2 which exceed NYSDEC Unrestricted Use Soil Cleanup Objectives (SCOs), and the various metals analyses and associated calculated 95% UCLs. Revise the Report to include a residual risk assessment that determines the residual site risk that remain in site soils and demonstrates that it is within EPA's risk management range for unrestricted use.

Response 3: An update to the risk assessment prepared during the SEAD-12 Remedial Investigation has been prepared and is included as Appendix H of the Construction Completion Report. A summary of the risk assessment results are provided in a new section 3.6, and the prior Section 3.6 has been renumbered to Section 3.7. This summary indicates that site risks associated with exposure to soil that remains at the site today is still within or below the EPA's accepted range of human health risk and hazard.

Comment 4: The Report specifies that waste disposal samples of stockpiled waste material were collected and submitted for radiological and chemical constituents of concern (COCs) characterization analysis prior to disposal. The Report states that radiological sampling occurred at a rate of one sample per every 200 cubic yards (cy), while COC characterization analysis sampling occurred at a rate of one sample per every 700 cy. Specifically, how these two different volume-based sampling frequencies were implemented was not included in the Report. Revise the Report to include a more detailed accounting of how the stockpiled waste materials were sampled, if TSCA regulated media was generated and how mixed waste was handled.

Response 4: The first paragraph under the header "Six-inch Minus cut Stockpile from Pits A, B, and C2" on page 3-10 has been changed to read as follows:

> Samples of the six-inch minus waste soil cut from materials excavated from Pits A, B, and C2 were collected on August 6, 2009 and submitted to CAS Inc. for waste disposal characterizations. In accordance with the requirements and specifications identified by representatives of the Seneca Meadows Landfill, waste disposal samples for chemical COCs were collected at a frequency of one per every 700 cy of stockpiled waste material. Samples of the stockpile waste soil were also collected for radiological analyses at a frequency of one per every 200 cubic yards as specified by the intended landfill recipient.
>
> Prior to sampling, the volume of the six-inch minus waste soil windrow was estimated by surveying its extent and height using GPS. These survey coordinates were superimposed over previously defined site elevation survey data and the volume of the six-inch minus stockpile was estimated. Waste characterization sample locations were then randomly sited across the length and width of the waste soil windrow, and samples for characterization of radiological and chemical waste characteristics were collected from sample depths varying from 2 inches to 2 feet below grade surface. As the material contained in the waste soil windrow was comprised of soil and fill that had been handled and mixed several times (i.e., excavated, moved to the laydown area, scanned, hand sorted, picked up for processing through mechanical screen, laid out and sorted again if mechanical screen radiation scanner alarmed, picked up, and staged pending analysis), these materials were considered to be well mixed within the windrow. Since the number of radiological samples required exceeded the number of samples needed for conventional waste characterization purposes per the requirements of the receiving landfill, the locations of the radiological samples were used as the primary sample locations and the necessary conventional waste characterization samples were collected from selected radiological sampling locations that scattered throughout the windrow. .
>
> All waste characterization analytical results obtained were reviewed by the Army, Parsons, and Cabrera Services upon receipt and once the data were found not to contain any unanticipated levels of chemical or radiological contamination, it was provided to representatives of Seneca Meadows Landfill for review and pre-approval prior to it being loaded onto trucks for transport to the off-site facility for disposal. None of the analytical determinations showed evidence of TSCA regulated materials or levels of radiation that were not within the landfill's permitted levels to receive.

SPECIFIC COMMENTS

Comment 1: Section 2.7, Establishment of Work and Staging Areas, Page 2-4. The Report states, "Ditch checks were installed on the down stream end of road side ditches;" however, it was not clear where precisely these were located, and if sediment controls were used to protect creek identified in Section 1.3.2, Site Conditions. Revise the Report to include addtitional details sediment controls used to protect the creek located at SEAD-12.

Response 1:

The second paragraph of Section 2.7 on page 2.4 has been revised as is shown below.

> The construction entrance road extended through the north to south tree line where it extended into the work zone, passing immediately south of the location of Burial Pit C2. Beyond the tree line, the defined construction roadway gave way to meandering vehicular routes that marked how the construction vehicles passed from and around the excavation work zone to the support areas. Each of the excavation sites was

bounded and marked with a 4-foot high orange construction fence that was installed around its perimeter as a safety measure.

Silt fences constructed of 2-foot high fabric mounted on wooden stakes were installed between the work and support zones and the wooded area that borders the work/support areas to the south as well as around the staging and handling (support) area, access roads, and along the road side ditches that parallel Service Road No. 1. Ditch checks constructed of hay bales were installed on the down stream ends of both of the drainage ditches that border Service Road No. 1 upgradient of the location where they discharge into the unnamed creek. The approximate locations of silt fences and ditch checks are shown on **Figure 2-1**.

Comment 2: Section 2.9, Control of Run-On and Run-Off Waters, Page 2-5. This section does not address daily inspection and repair of run-on, run-off and erosion controls. Revise this section to document the daily inspection and repair procedure that took place during the course of the project, including the source of the additional water generated during the removal activities performed.

Response 2: The following sentence will be added to Section 2.9: "The run-on, run-off, and erosion control measures were inspected daily and minor repairs were completed, as needed."

Comment 3: Section 2.10, Establishment of Erosion and Sedimentation, Page 2-6. The Report states, "Temporary erosion control measures were removed following remediation so as to return drainage patterns to their general conditions prior to remediation;" however, erosion control measures (e.g., seeding) do not actually have an effect on drainage patterns and, therefore, this statement was not clear. Section 3.4.14, Site Restoration, indicates the erosion control measures were completed after remediation (i.e., the site was seeded with winter wheat). Further, Section 3.4.14 states that, "These erosion and run-off controls will remain in place until post-construction inspections confirm that vegetation has been established in disturbed areas." Revise the Report to address these discrepancies.

Response 3:

Section 2.10 has been modified to read as follows:

Erosion and sedimentation controls, such as silt fencing and hay bales, were installed in downgradient areas during operations to prevent migration of sediments and erosion. Prior to beginning any excavation work, temporary silt fencing was erected between the work area (i.e., Disposal Pit sites and the support/laydown area) and downgradient surrounding areas (i.e., wooded and the unnamed creek to the south and drainage ditches bordering Service Road No. 1 to the west) to prevent contaminated sediment transport. As discussed in **Section 2.4**, hay bale ditch checks were also installed in the two drainage ditches that run on either side of and parallel to Service Road No. 1 at locations upgradient of where the drainage ditches discharge into the southeast-to-westerly trending unnamed creek that flows to the south of the historic burial pit site. The temporary silt fencing was maintained throughout the project and will not be removed until permanent vegetation has been re-established.

Temporary erosion control measures, including excavation slope stabilization benches, soil berms and swales exterior to the excavations, and silt fence emplacements were constructed around each of the open excavation sites to control surface water run-on/run-off and soil migration to outlying areas. Additionally,

once excavated soils was placed into the Overburden/C1 stockpile, temporary silt fencing was added to the east, north, and northwest of this area to prevent sediment migration into lower lying areas.

Section 3.4.14 has been modified to read as follows.

No off-site borrow material was used to backfill or regrade the disposal pits. Pits A and B and associated monitoring well locations were backfilled using soil from the "Overburden/C1" stockpile. Analytical results for these soils are discussed in Section 3.5.1 Overburden / C1 Stockpile discussion, below. Excavations at Pits C1 and C2, and monitoring well locations associated with these pits were backfilled by pushing native soil from high areas surrounding the excavation areas back into the excavation locations and grading to promote positive drainage away from the sites. During the backfill and regarding operations, the temporary silt fence located to the east, north, and northwest of the Overburden/C1 stockpile was removed and disposed at the licensed landfill. Additionally, excavation site stabilization benches, temporary soil berms, and storm water diversion swales created around each of the excavation pit sites were also regraded to promote positive flow throughout the former work areas.

Once all of the excavation sites were backfilled and graded, all areas were raked and seeded on November 2 and 3, 2009 with winter wheat to promote vegetation and to prevent erosion.

The erosion and run-off controls established between the work/support/laydown areas and the wooded area and creek to the south and the drainage ditches to the west along Service Road No. 1 were left in place, pending the revegetation of the work/support area sites.

Comment 4: Section 3.3, Dust Control Monitoring, Page 3-2. According to this section, air monitoring measurements were collected during the first month of the project; however, the results have not been provided in the Report. In addition, the daily reports included in Appendix A do not indicate that air monitoring equipment was on-site during this period of time. Revise the Report to include information on the air monitoring results and address the discrepancy between the daily reports and the information presented in Section 3.3.

Response 4: The daily reports covering the initial month of work at the site when the majority of the excavation, sorting, and screening work was conducted have been amended to reflect the presence of dust monitors at the site.

Section 3.3 has been revised as is shown below.

Air monitoring measurements were collected periodically during the first month of the removal action (July 13 – August 14, 2009), during periods when the greatest amount of excavation and material handling activities occurred. The data collected during the monitoring events are presented in Appendix CCC. The presented data show that fugitive dusts were not identified as a concern during this phase of the work due to the low number and slow operating speeds of site vehicles (e.g., articulated trucks, excavator, dozer, etc.). Furthermore, the clay-till composition of the native soil materials found at the site tends to clod which inherently reduces windborne dust levels. The professional judgments of the site manager and site health and safety officer dictated when conventional methods of dust suppression (e.g., water spraying) were used to control dust generated during construction.

Comment 5: Section 3.3, Dust Control Monitoring, Page 3-2. The text states that, "When necessary, conventional methods (e.g., water spraying) were used to suppress potential dust generated;" however, it was not clear how the determination was made to use these methods, given that air monitoring only

occurred from July 13 – August 14, 2009. Revise the Report to clarify how it was determined that dust control measures were used at the site.

Response 5: See Response to item 4 above.

Comment 6: Section 3.4.1, Pit Excavations, Page 3-4. The text states that, "Soil removal done to promote sidewall and slope stability resulted in the excavation of native soils from beyond the edge of the former burial pit debris cache;" however, it was not clear if these areas were included in the "limits of the excavation" shown in Figures 3-1 through 3-7. In addition, Figures 3-8 and 3-9 include labels for "Excavation Work Area" and "Approximate limits of debris cache", and it was not clear if either of these include the benching described in Section 3.4.1. Revise this section, or the figures, if necessary, to clarify the extent of the excavations; clear, unequivocal presentation of the limits of excavation and radiological screening should be presented in the Report to support the eventual release of the site for unrestricted use.

Response 6: The features on Figure 3-2 previously labeled as "Disposal Pit A", "Disposal Pit B", "Disposal Pit C1", and "Disposal Pit C2" have been removed and replaced by the Limit of Excavation feature shown on Figure 3-1. In addition, the item in the legends of Figures 3-1 through 3-7 previously identified as "Limit of Excavation" has been renamed as "Limit of Excavation including slope stabilization bench". The features identified in the Legend of Figures 3-8, 3-9, and 3-10 have been renamed as "Limits of Excavation including slope stabilization bench".

Comment 7: Section 3.4.10, Additional Burial Pit Excavations, Page 3-17. This section states, "***Figure 3-2*** [emphasis added] presents the results of the EM-31 surveys;" however, this information is not provided on Figure 3-2, but rather Figure 3-3. Revise this section to correct this reference.

Response 7: The noted correction will be made in the text; however, due to the renumber of other figures this Figure is now identified as Figure 3-5.

Comment 8: Section 3.4.10, Additional Burial Pit Excavations, Page 3-17. This section indicates that material was excavated from grid cell K4; however, it was not clear why additional soil was removed from K4. The area in immediate vicinity of K4 did not have any anomalies noted in Figure 3-3, Limits of Initial Excavation (2009 In-Phase EM Data), nor did it appear that this would be a location where soil benching was necessary. Revise this section to address this discrepancy.

Response 8: The text on pages 3-17 and 3-18 has been revised as is shown below. Cell K4 was improperly identified in the prior text due to the author's improper identification of the grid cell locations in the low pair of figures that were displayed on the original Figure 3-5.

Pit C2 Excavations

As part of the initial "mag +dig" surveys, the survey team identified a large metal anomaly beneath the surface of the ground to the northeast of Pit C2 (in grid cell J3). When this anomaly was investigated, a large metal object was uncovered, which subsequently was removed using the excavator (due to its size). During this removal operation, a larger cache of buried debris was uncovered beneath the initial object and as a result, a satellite excavation extending into grids I3, I4, J3 and J4 (including benching) was created

adjacent to Pit C2 from which approximately 70 cubic yard of material was excavated, and transported to the materials handling and processing area, where it was laid out on plastic, scanned and processed to remove all radiological items, identified military-related items, and other forms of miscellaneous debris. Once all debris and items of interest were recovered and secured, the waste soil was staged for subsequent disposal at the off-site landfill.

Once the EM-31 surveys were performed around Pit C2, additional buried objects were identified in previously unexcavated areas immediately surrounding Pit C2 (in grid cells I2 and J2), at other locations between Pit C1 and C2, and to the south-southeast of Pit A. **Figure 3-5** presents the results of the EM-31 surveys conducted after the initial excavations at each of these were cleared and samples were collected. Each of the identified areas showing an EM-31 response suggesting buried objects were subsequently investigated by field crews. Investigation of anomalies identified in grid cells I2 and J2 resulted in the excavation of another 300 cubic yards of material from grid cells G2, H2, I2, J2, K2, G3, H3, I3, H4, I4, and J4 (including stability benching, see **Figure 3-7**, all of which was transported to the materials handling and processing area where it was laid out on plastic, scanned for evidence of radiation, manually sorted, debris and soil separated, recovered debris presented for inspection by Army personnel, and then segregated as either radiological materials (secured in B-25 boxes), military-related items secured by the Army, or added to the recycle, C&D/miscellaneous debris stream, or added to a soil stockpile for load out to the local off-site landfill. Additional excavations around Pit C2 took place during the period from October 5 to October 13, 2009. Confirmatory sampling and analysis for COCs and RCOCs were performed in the expanded pit area on October 5, October 7, and October 15, 2009. The extent of the additional excavation in Pit C2 can be seen in **Figure 3-7**.

Comment 9: Figure 3-2, Confirmatory Sample Locations. The limits of the excavation depicted in Figure 3-2 are not conistent with the limits depicted in Figure 3-1. Limits of Initial Excavation (July 22, 2009). In addition, excavation depths are not included on Figure 3-2 and therefore, it is difficult to review the appropriateness of soil sampling locations, in particular, the locations of sidewall samples. Revise this section or Figure 3-2 as necessary to clarify the excavation limits.

Response 9: The feature previously labeled as "Limits of Excavation" on Figure 3-2 has been replaced with the "Limits of Excavation" feature previously shown on Figure 1 and relabeled in the legend at "Limit of Excavation including slope stabilization bench". This same legend terminology has been applied to all subsequent maps that show excavation locations and geophysical data or sample locations.

Army's Response to Comments from the New York State Department of Environmental Conservation

Subject: Draft Construction Completion Report
Radiological Waste Burial Pits (SEAD-12)
Seneca Army Depot
Romulus, New York

Comments Dated: June 3, 2010

Date of Comment Response: July 19, 2010

Army's Response to Comments

GENERAL COMMENTS

Comment 1: State noted that several collected Confirmatory samples exceeded from State Soil Cleanup objectives but barely the State is satisfied with the results. Please revise the sections in report as necessary to clarify that the objectives were met in this remediation.

Response 1: Appropriate sections of the Revised Report will indicate that the cleanup objectives were achieved.

Comment 2: Please revise the report to indicate what procedures were implemented, used to meet current NYSDEC guidance for abandonment of monitoring wells.

Response 2: The wells were removed from the site as is described in the text provided. The former well locations do not represent any greater preferential pathway than do the larger surrounding excavation sites opened for the removal of military-related items and other debris, since the excavations went to the same depth (bedrock) below grade, were through the same lithological materials (i.e., clay, till and fill) and were all backfill at the same time, using the same methods, and materials. Furthermore, the removal action conducted in this area removed the only known and most logical source of residual contamination that remained at this site. The new analytical results indicate, as NYSDEC has indicated above in General Comment 1, that the soil cleanup objectives were met; therefore there is no potential for groundwater contamination to occur. The well installations were removed during the removal action once it became apparent that their metal components of construction (i.e., bollards, protective casings, etc.) were "blinding" geophysical survey equipment that was being used to confirm that all buried debris in the vicinity of each of the larger pits had been excavated. Each of the installations was removed using the excavation equipment that was available at the site, as part of the overall site excavation and were not treated separately.

Comment 3: Samples collected from Waste disposal samples, at what rate of occurred or at a rate of one sample per every 700 cy or what.

Response 3: Samples were collected at a rate of 1 per every 200 cubic yards for radiological analytes, and one for every 700 cubic yards for conventional chemical waste characterization actions.

In addition, based on EPA comments the section entitled "Six-inch Minus Cut Stockpile for Pits A, B, and C2"presented on Page 3-10 has been modified as is shown below.

> Samples of the six-inch minus waste soil cut from materials excavated from Pits A, B, and C2 were collected on August 6, 2009 and submitted to CAS Inc. for waste disposal characterizations. In accordance with the requirements and specifications identified by representatives of the Seneca Meadows Landfill, waste disposal samples for chemical COCs were collected at a frequency of one per every 700 cy of stockpiled waste material. Samples of the stockpile waste soil were also collected for radiological analyses at a frequency of one per every 200 cubic yards as specified by the intended landfill recipient.
>
> Prior to sampling, the volume of the six-inch minus waste soil windrow was estimated by surveying its extent and height using GPS. These survey coordinates were superimposed over previously defined site elevation survey data and the volume of the six-inch minus stockpile was estimated. Waste characterization sample locations were then randomly sited across the length and width of the waste soil windrow, and samples for characterization of radiological and chemical waste characteristics were collected from sample depths varying from 2 inches to 2 feet below grade surface. As the material contained in the waste soil windrow was comprised of soil and fill that had been handled and mixed several times (i.e., excavated, moved to the laydown area, scanned, hand sorted, picked up for processing through mechanical screen, laid out and sorted again if mechanical screen radiation scanner alarmed, picked up, and staged pending analysis), these materials were considered to be well mixed within the windrow. Since the number of radiological samples required exceeded the number of samples needed for conventional waste characterization purposes per the requirements of the receiving landfill, the locations of the radiological samples were used as the primary sample locations and the necessary conventional waste characterization samples were collected from selected radiological sampling locations that scattered throughout the windrow. .
>
> All waste characterization analytical results obtained were reviewed by the Army, Parsons, and Cabrera Services upon receipt and once found not to contain any unanticipated levels of chemical or radiological contamination, it was provided to representatives of Seneca Meadows Landfill for review and pre-approval prior to it being loaded onto trucks for transport to the off-site facility for disposal. None of the analytical determinations showed evidence of TSCA regulated materials or levels of radiation that were not within the landfill's permitted levels to receive.

SPECIFIC COMMENTS

Comment 1: Section 3.4.10, Page 3-18 "Fig 3-2 presents the result s of the EM-31 surveys conducted ....." please revise the figure to show the results.

Response 1: The noted correction will be made in the text; however, due to the reorganization of other report figures, this figure is now identified as Figure 3-5.

Army's Response to Comments from the United States Environmental Protection Agency

Subject: Draft Final Construction Completion Report
Radiological Waste Burial Pits (SEAD-12)
Seneca Army Depot
Romulus, New York

Comments Dated: September 3, 2010

Date of Comment Response: December 10, 2010

Army's Response to Comments

GENERAL COMMENTS

Comment 1: The Human Health Risk Assessment (HHRA) included in Appendix H and summarized in Section 3.6 (Updated Remedial Investigation Human Health Risk Assessment) of the Draft Final Construction Completion Report for the Removal Action at the Waste Burial Radiological Sites (SEAD-12) (CCR) is incomplete as the cancer risk from both radionuclides and chemical carcinogens has not been summed to provide an estimate of the combined risk presented by all carcinogenic contaminants as specified in OSWER Directive 9200.4-18, August 1997, Establishment of Cleanup Levels for CERCLA Sites with Radioactive Contamination and EPA's 1989 Risk Assessment Guidance for Superfund, Part A. Neither Appendix H nor Section 3.6 have discussed the contribution of radionuclide cancer risk to the overall total risk from each exposure area. This is confirmed upon detailed review of Appendix H where all the tables list only chemical contaminants; no radionuclides are listed or discussed. This is a significant oversight in the CCR and has presented an underestimate of the total risk at the site. In order to support risk management decisions at the site, the HHRA should be revised to include the sum of both radionuclide and chemical risks.

Response 1: The Army conducted a final status survey (FSS) in accordance with procedures identified in MARSSIM, and the results of this survey indicate that residual soil levels of radionuclides found at the excavated disposal pit locations are below derived concentration guideline levels (DCGLs) that were derived based on a resident farmer exposure scenario. Therefore, it is the Army's understanding that potential risks attributable to radionuclides do not have to be included in the risk assessment calculation, per the following communication.

> "The final status survey (FSS) is conducted after the completion of remediation as a confirmatory survey to make sure that the contaminants have been removed and that there are no contaminants remaining that exceed the action level. The action level is usually derived to meet an acceptable risk criteria. If all final status survey data are below the action level, then you have met the cleanup objective of meeting an acceptable risk and there is no need to perform a risk assessment.

> However, if there are residuals exceeding your action level and they can't not be removed for legitimate reasons, then a risk assessment will need to be performed"[1].

The results of the FSS are summarized in Section 3.5.2 of the SEAD-12 Construction Completion Report, and are presented in greater detail in the radiological consultant's report, which is presented in its entirety in Appendix D of the SEAD-12 Construction Completion Report.

The Army has also reviewed and reassessed the EPA's concerns (See Specific Comment 5, Appendix D below) about the use of backfill at Disposal Pit A/B (refer to Draft Final SEAD-12 Construction Completion Report, Appendix B, Table B-3R) that reportedly contained levels of Radium-226 in excess of derived DCGL. The data previously reported for Radium-226 has been revised. The attached response is provided to address this concern.

> In the Summary of Field Activities Technical Memorandum, Appendix D, Attachment D, section 3.1, analysis of Ra-226 is discussed. The project plan calls for utilizing the 609 keV Bi-214 gamma energy for quantifying Ra-226. The overburden samples results, however, were not reported in this manner. The Bi-214 values in Table B-3R will be used for Ra-226 assuming equilibrium.
>
> Note that the currently reported values for Ra-226 in Table B-3R, also have errors associated with them of +/- 90% of the sample value. This is indicative of the problem with directly quantifying Ra-226 via gamma spectroscopy. Using the Bi-214 with an equilibrium assumption is a preferred method for quantifying Ra-226. Table B-3R failed to incorporate this process as Table B-1R did. Table B-3R will be corrected. All overburden samples are less than project DCGLs using this analysis method.

Comment 2: The summary of the cancer risks and non cancer hazards in Appendix H and Section 3.6 of the CCR have subtracted post-removal risks from pre-removal risks. This presentation is misleading and inconsistent with EPA's 1989 Risk Assessment Guidance for Superfund, Part A. Revise the tables to list the pre-removal and post-removal risks and hazards side by side and remove the column of the risk summary tables entitled (Difference).

Response 2:

The difference column will be removed from the Appendix H presentation.

Comment 3: The Report mentions the Army's intention to prepare a Proposed Plan and Record of Decision (ROD) that calls for no further action at the site and that it will ultimately be released for unrestricted use, based, partially on the results of chemical analysis of soil samples collected from the excavations. However, the Report does not include an adequate resolution of organochlorine pesticides concentrations in soil samples collected from Pits C1 and C2 which exceed NYSDEC Unrestricted Use Soil Cleanup Objectives (SCOs), and the various metals analyses and associated calculated 95% UCLs.

[1] Email from Nidal Azzam, Senior HP, Scientist, USEPA Region 2, DEPP/RIAB to Julio Vazquez, RPM, Region 2 U.S. EPA – Region 2 dated 09/29/2010 that was subsequently forwarded on Stephen Absolom, U.S. Army Corps of Engineers, Seneca Army Depot Activity.

Revise the residual risk assessment included in Appendix H so that it incorporates the levels of metals and organochlorine pesticide concentrations in site soils used for backfill in order to demonstrate the final site risks are within EPA's risk management range for unrestricted use.

Response 3: The human risk assessments conducted for SEAD-12 (Pit A/B, and C [including both C1 and C2]) did evaluate potential hazards and or risks that may result due to the residual levels of organochlorine pesticides and metals that remained at the various disposal pit excavation sites at the completion of the removal action. Initially, the maximum detected concentration for all compounds detected in the soil at either of the disposal pit locations (A/B or C) at the completion of the removal action were initially screened against EPA guidance levels, and any compound found at a level in excess of the guidance value was retained for further consideration in the risk assessment. The EPA guidance levels used were either the residential soil Regional Screening Level (RSL) at full concentration for carcinogenic compounds, or the residential soil RSL at one-tenth the listed concentration for non-carcinogenic compounds. Any compound that exceeded the screening level, or for which there was no screening value, was retained for further evaluation under the risk assessment. This process is shown in Appendix H Attachment A and B, Table 2 for Disposal Pit A/B and C, respectively.

For metals only, a secondary screening step was also then applied to select the metals that were finally evaluated in the risk assessment. This secondary step involved the comparison of the individual disposal pit dataset to the Seneca background dataset, as had been done during the risk assessment completed during the remediation evaluation. This comparison was performed using the Wilcoxon Mann Whitney (WMW) test that is inherent within the EPA's ProUCL 4.00.04 software. Under the WMW test all reported concentrations for the disposal pits (A/B or C) and the SEDA background results are rank-ordered from lowest to highest, and then the Mean/Medium of the disposal pit's datasets is compared to comparable statistic for the SEDA background dataset. If the disposal pit result is lower than or statistically no different than (statistically indistinguishable) the SEDA background value, the metal was eliminated from further consideration in the risk assessment as possible effects can not be distinguished from those that result from background levels of the metals in the native soils. Only those metals that were shown to be at concentrations above background levels were then carried forward in the risk assessment that was conducted after the removal action. The results of the WMW tests are presented in Appendix H, Attachments A and B, Table 3 respectively for Disposal Pit A/B and C. The compounds retained and carries through the risk assessment process are summarized in Table 4, of Appendix H, Attachment A and B respectively for Disposal Pit A/B and C.

Following this approach, none of the organochlorine pesticides detected in samples from Disposal Pit A/B or in the backfill materials used at these sites were found to exceed EPA screening levels. At Disposal Pit C, alpha-BHC was found at a concentration above its EPA screening value, while there is no screening value identified for delta-BHC. On this basis both of these organochlorine pesticides were carried through the risk assessment process for soil. With reference to the metals, only sodium and thallium were retained an assessed during the risk assessments for soil.

Comment 4: The CCR indicates in Section 1.3.1, Location (Page 1-5) that there are four disposal pits that include A, B, C1 and C2; however, the risk assessment appears to have combined A and B as one exposure unit and C1 and C2 as a second exposure unit. The rationale for combining the four pits into two exposure units has not been provided. The HHRA should be revised to provide the rationale for evaluating the 4 pits as two exposure units.

Response 4: Section 1 of the *Technical Memorandum, Updated Risk Assessment, Radiological Waste Burial Sites* has been changed to read as follows to provide a transition describing why the four former disposal pts were evaluated as two separate exposure units in the risk assessment process (underlining indicates altered text).

> Parsons Infrastructure & Technology Group Inc. (Parsons) has prepared an update to the baseline human health risk assessment previously prepared for SEAD-12, the Radiological Waste Burial Sites, as part of the remedial investigation (RI) in 2002 (Parsons, 2002). The update was conducted to assess whether any change in risk occurred in the areas of historic disposal pits (Pits A, B, C1 and C2) that were excavated by the Army during the summer and fall of 2009 to recover military-related items and other forms of debris that were buried at the site during the Army's ownership and occupation of the property.
>
> After SEDA was listed as a National Priorities List (NPL) Site by EPA, the Army identified two areas within the former Weapons Storage Area (WSA) of the Depot as areas where hazardous substances had been handled by the Army and other tenants and possibly released to the environment. These areas were generally described as Radiological Waste Burial Pits and were designated as SEAD-12A (area north of Building 813) and SEAD-12B (area north of building 804). Geophysical investigations conducted as part of the Expanded Site Inspection identified the locations of the suspected burial pits at SEAD-12A and SEAD-12B. The geophysical investigation of SEAD-12A suggested that there were four burial areas, initially identified as Areas 1 – 4 located within the northeastern corner of the former WSA where burial pits were likely to exist. Burial pit locations 1 – 4 subsequently were designated as Disposal Pit A, B, C2, and C1, respectively during continuing site investigations. Subsequent to the identification of the suspected burial pits, test pits were dug to characterized materials that were contained in the pits, and soil, sediment, surface water and groundwater were collected from the region around the four identified burial areas, and the results obtained from the analysis of these samples suggested that there were hazardous substances present. Based on these data and results, the Army developed plans for a larger scaled remedial investigation of the sites.
>
> During the planning stages of remedial investigation (RI) for SEAD-12A and SEAD-12B, the Army conducted reviews of information and data contained in Depot files, and concluded that other areas within the greater WSA also had the potential to be sites where materials equivalent to those identified in SEAD-12A and SEAD-12B had been historically handled. Based on this determination, the Army expanded the scope of the RI beyond the bounds of SEAD-12A and SEAD-12B and conducted more extensive geophysical, chemical, and radiological investigations of the land within the greater WSA. The expanded investigation of the WSA resulted in the Army's decision to re-define SEAD-12 as a 360-acre site that extended from a southern boundary line, set just north of the Row A0300 storage igloos, outwardly to the western, northern, and

eastern perimeter security fences surrounding the WSA, exclusive of land previously designated as SEAD-63 (the Miscellaneous Component Burial Site) that is sited roughly halfway up the western border of WSA.

The results of the RI for SEAD-12 indicated that there were nine subareas of SEAD-12 that exhibited varying levels for potential hazardous substance release. These nine areas were identified as:

- Building 819 and EM-27;
- Building 815, Building 816, and EM-28;
- Disposal Pits A/B (a portion of the former SEAD-12A including burial pit areas 1 and 2, re-designated as Disposal Pit A and B);
- Disposal Pit C (a portion of former SEAD-12A including burial pit areas 3 and 4, re-designated as C2 and C1);
- Dry Waste Disposal Pit (former SEAD-12B);
- EM-5;
- EM-6;
- Open areas; and
- Building 715 Wastewater Treatment Plant.

At the conclusion of the RI, the Army prepared human health and ecological risk assessments for three of the nine areas identified in SEAD-12. These areas included Disposal Pit A/B, Disposal Pit C, and the Former Dry Waste Disposal Pit (previously designated as SEAD-12B). "These three areas were selected on the basis of site evaluation criteria including areas of documented activity associated with WSA activities; areas where RI investigations (geophysical and text pitting operations) confirmed significant 'military' activity, and proximity to buildings associated with activities of potential concern. Overall, the Former Dry Waste Disposal Pit area, Disposal Pits A/B, and Disposal Pit C were impacted to the greatest extent by historic activities in the Former Weapons Storage Area (SEAD-12)"[2]

In the summer and fall of 2009, the Army excavated the historic burial pit areas 1 – 4 (re-designated as A, B, and C including C2 [ESI area 3], and C1 [ESI area 4], respectively) to provide access to materials that were previously buried at the sites. The goal of this work was to allow the Army to recover, secure, demilitarize, and dispose of any military-related items that were present in the burial pits to ensure that they could not accessed in the future by future users/owners of the SEAD-12 property. During the recovery of the military-related items and other debris that was found in the historic approximately 5,400 cubic yards of material was excavated. After the military-related items and other debris was separated from the soil and fill that surrounded it, soil samples were collected and analyzed and the resulting data ~~was~~were used to assess if any of the excavated soil/fill could be re-used as backfill at the excavation sites. Based on the analysis of this data, approximately 2,300 cubic yards of soil was used as backfill at the locations of historic burial pits A and B. In addition, confirmatory soil samples were collected from the base, sidewall, and

[2] Section 6 "Human Health Risk Assessment", Page 6-1, 3rd paragraph, *Final Remedial Investigation Report at the Radiological Waste Burial Sites (SEAD-12)*, Parsons, August 2002.

perimeter of all of the excavation sites to verify that no unacceptable levels of residual risk remained at the sites.

The Army intends to transfer all of the land within SEAD-12, including the areas of the former Disposal Pits, for non-military reuse purposes. At present, a tenant is occupying some of the facilities within the bounds of SEAD-12 for commercial purposes, and this tenant has indicated that they may want to expand their operations in the future to include the land that is currently within the area where the historic burial pits were previously located. The Army has used the new analytical data developed from soil samples collected from the area of the historic disposal pits to update the previously accepted risk assessments for Disposal Pits A/B and C during the RI.

All estimations of risk or hazards previously determined for human receptors exposed to groundwater, surface water, or sediment within the SEAD-12 site remain as they were reported in the 2002 Remedial Investigation Report at the Radiological Waste Burial Sites (RI Report, Parsons, 2002). No samples of these three media were collected during the SEAD-12 Removal Action, and thus the data has not changed. Estimates of hazards and risks resulting from human exposure to these media have been incorporated directly from the SEAD-12 RI Report.

Section 2 of this memorandum provides background information for the risk assessment, section 3 identifies and presents the data used for the risk assessment, sections 4 through 7 summarize each step of the four-step risk assessment process (i.e., hazard identification, exposure assessment, toxicity assessment, and risk characterization), section 8 discusses the risk uncertainties associated with the risk assessment, section 9 lists reference materials used. Discussions presented in each of these sections focus predominantly on changes that result due to the update of the location-specific soil datasets used.

Comment 5: It is unclear why the excavations at the historic disposal pits were delineated based on SCOs when the human health risk assessment (HHRA) used the lower of EPA's Regional Screening Levels (RSLs) or the SCOs. As a result, it is unclear if the extent of the excavations is adequate since the RSLs for many of the compounds are significantly lower than the SCOs. For example, the RSLs for the carcinogenic polycyclic aromatic hydrocarbons (PAHs) are three to four orders of magnitude lower than the SCOs. Clarification is required as to why EPA screening levels were not considered when delineating the extent of excavations. Ensure that the impact of this approach is also discussed in the sensitivity assessment in the residual risk assessment.

Response 5: Tables 3-6 to 3-10 will be modified to provide comparison of final soil concentrations to EPA's Regional Screening Levels in addition to the State SCOs.

The Army used State of New York SCO levels and background concentrations for metals as the benchmark against which preliminary decisions regarding the completion of removal actions for soil are made. It is the Army experience that achievement of State SCO values is generally necessary to ensure State concurrence with completion of the action, while the risk assessment process is required to attain EPA approval of the action.

During construction, it is the Army's process to assess the effectiveness of soil removal action on an action specific unit-wide or holistic basis (e.g., Disposal Pit A, B, C1, C2 in this case) and not on an

individual sample point-by-point basis by comparing the 95th upper confidence limit of the arithmetic mean (henceforth 95th UCL) of the specific unit-wide soil dataset to the State SCO or background level for metals. Under this approach, individual sample points may remain at concentrations that exceed State SCOs and EPA RSLs, but the 95th UCL are below or roughly equivalent to levels that will be accepted by the State.

The risk assessment process used by the Army evaluates all data for contaminants detected against a set of modified EPA RSLs for residential exposures. The RSLs for the residential exposure are modified by comparing listed values that are reduced by a faction of 10 (i.e., RSL divided by 10 or multiplied by a factor of 0.1) for non-carcinogenic compounds or at face value for carcinogenic compounds.

Comment 6: As was previously requested, revise the Report to indicate what procedures were implemented to meet current NYSDEC guidance on abandonment of monitoring wells. The response to comments indicates that the monitoring wells were removed in their entirety, since they were on the edges of the excavations. Figures 1-2 and 1-4 of the May 2009 Work Plan for Removal Action at the Radiological Waste Burial Sites (SEAD-12) show that not all of the decommissioned monitoring wells were located in close proximity to the excavation extents. Further, excavation of existing monitoring wells may not result in an equivalent decommissioning process as what was described as required by the State of New York at SEAD-5. Further clarification is necessary to clearly substantiate that the monitoring wells were removed in a manner consistent with the State of New York's requirements.

Response 6: The 10 wells that were removed during the removal action were removed to allow field personnel to conduct geophysical surveys using Schonstedt and EM-31 survey equipment to identify potential buried metal objects. Initially, these surveys were conducted on areas within a defined 25 to 35 foot buffer zone around each of the disposal pit excavations; however, once buried debris were found within these bounds around Disposal Pit C2, the Schonstedt and EM-31 surveys were conducted throughout the area previously defined as SEAD-12A (i.e., northeast corner of the WSA, extending from the northern and eastern security fence lines to the eastern edge of Service Road No. 1, and the northern boundary of the wooded area to the south of the site.

The bottom of the wells was not punched out, and grout was not added to the well upriser or screened area before they were excavated from the site. During well removal, the excavator was used to dig out the well by opening a test pit that extended from grade level to bedrock. All components of the well were removed and disposed of as C&D debris. The well excavation sites were subsequently backfilled and regraded using native soils surrounding the former well site or fill from the Overburden/C1 pile in a manner that was equivalent to the backfill operations done for the excavated burial pit sites.

Comment 7: The Report does not clearly substantiate that excavation chemical confirmatory sampling presented in Section 3.4.6.1, Conventional Chemical Analysis, was followed. For example, this section states, "Excavation perimeter samples were taken at locations approximately 1 to 2 feet back from the edge of the pit excavations, adjacent to location of pit sidewall samples." However, Figure 3-10, Disposal Pit C2 Final Sample Locations from Sept-Oct 2009, includes multiple sidewall soil samples with no

correlating perimeter samples. Further, the floor soil sample locations presented in the Report figures do appear to be grid-specific. Revise the Report to address all sample location discrepancies and present a clear description of sampling activities to support the proposed unrestricted land use scenario at the site. If sampling protocol was not followed explicitly, then a discussion of this and the resulting impacts (if any) need to be presented.

Response 7: Section 3.4.6.1 has been changed to read as follows

> Confirmatory soil samples from the base of the excavation were generally collected as a discrete grab sample from a unique location at a frequency of one sample per 2,500 square feet (sf) or less of excavation bottom, except in areas where the excavation extended to the bedrock surface and all soil was removed, in accordance with the FSP (Parsons, 2008a). At locations where the base of excavation was greater than 2 feet below the adjacent ground surface, sidewall samples were collected at a rate of one soil sample for every 50 linear feet (lf) or less. Sidewall samples were collected at a depth halfway between the base of the excavation and the adjacent ground surface or sloped bench elevation. Excavation perimeter samples were taken at locations approximately 1 to 2 feet back from the edge of the pit excavations, adjacent to the location of excavation pit sidewall samples. The minimum number of confirmatory samples required for each excavation is listed in **Table 3-1.** The approximate location of the initial confirmatory soil samples collected from four excavation pits (A, B, C1, and C2) are shown on **Figure 3-2.** The actual placement of sample locations on the map has been moved from survey coordinate locations to promote readability.

Text previously appearing on page 3-23 of the Draft Final Construction Completion Report under the header Pit C2, first paragraph has been modified to read as follows:

> At the conclusion of excavations at Pit C2, 43 confirmatory soil samples were collected and analyzed for conventional chemical COCs. These included eight floor samples (six samples and two duplicates), 15 perimeter samples, and 20 sidewall samples (19 samples and a duplicate). Excavation floor samples were not collected in grid cells I2 and J3 because the excavations in these areas extended to bedrock. Paired sidewall and perimeter samples were not collected at locations S12EXSW-J-2-02 and S12EXSW-I-3-04 due to the gentle slope of the excavations that were present at these locations. A perimeter sample was not collected from grid cell I-2-03 where a sidewall sample (i.e., S12EXSW-I-2-03) was collected from a limited excavation that was opened to remove a cache of debris that was identified during geophysical surveys conducted as part of the final removal action verification activities. Summary analytical results for these samples are provided in **Table 3-9.** The full data set for these samples is provided in **Appendix B Table 1C**. Analytical results for the samples that were excavated are provided in **Appendix B Table 2**. The approximate location of the final confirmatory soil samples is shown in **Figure 3-10**. The actual placement of sample locations on the map has been moved from survey coordinate locations to promote readability.

Comment 8: Modify Table of Contents to include subsections. For example, Section 3.4.6.2 "Radiological Analyses" is missing from the Table of Contents.

Response 8: The Table of Contents will be updated to include all numbered section and subsection headers.

Comment 9: Rename Appendices to avoid confusion between Appendices to the report and Appendices to the Appendix D. Appendices to the report and Appendices to the Appendix D have the same titles.

Response 9:

The names of appendices to the radiological report will be changed to Attachments. The word Appendix in the text of the Cabrera Report will be replaced by "Attachment".

SPECIFIC COMMENTS

Comment 1: Section 3.3, Dust Control Monitoring, Page 3-2: According to this section, air monitoring measurements were collected during the first month of the project; however, the daily report from July 27, 2009 included in Appendix A does not indicate that air monitoring equipment was on-site during this day. Revise the Report as was previously requested to address the discrepancy between the daily reports and the information presented in Section 3.3. Clarifying text should be provided to indicate that in some instances professional judgment resulted in air monitoring equipment not being present on site each day (if this was the case).

Response 1: The Daily Report for July 27, 2009 accurately reflect that dust monitors were not at the site on that day and also notes that the weather for the day included rain. The Site Manager and Site Health and Safety Officer opted not to conduct air monitoring on that day because the weather conditions favored low windborne dust levels. The referenced section has been revised as is shown below.

> Air monitoring measurements were collected periodically during the first three weeks ~~month~~ of the removal action (July 13 – August 14, 2009), during periods when the greatest amount of excavation and material handling activities occurred. Air monitoring frequency decreased once the majority of the disposal pit excavation, transport, and material layout operations, which required more vehicular travel, were completed and site activities moved more into material sorting, screening and staging which involved shorter driving distances and fewer trips. The data collected during the monitoring are presented in **Appendix I**. The presented data show that fugitive dusts were not identified as a concern during the excavation ~~this~~ phase of the work due to the low number and slow operating speeds of site vehicles (e.g., articulated trucks, excavator, dozer, etc.). Furthermore, the clay-till composition of the native soil materials found at the site tends to clod which inherently reduces windborne dust levels. The professional judgments of the site manager and the site health and safety officer dictated when air monitoring and conventional methods of dust suppression (e.g., water spraying) were used to control dust generated during construction.

Comment 2: Section 3.4.1, Pit Excavations, Page 3-4: The text states that, "Soil removal done to promote sidewall and slope stability resulted in the excavation of native soils from beyond the edge of the former burial pit debris cache;" however, Figure 3-9, does not indicate what the limits of excavation are or if they include the slope stabilization benching as was indicated by the original comment response. In addition, the figure does include a label for the "---" symbol. Revise this figure as was previously requested and committed to in the comment response in order to clarify the extent of the excavation, including any benching and to define all symbols used.

Response 2: Figure 3-9 will be revised to provide this information.

Comment 3: Appendix H: Section 3.1, Soil Data- Disposal Pit A/B, Page 4: This section states that remedial investigation (RI) sample data collected within the limits of the soil that was excavated during the removal action were "eliminated from the Pit A/B soil dataset" and replaced by analytical results from

confirmatory samples collected from excavations opened for Pit A and B and soil samples collected from the stockpile soils from each of the four disposal pit excavations. Upon review of Table I, however, it appears that soil sample data that were located within the excavation (ex. SB12-2, SB12-4, TP 12-1B) were used in the risk assessment dataset and not removed as per section 3.1. If an RI soil sample was removed from the area, the data associated with the sample is no longer part of the risk assessment data set. This discrepancy between the text and table applies to those samples in Table 1, Status of SEAD-12 RI Soil Samples Associated Previously Used for RI Risk Assessment, that are labeled as "within excavation" and the final deposition labeled "retained" and data status "used." Please clarify why data from samples located within the excavation were retained in the risk assessment as this labeling implies that these samples were within the excavation and were actually removed.

Response 3:

The dataset used in the Risk Assessment will be revised to remove all ESI and RI samples that are believed to have been removed during the disposal pit removal action. A summary of all the potential historic samples affected by the removal action will be provided to define why samples were retained or removed from risk assessment evaluation process.

Comment 4: Appendix H: Section 4.0 Hazard Identification, Page 4 through 6: Throughout this section, the results for the constituents of potential concern (COPC) selection process and the background comparison are not discussed. Instead, the text refers the reader to tables without any summary or conclusive statements in the text. This section should include some summary statements regarding the findings of the COPC selection process and the background analysis. Revise Section 4 to include summary or conclusive statements regarding the results for COPC selection process and the background comparison performed.

Response 4: The following text will be added to the risk assessment to address the COPC selection and evaluation process.

> All contaminants that were detected in soil samples that remained in the vicinity of one of the removal action excavation sites (e.g., post excavation confirmatory soil sample, ESI or RI sample not removed during the removal action, backfill soil characterization sample, etc.) were evaluated for inclusion in the updated human health risk assessment that was performed for the Disposal Pit A/B and C sites. Soil contaminants that were evaluated in this risk assessment (i.e., Contaminants of Potential Concern [COPCs]) were selected by comparing maximum detected concentrations (MDCs) left at an exposure point location (i.e., Disposal Pit A/B or C) with USEPA Regional Screening Level (RSLs) for residential soil. Comparator RSLs for carcinogenic compounds were used at full value, which corresponds to a target cancer risk of $1x10^{-6}$; comparator RSLs for non carcinogenic compounds were reduced by a factor of 10 (i.e., 0.1 times the listed RSL value), which corresponds to a hazard quotient of 0.1. Chemicals with concentrations below the comparator RSLs were eliminated from the list of COPCs evaluated in ~~this~~ the risk assessment. Chemicals with no available screening values and chemicals with maximum detected concentrations above the screening values were considered COPCs. In addition, all members of a chemical class that had any one member selected as a COPC were considered COPCs (e.g., all

detected carcinogenic polycyclic aromatic hydrocarbons ~~(~~[cPAHs]) were retained as COPCs if any one cPAH was identified as a COPC based on the aforementioned screening process).

Fifty-six (56) soil contaminants, including 10 VOCs, 20 SVOCs, five pesticide/PCBs and 22 metals were initially evaluated as potential COPCs for Disposal Pit A/B. The maximum concentration for each COPC was then compared to the appropriate residential soil RSL value (i.e., full value for carcinogenic compound or 0.1 time non-carcinogenic residential soil RSL value) and if the maximum concentration remaining at the site exceeded the RSL comparator value, the compound was retained for further evaluation during the risk assessment. Based on this determination, three cPAHs and seven metals were initially retained as COPCs, and due to the selection of three of the cPAHs, four other cPAHs that were also detected in the soil at Disposal Pit A/B, but which were not observed to exceed screening values, were also retained as "chemicals of the same group" for further evaluation in the risk assessment. In addition, three other SVOCs and two other metals were also retained for further evaluation under the risk assessment based on the determination that no comparator RSL screening value existed for them. The soil screening results for Disposal Pit A/B are summarized in **Attachment A Table 2**.

Data for the identified metal COPCs were then compared to SEDA background soil concentrations found for the same metals to assess whether there was any indication that the metals found at the disposal pit excavation site could be attributed to the release of material from activities historically conducted in the AOC, or could be associated with natural conditions. This comparison had been used and allowed during the risk assessment performed during the RI, and was repeated in the update to ensure that data considered in both risk assessments were equivalent. The comparison to background was performed using the Wilcoxon Mann-Whitney (WMW) Test

~~Soil screening tables summarizing the COPC identification process for soil are presented in:~~

- ~~Pit A/B: **Attachment A, Table 2**.~~
- ~~Pit C: **Attachment B, Table 2**.~~

~~Once screened, Disposal Pit soil data for metals were also compared to the SEDA background dataset using the Wilcoxon-Mann-Whitney (WMW) test~~ which is provided in the EPA's ProUCL Software package (version 4.00.04). This analysis procedure was used in place of the Wilcoxon Rank Sum test that was applied to the SEAD-12 datasets during the SEAD-12 RI.

The WMW ~~test~~ Test evaluate~~tests~~ whether measurements from one population tend to be larger or smaller than those found in the other population on the assumption that the dispersion of the two sample population distributions are roughly the same. The procedure determines which distribution is higher by comparing the relative ranks of the two datasets when the data from both sets are sorted and rank-ordered in a single list. The underlying assumption in the WMW Test is that any difference between background and site concentration distributions results due to a shift in the sample population's mean or median that is attributable to the presence of site-specific contamination adding to background levels.

The hypotheses used in the application of the WMW test are:

Ho (the null hypothesis):	The populations from which the two data sets have been drawn have the same mean.
Ha (the alternative): (hypothesis)	The measurements from the site population tend to exceed those from the background populations.

where Ho is assumed to be true unless the test indicates Ho should be rejected in favor of Ha. If Ho cannot be rejected, then it is accepted that the distribution of measurements in the background area is very similar in shape and central tendency (average) to the distribution of measurements in the area being investigated. The WRS Test does not require that either data set by normally distributed.

The results of the WMW Test for the nine metals retained after the comparison to RSL values are summarized in **Attachment A Table 3**. As is reflected in this table, the residual metal concentration statistic (i.e., Mean WMW Value) for six of the nine retained metals is lower than the comparable value reported sample concentrations in the SEDA background dataset. Therefore, the identified concentrations of these seven metals in the vicinity of Disposal Pit A/B can not be distinguished from background concentrations and there is no indication that a release has occurred at the site. The WMW analysis results for two other metals (i.e., selenium and thallium) indicate that levels of these two metals found in the vicinity of former Disposal Pit A/B are higher than those identified in the background soil so these two are retained for further analysis under the risk assessment. The WMW results for sodium provided conflicting information as the results indicate that all of the tested hypotheses (i.e., site equals background, site greater than or equal to background, site less than or equal to background) were true. However, since it is not mathematically possible for two datasets to be greater than and less than each other at the same time it is assumed that the sodium concentrations found at Disposal Pit A/B and the background are equal , and that no release of sodium is likely to have occurred at Disposal Pit A/B. Therefore, based on risk assessment pre-screening and background evaluations, 12 COPCs were evaluated for soil in the updated risk assessment for Disposal Pit A/B.

Fifty-eight (58) soil contaminants, including seven VOCs, 18 SVOCs, seven pesticides and 24 metals were initially evaluated as potential COPCs for Disposal Pit C. Again, the maximum concentration detected for each of the contaminants at Disposal Pit C was compared to the appropriate residential soil RSL value (i.e., full value or 0.1 time soil RSL value, as appropriate) and the compound was retained for further evaluation in the risk assessment if the maximum exceeded the screening value. Based on this determination, four cPAHs, one organochlorine pesticide and eight metals were retained as COPCs. Four other SVOCs, one organochlorine pesticide, and two metals were also retained for further evaluation based on the determination that no comparator RSL screening value existed for them. Due to the retention of the four cPAHs, the other three cPAHs were also retained as "chemicals of the same group", and one additional organochlorine pesticide was retained since it was an isomer of the two other organochlorine pesticides that were retained. The soil screening results for Disposal Pit C are summarized in **Attachment B Table 2**.

The results of the WMW Test for the ten metals retained after the comparison to RSL values are summarized in **Attachment B Table 3**. As is reflected in this table, the residual metal

concentration statistic (i.e., Mean WMW Value) for eight of the 10 retained metals is lower than the comparable value reported sample concentrations in the SEDA background dataset. Therefore, effects from these metals can not be distinguished from those of background conditions. Background data was not available for the remaining two metals (i.e., sodium and thallium) so these were retained for further processing in the risk assessment. Therefore, based on risk assessment pre-screening and background evaluations, 16 COPCs were evaluated for soil in the updated risk assessment for Disposal Pit C.

Comment 5: Appendix H: Section 1.0 Risk Characterization, Page 9 through 11: The cancer risks presented in the summary tables throughout this section are underestimated since they do not include the cancer risks associated with radionuclides. According to EPA guidance, OSWER Directive 9200.4-18, August 1997, *Establishment of Cleanup Levels for CERCLA Sites with Radioactive Contamination,* and EPA's 1989 Risk Assessment Guidance for Superfund, Part A, the risks need to be summed to provide an estimate of the combined risk presented by all carcinogenic contaminants. Revise Appendix H and Section 3.6 of the CCR to include radionuclide risks and sum these risks with the chemical risk to obtain a total site risk. Note that this applies to the pre-removal risk results as well.

Response 5: See response to General Comment 1 above.

Comment 6: Appendix H: Section 1.1 Risk Characterization Results, Page 9 through 11: Throughout the risk summaries for each area, the risk results are compared to EPA's risk management range of 1E-06 to 1E-04 and if the risks fall within this range, the risks are deemed "acceptable" however, carcinogenic risks falling within EPA's risk management range of 1E-06 to 1E-04 are not necessarily deemed acceptable. Only EPA can make determinations about whether incremental excess lifetime cancer risk or non carcinogenic hazard levels are appropriate. The risk summaries should be revised to remove the word "acceptable" and only compare risks to EPA's risk management range.

It is further noted that cancer risks increased for a number of exposure scenarios throughout this section and an explanation for this has not been provided. It is possible that the reduced data set (e.g., removal of excavated data points) may have affected the estimation of exposure point concentrations due to a reduced population of data. However, it is also possible that higher concentration data were evaluated in the HHRA since New York's SCOs were used to delineate excavations rather than the lower of SCOs or RSLs. The HHRA should include an uncertainty analysis to discuss and summarize the uncertainties inherent in each step of the HHRA process as well as uncertainties associated with the methodology of evaluating pre- and post-removal risks.

Response 6: The word "acceptable" will be removed from appropriate location within the risk assessment discussion.

The increased cancer risk noted for soil exposures result due to a difference in how the risk were computed for the various receptors between the risk determination presented in the RI Report and what has been presented in the Draft Final Construction Completion Report for SEAD-12. Risks computed in the RI for all receptors except the construction worker were based only on sample results that were collected from the top two feet of the soil at the sites. Samples included in the construction workers soil

exposure point concentration included samples that extended down to 15 feet below grade. For the risk assessment conducted at the conclusion of the Removal Action, soil point exposure concentrations for all receptors were derived from samples that were collected from the 0 to the deepest level of the excavation. This change in calculation approach was used because prior to the removal action there was a clear distinction between soil that was in the top two feet of the soil column versus what was present at deeper locations. Opening of the pits during the removal action, made all of the deeper soils accessible to all receptors at the time the Removal Action was completed.

The total depth soil exposure point concentrations used during the RI had higher concentrations than comparable exposure point concentrations reported for the 0 to 2 foot level during the RI. The RI total depth soil exposure point concentrations were also higher than total depth RA dataset soil point concentrations. However, the RA total depth soil exposure point concentrations were higher than the RI shallow soil point exposure point concentrations which results in the increases noted in the risk calculations.

Discussion of this effect will be added to the risk assessment discussion as it is updated to reflect changes in the datasets that result due to findings of Specific Comment 3 above.

Comment 7: Page 3-12, Paragraph 4: Provide Certificate of Compliance and HP Instrument QC Field Log. These documents are needed to assess the instrument performance.

Response 7: Field QC logs and calibration certificates for radiological instrumentation are located in Appendix D, Attachment C. Note: No measurements were documented using the Canberra Inspector 1000 portable MCA. The MCA was used as a quick isotope identifier while the project was awaiting sample analysis. Off site sample analysis was used to identify radionuclides of concern.

Comment 8: Page 3-14, Paragraph 5: Clarify that the systematic sampling points were selected for Class 1 survey units according to the MARSSIM guidelines. For Class 1 survey units MARSSIM recommends a systematic pattern installed on the survey unit.

Response 8: Class I survey unit sample points were selected as described in Section 3.6. Although not a grided pattern, the systematic sample points for radiological sampling were chosen to correspond with the chemical sample locations as the sampling frequency for the samples were similar. Grid squares were used to ensure proper sampling frequency. Sampling locations along the excavation perimeter were chosen per unit linear length rather than per unit area.

Comment 9: Page 3-15, Paragraph 5: Correct references to Appendices to reflect their actual locations. Raw analytical results were found in Appendix B of Appendix D of the Draft Final Report, not in the Appendix B of the Report. Chain of custody was found in Appendix E, not C.

Response 9:

Tabulations of final confirmatory sample radiological data reported by GEL are presented in Appendix B Tables B-1R and B-3R. The Cabrera Services Radiological Summary Report presented as Appendix D in the Draft Final Construction Completion Report will be revised to identify appendices to the Cabrera

Report as Attachments. Once this change is made, the Final Status Survey results will be located in Attachment B of Appendix D (i.e., Cabrera Services Summary Report).

Comment 10: Page 6-2, Paragraph 2: Specify radiological dose pathway scenario for which "10 millirems per year" are applied. Specific pathway scenario is not provided. "10 millirems per year" taken out of context of the specific scenario may mean different outcomes for the future site use.

Response 10: Specific pathway scenario for the 10 mrem per year limits was taken from the License Termination Plan (LTP), 2003, and was not independently developed for this project at SEAD-12. Wide Area DCGLs were also taken directly from the LTP. Resident Farmer was the scenario selected in the LTP for development of the DCGLs.

Comment 11: Page 6-2, Paragraph 2: Clarify what version of NUREG-1575 document was used as MARSSIM guidance for Final Status Survey. NUREG·1575 document has been revised since the revision referenced in the report.

Response 11: NUREG-1575, August, 2000 version is the correct reference.

APPENDIX D

Comment 1: Page 1-2, Paragraph 6; Page 1-3, Paragraph 2: Provide numerical value and explain the meaning, derivation, application and significance of the "worker DCGL". "Worker DCGL" is mentioned with no explanation provided.

Response 1: The inclusion of the word "worker" prior to DCGL was not intended to define a new or different DCGL, and will be removed from the report Final to avoid confusion.

Comment 2: Page 1-4, Paragraph 6; Page 3-1, Paragraph 4: Provide information on (i) what "critical group" was used in dose pathway analyses, (ii) in what scenario "10 mrem" limit was used and (iii) whether this limit was applied on annual basis. Information is needed to assess applicability of DCGLs.

Response 2: Specific pathway scenario for the 10 mrem per year limits was taken from the License Termination Plan (LTP), 2003, and was not independently developed for this project at SEAD-12. Wide Area DCGLs were also taken directly from the LTP. Resident Farmer was the scenario selected in the LTP for development of the DCGLs.

Comment 3: Page 2-3, Paragraph 2; Page 3-5, Paragraph 4: Provide Figures 2-1, 3-1. Provided Figure 2-1 does not display the content as referred to in text. Figure 3-1 is not provided in Appendix D.

Response 3: Figures 2-1 and 3-1 are located at the end of the Appendix D text, prior to the attachments and appear to correspond to the accompanying text.

Comment 4: Page 3-5, Paragraph 6: Provide sampling points on systematic grid as recommended by MARSSIM for Class 1 survey units. Sample points displayed in Figures 5-1 - 5-6 does not appear to be on a systematic triangular or quadratic grid.

Response 4: Class I survey unit sample points were selected as described in Section 3.6. Although not a grided pattern, the systematic sample points for radiological sampling were chosen to correspond with the chemical sample locations as the sampling frequency for the samples were similar. Grid squares were used to ensure proper sampling frequency. Sampling locations along the excavation perimeter were chosen per unit linear length rather than per unit area. Figures 7-1 through 7-7 show specific sample locations.

Comment 5: Page 3-24, Paragraph 1: Provide discussion on why results for Ra-226 in Table B-3R exceed DCGL. Section 1.4 states that Appendix B provides chemical and radiological confirmatory soil sample results. Seven out of ten sample results for Ra-226 concentration exceed DCGL of 1.7 pCi/g and the rest three exceed it if one sigma is added.

Response 5: In the Summary of Field Activities Technical Memorandum, Appendix D, Attachment D, section 3.1, analysis of Ra-226 is discussed. The project plan calls for utilizing the 609 keV Bi-214 gamma energy for quantifying Ra-226. The overburden samples results, however, were not reported in this manner. The Bi-214 values in Table B-3R will be used for Ra-226 assuming equilibrium.

Note that the currently reported values for Ra-226 in Table B-3R also have errors associated with them of +/- 90% of the sample value. This is indicative of the problem with directly quantifying Ra-226 via gamma spectroscopy. Using the Bi-214 with an equilibrium assumption is a preferred method for quantifying Ra-226. Table B-3R failed to incorporate this process as Table B-1R did. Table B-3R will be corrected. All overburden samples are less than project DCGLs using this analysis method.

Comment 6: Page 7-2, Paragraph 3; Page 7-3, Paragraphs 1-3; Pages 3-24 - 3-25: Provide Figures 7-1 - 7. Figures are not provided in Appendix D.

Response 6: Figures 7-1 through 7-7 are located in Appendix D following the text, prior to the attachments.

Army Response to Comments to the Information Contained in the Table Titled "Responses to Oleg Povetko's Comments on RESRAD Input Parameters for SEAD-12 Risk Assessment" (File Titled "Responses to RESRAD Input Parameters Comment Matrix - SEAD 12_051911.xlsx" Received on 05/25/2011).

Prepared by Oleg Povetko on 06/09/2011

Army Response Issued: 07/18/2011

Table's General Comment #1.

The document titled "Draft Final Construction Completion Report for the Radiological Waste Burial Pits Site (SEAD-12), Seneca Army Depot Activity, Romulus, New York; Contract W912DY-08-D-0003, Delivery Order 0003W912DY-08-D-0003, Delivery Order 0003" dated June 21, 2010, specifies Institutional/Training land use for SEAD-12 area. According to the report, Seneca County Industrial Development Authority In 2005, the SCIDA revised the planned future use of Depot property by modifying portions of the original Conservation/Recreation parcels to include Institutional Training, Residential/Resort, Green Energy, Development Reserve, Training Area, and Utility uses. The planned future land use for SEAD-12 is currently designated as Institutional/Training as shown on Figure 1-2. Although not explicitly stated in the scenario description, it appears that Residential Receptor scenario assumes no consumption of on-site grown plants or vegetables and no any other on-site farming activities. If this is the case, explain (i) how these land use restrictions will be conveyed to future land owner(s) and/or leaser(s), (ii) what institutional controls must be put in place to maintain these land use restrictions, and (iii) how the deed restrictions will be maintained during future land transfers.

Response

The intake exposure pathways previously proposed for the RESRAD model were consistent with the pathways that were used in the original Risk Assessment that was prepared and had been accepted by the EPA at the time of the submittal of the Remedial Investigation Report (Parsons 2002). However, based on the EPA's current comments, the Army has modified the proposed RESRAD input parameters associated with the removal action to include the food ingestion pathways to which resident farmer may be exposed. Please see the revised RESRAD input parameter listing that is provided with this response. Also if there is any concern for these input parameters, please let us know immediately.

The Army assumes that the inclusion of the additional ingestion pathways within the RESRAD analysis renders the EPA's three follow-up questions about land use controls and process moot until the full results of the chemical and radiological risk assessment are summarized. . It is our plan to complete the revised risk assessment and move forward with the submittal of a revised Draft Final Proposed Plan and Draft Record of Decision for SEAD-12 (and SEAD-72) in which actions required are based on the finalized data.

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ASSIGNED VALUES FOR EXPOSURE PARAMETERS USED IN RESRAD MODEL

Proposed by Parsons – Submitted on 7/18/2011

DEFAULT AND RECOMMENDED VALUES FOR RESRAD INPUT PARAMETERS

RESRAD Version 6.5					Parameter Justification	
Parameter	**Code**	**Default Value**	**User Input Value**	**Units**	**Comments**	**Reference**
PATHWAY SELECTIONS						
External Gamma	N/A	Active	Active	N/A	RESRAD default used.	Parsons Engineering Science 2002
Inhalation (without radon)	N/A	Active	Active	N/A	RESRAD default used.	Parsons Engineering Science 2002
Plant Ingestion	N/A	Active	Active	N/A	RESRAD default used.	Parsons Engineering Science 2002
Meat Ingestion	N/A	Active	Active	N/A	RESRAD default used.	Parsons Engineering Science 2002
Milk Ingestion	N/A	Active	Active	N/A	RESRAD default used.	Parsons Engineering Science 2002
Aquatic Foods	N/A	Active	Active	N/A	RESRAD default used.	Parsons Engineering Science 2002
Drinking Water	N/A	Active	Active	N/A	RESRAD default used.	Parsons Engineering Science 2002
Soil Ingestion	N/A	Active	Active	N/A	RESRAD default used.	Parsons Engineering Science 2002
Radon	N/A	Inactive	Inactive	N/A	Not applicable per cited reference.	NRC, 1994
CONTAMINATED ZONE PARAMETERS						
Area of contaminated zone	AREA	10,000	**2160** (Pit A/B) **8403** (Pit C)	m^2	Site-specific values were used.	Cabrera 2011
Thickness of contaminated zone	THICK0	2	**0.15** (Pit A/B) **0.15** (Pit C)	m	Site-specific average depth of contamination	Cabrera 2011
Length parallel to the aquifer	LCZPAQ	100	46.5 (Pit A/B) 92 (Pit C)	m	Square root of the area of contamination.	Calculated
Times for calculations	TI	1, 3, 10, 30, 100, 300, 1000	1, 3, 10, 30, 100, 300, 1000	yr	RESRAD defaults for calculation times.	ANL 1993
COVER AND CONTAMINATED ZONE HYDROLOGICAL DATA						
Cover depth	COVER	0	0	M	As a conservative approach, no cover depth was assumed.	ANL 1993 (Section 31)
Density of cover material	DENSCV	1.5	**N/A**	g/cm^3	Lack of cover depth precludes an assigned value for this parameter.	ANL 1993 (Section 2)
Cover erosion rate	VCV	0.001	**N/A**	m/yr	Lack of cover depth precludes an assigned value for this parameter.	ANL 1993 (Section 14)

DEFAULT AND RECOMMENDED VALUES FOR RESRAD INPUT PARAMETERS

RESRAD Version 6.5					Parameter Justification	
Parameter	**Code**	**Default Value**	**User Input Value**	**Units**	**Comments**	**Reference**
Density of contaminated zone	DENSCZ	1.5	**1.28**	g/cm^3	Site-specific value was chosen based on the average of silt loam and clay loam soil. (Table 2.1)	ANL 1993 (Section 2)
Contaminated zone erosion rate	VCZ	0.001	**0.0006** **0.00006**	m/yr	Resident (Assume 2% slope) All others	ANL 1993
Contaminated zone total porosity	TPCZ	0.4	**0.37**	Unitless	Site-specific value	ANL 1993 (Section 3) USAEHA 1984
Contaminated zone field capacity	FCCZ	0.2	**0.06**	Unitless	Site-specific value	Parsons Engineering Science 1996
Contaminated zone hydraulic conductivity	HCCZ	10	**29**	m/yr	Assumed to be a factor of 10 less than the site-specific saturated zone hydraulic conductivity of 290 m/yr of the *SEAD-12 RI Report* reference.	ANL 1993 (Section 5) Parsons Engineering Science 2002
Contaminated zone b parameter	BCZ	5.3	**7.75**	Unitless	The contaminated zone b parameter was selected from Table 13.1 of the reference for the silty clay loam.	ANL 1993 (Section 13)
Humidity in air	HUMID	8	**8**	g/m^3	RESRAD default used.	ANL 1993
Evapotranspiration coefficient	EVAPTR	0.5	**0.7**	Unitless	See calculation in footnote (1) below	Parsons Engineering Science 1996
Wind speed	WIND	2	**3**	m/sec	Estimated using wind rose for Syracuse, NY	Parsons Engineering Science 2002
Precipitation	PRECIP	1	**0.75**	m/yr	Site-specific value based on reported 36.1 inches per year	ANL 1993 (Section 9), Parsons Engineering Science 2002
Irrigation	RI	0.2	**0**	m/yr	No irrigation onsite.	Parsons Engineering Science 2002
Irrigation mode	IDITCH	Overhead	Overhead	Unitless	The "Overhead" and "Ditch" designations are independent of the depth of contaminated zone and have no significant impact on the RESRAD evaluation. The RESRAD default designation was selected.	ANL 1993
Runoff coefficient	RUNOFF	0.2	0.2	Unitless	The RESRAD default value was selected based on reference value for intermediate combinations of clay and loam.	ANL 1993 (Section 10)

DEFAULT AND RECOMMENDED VALUES FOR RESRAD INPUT PARAMETERS

RESRAD Version 6.5					Parameter Justification	
Parameter	**Code**	**Default Value**	**User Input Value**	**Units**	**Comments**	**Reference**
Watershed area for nearby stream or pond	WAREA	1.00E6	**13000000**	m^2	Site-specific value (Appendix E, Table 2 of the reference)	ANL 1993 (Section 17), Parsons Engineering Science 2002
Accuracy for water/soil computations	EPS	0.001	0.001	Unitless	RESRAD default used.	ANL 1993
SATURATED ZONE HYDROLOGICAL DATA						
Density of saturated zone	DENSAQ	1.5	1.5	g/cm^3	RESRAD default used.	ANL 1993 (Section 2)
Saturated zone total porosity	TPSZ	0.4	**0.37**	Unitless	Site specific value	ANL 1993 (Section 3) USAEHA 1984
Saturated zone effective porosity	EPSZ	0.2	**0.175**	Unitless	Calculated value	Parsons Engineering Science 1996
Saturated zone field capacity	FCSZ	0.2	0.2	Unitless	RESRAD default used.	ANL 1993
Saturated zone hydraulic conductivity	HCSZ	100	**290**	m/yr	Saturated zone hydraulic conductivity for clay was based on a geometric mean hydraulic conductivity of 9.22×10^{-4} identified on Page 3-19 of the reference.	Parsons Engineering Science 2002
Saturated zone hydraulic gradient	HGWT	0.02	**0.011**	Unitless	Based on the average of the northern and southern values reported on page 3-19 of the reference.	Parsons Engineering Science 2002
Saturated zone b parameter	BSZ	5.3	5.3	Unitless	RESRAD default used.	ANL 1993 (Section 13)
Water table drop rate	VWT	0.001	**0**	m/yr	Assumption	ANL 1993 (Section 18)
Well pump intake depth (meters below water table)	DWIBWT	10	**3**	M	Site specific value	Parsons Engineering Science 2002
Model for Water Transport Parameters [Non-dispersion (ND) or Mass-Balance (MB)]	MODEL	ND	ND	unitless	RESRAD default used.	ANL 1993

DEFAULT AND RECOMMENDED VALUES FOR RESRAD INPUT PARAMETERS

RESRAD Version 6.5					Parameter Justification	
Parameter	**Code**	**Default Value**	**User Input Value**	**Units**	**Comments**	**Reference**
Well pumping rate	UW	250	**50**	m^3/yr	Based on field experience, 100 ml/min is a sustainable rate for extraction of groundwater from upper aquifer during well purging in preparation for groundwater sampling (as reported in Appendix E, Table 1 of the reference)	Parsons Engineering Science 2002
UNCONTAMINATED UNSATURATED ZONE PARAMETERS						
Number of unsaturated zone strata	NS	1	1	unitless	RESRAD default used.	ANL 1993 (Section 25)
Unsaturated zone thickness	H(1)	4	**1**	m	Site-specific measurement.	
Unsaturated zone soil density	DENSUZ(1)	1.5	1.5	g/cm^3	RESRAD default used.	ANL 1993 (Section 2)
Unsaturated zone total porosity	TPUZ(1)	0.4	**0.37**	unitless	Site specific value	ANL 1993 (Section 3), USAEHA 1984
Unsaturated zone effective porosity	EPSZ(1)	0.2	**0.175**	unitless	Calculated value	Parsons Engineering Science 1996
Unsaturated zone field capacity	FCSZ(1)	0.2	0.2	unitless	RESRAD default used.	ANL 1993
Unsaturated zone hydraulic conductivity	HCSZ(1)	10	**29**	m/yr	Assumed to be a factor of 10 less than the site-specific saturated zone hydraulic conductivity of 290 m/yr of the reference.	Parsons Engineering Science 2002
Unsaturated zone b parameter	BSZ	5.3	**7.75**	unitless	The assigned value was taken from Page 3-41 of the reference.	Parsons Engineering Science 2002
ELEMENTAL DISTRIBUTION (PARTITION) COEFFICIENTS AND LEACH RATES: ACTINIUM						
Contaminated zone	DCNUCC(2 & 3)	20	2,400	cm^3/g	This assigned value was selected from Table 32.1 of the reference for the clay.	ANL 1993
Unsaturated zone	DCNUCU(2 & 3,1)	20	2,400	cm^3/g	This assigned value was selected from Table 32.1 of the reference for the clay.	ANL 1993
Saturated zone	DCNUCS(2 & 3)	20	2,400	cm^3/g	This assigned value was selected from Table 32.1 of the reference for the clay.	ANL 1993
ELEMENTAL DISTRIBUTION (PARTITION) COEFFICIENTS AND LEACH RATES: COBALT						
Contaminated zone	DCNUCC(1)	1,000	**550**	cm^3/g	This assigned value was selected from Table 32.1 of the reference for the clay.	ANL 1993

DEFAULT AND RECOMMENDED VALUES FOR RESRAD INPUT PARAMETERS

RESRAD Version 6.5					Parameter Justification	
Parameter	**Code**	**Default Value**	**User Input Value**	**Units**	**Comments**	**Reference**
Unsaturated zone	DCNUCU(1,1)	1,000	**550**	cm^3/g	This assigned value was selected from Table 32.1 of the reference for the clay.	ANL 1993
Saturated zone	DCNUCS(1)	1,000	**550**	cm^3/g	This assigned value was selected from Table 32.1 of the reference for the clay.	ANL 1993
ELEMENTAL DISTRIBUTION (PARTITION) COEFFICIENTS AND LEACH RATES: CESIUM						
Contaminated zone	DCNUCC(1)	1,900	**1,900**	cm^3/g	This assigned value was selected from Table 32.1 of the reference for the clay.	ANL 1993
Unsaturated zone	DCNUCU(1,1)	1,900	**1,900**	cm^3/g	This assigned value was selected from Table 32.1 of the reference for the clay.	ANL 1993
Saturated zone	DCNUCS(1)	1,900	**1,900**	cm^3/g	This assigned value was selected from Table 32.1 of the reference for the clay.	ANL 1993
ELEMENTAL DISTRIBUTION (PARTITION) COEFFICIENTS AND LEACH RATES: RADIUM						
Contaminated zone	DCNUCC(1)	70	**9,100**	cm^3/g	This assigned value was selected from Table 32.1 of the reference for the clay.	ANL 1993
Unsaturated zone	DCNUCU(1,1)	70	**9,100**	cm^3/g	This assigned value was selected from Table 32.1 of the reference for the clay.	ANL 1993
Saturated zone	DCNUCS(1)	70	**9,100**	cm^3/g	This assigned value was selected from Table 32.1 of the reference for the clay.	ANL 1993
ELEMENTAL DISTRIBUTION (PARTITION) COEFFICIENTS AND LEACH RATES: LEAD						
Contaminated zone	DCNUCC(1)	100	**550**	cm^3/g	This assigned value was selected from Table 32.1 of the reference for the clay.	ANL 1993
Unsaturated zone	DCNUCU(1,1)	100	**550**	cm^3/g	This assigned value was selected from Table 32.1 of the reference for the clay.	ANL 1993
Saturated zone	DCNUCS(1)	100	**550**	cm^3/g	This assigned value was selected from Table 32.1 of the reference for the clay.	ANL 1993
ELEMENTAL DISTRIBUTION (PARTITION) COEFFICIENTS AND LEACH RATES: TRITIUM						
Contaminated zone	DCNUCC(1)	0	**0.06**	cm^3/g	This assigned value was selected from Table 3.9.1 of the reference.	NRC 2000
Unsaturated zone	DCNUCU(1,1)	0	**0.06**	cm^3/g	This assigned value was selected from Table 3.9.1 of the reference.	NRC 2000

DEFAULT AND RECOMMENDED VALUES FOR RESRAD INPUT PARAMETERS

RESRAD Version 6.5					Parameter Justification	
Parameter	**Code**	**Default Value**	**User Input Value**	**Units**	**Comments**	**Reference**
Saturated zone	DCNUCS(1)	0	**0.06**	cm^3/g	This assigned value was selected from Table 3.9.1 of the reference.	NRC 2000
ELEMENTAL DISTRIBUTION (PARTITION) COEFFICIENTS AND LEACH RATES: THORIUM						
Contaminated zone	DCNUCC(1)	60000	**5,800**	cm^3/g	This assigned value was selected from Table 32.1 of the reference for the clay.	ANL 1993
Unsaturated zone	DCNUCU(1,1)	60000	**5,800**	cm^3/g	This assigned value was selected from Table 32.1 of the reference for the clay.	ANL 1993
Saturated zone	DCNUCS(1)	60000	**5,800**	cm^3/g	This assigned value was selected from Table 32.1 of the reference for the clay.	ANL 1993
OCCUPANCY, INHALATION AND EXTERNAL GAMMA DATA						
Inhalation rate	INHALR	8,400	**6,475** **10,512** **8,760** **11,000**	m^3/y	Residential (See calculation in footnote [2] below) Site Worker (1.2 m^3/hr) (Moderate Activity) Recreational Worker (1 m^3/hr) (Light Activity) Construction Worker (Upper bound of heavy outdoor activity)	USEPA 1997 USDOE 1993
Mass loading for inhalation	MLINH	0.0001	**7.58E-07** **6.0E-04**	g/m^3	Non-construction (Based on 1/Particulate Emission Factor. Default value for PEF = 1.32 x 109 m3/kg). Construction Worker	USEPA, 1996 ANL 1993 (Section 35)
Exposure duration	ED	30	**30** **25** **25** **1**	yr	Residential Site Worker Recreational Worker Construction Worker	USEPA 1991b
Inhalation shielding factor	SHF3	0.4	0.4	unitless	RESRAD default used.	ANL 1993 (Section 36)
External gamma shielding factor	SHF1	0.7	**0.4**	unitless	60% shielding per EPA, cited reference used for all indoor receptors.	USEPA, 2000
Indoor time fraction	FIND	0.5	**0.655** **0** **0** **0**	unitless	Residential (16.4 hours per day for 350 days/yr) Site Worker Recreational Worker Construction Worker	USEPA 1997 USEPA 1991b
Outdoor time fraction	FOTD	0.25	**0.08** **0.0183** **0.16** **0.228**	unitless	Residential (2 hours per day for 350 days/yr) Site Worker (8 hrs/day for 20 days/yr) Recreational Worker (8 hrs/day for 175 days/yr) Construction Worker (8 hrs/day for 250 days/hr)	USEPA 1991b

DEFAULT AND RECOMMENDED VALUES FOR RESRAD INPUT PARAMETERS

RESRAD Version 6.5					Parameter Justification	
Parameter	**Code**	**Default Value**	**User Input Value**	**Units**	**Comments**	**Reference**
Shape of the contaminated zone (circular or non-circular)	FS	Circular	Circular	unitless	RESRAD default used.	ANL 1993 (Section 50)
INGESTION PATHWAY (DIETARY DATA)						
Fruits, vegetables and grain consumption	DIET(1)	160	**42.7**	kg/yr	Part 2, Equation 5	USEPA 2000
Leafy vegetable consumption	DIET(2)	14	**4.66**	kg/yr	Part 2, Equation 5	USEPA 2000
Milk consumption	DIET(3)	92	**135.4**	L/yr	Based on the consumption of milk by a 12-19 year old male and is presented in Table 11-15 of the reference	USEPA 1997
Meat and poultry consumption	DIET(4)	63	**46.02**	kg/yr	EPA recommends that per capital average meat consumption rate is 2.1 g/kg-day or 46.02 kg /yr (= 2.1 g/kg-day * 60 kg *365.25 days/yr* 1E-3 kg/g)	USEPA 1997
Fish consumption	DIET(5)	5.4	**7.34**	kg/yr	EPA recommends that per capital average total fish consumption rate is 20.1 g/day or 7.34 kg /yr (= 20.1 g/day * 365.25 days/yr* 1E-3 kg/g)	USEPA 1997
Other seafood consumption	DIET(6)	0.9	0.9	kg/yr	RESRAD default used.	ANL 1993
Soil ingestion rate	SOIL	36.5	**43.8** **36.5** **36.5** **175.2**	g/yr	Residential (See calculation in footnote [3] below) Site Worker = (100 mg/day * 365 days/yr * 1E-3 g/mg) Recreational Worker= (100 mg/day * 365 days/yr * 1E-3 g/mg) Construction Worker = (480 mg/day * 365 days/yr * 1E-3 g/mg)	USEPA 1991b
Drinking water intake	DW1	510	510	L/yr	RESRAD default used.	ANL 1993
Contamination fraction of drinking water	FDW	1	1	unitless	RESRAD default used.	ANL 1993
Contamination fraction of household water	FHHW	1	N/A	unitless	Radon pathway is not selected; hence this parameter is not applicable	ANL 1993
Contamination fraction of livestock water	FLW	1	1	unitless	Pathway active only for residential receptor	ANL 1993
Contamination fraction of irrigation water	FIRW	1	1	unitless	Pathway active only for residential receptor	ANL 1993
Contamination fraction of aquatic food	FR9	0.5	0.5	unitless	RESRAD default used.	ANL 1993
Contaminated fraction of plant food	FPLANT	-1	-1	unitless	RESRAD default used.	ANL 1993
Contaminated fraction of meat	FMEAT	-1	-1	unitless	RESRAD default used.	ANL 1993
Contaminated fraction of milk	FMILK	-1	-1	unitless	RESRAD default used.	ANL 1993
INGESTION PATHWAY (NON-DIETARY DATA)						
Livestock fodder intake for meat	LP15	68	68	kg/day	RESRAD default used.	ANL 1993

DEFAULT AND RECOMMENDED VALUES FOR RESRAD INPUT PARAMETERS

RESRAD Version 6.5					Parameter Justification	
Parameter	**Code**	**Default Value**	**User Input Value**	**Units**	**Comments**	**Reference**
Livestock fodder intake for milk	LP16	55	55	kg/day	RESRAD default used.	ANL 1993
Livestock water intake for meat	LW15	50	50	L/day	RESRAD default used.	ANL 1993
Livestock water intake for milk	LW15	160	160	L/day	RESRAD default used.	ANL 1993
Livestock intake of soil	LS1	0.5	0.5	kg/day	RESRAD default used.	ANL 1993
Mass loading for foliar deposition	MLFD	0.0001	0.0001	g/m^3	RESRAD default used.	ANL 1993
Depth of soil mixing layer	DM	0.15	0.15	m	RESRAD default used.	ANL 1993 (Section 35)
Depth of roots	DROOT	0.9	0.9	m	RESRAD default used.	ANL 1993
Groundwater fractional usage: Drinking water	FGWDW	1	1	unitless	RESRAD default used.	ANL 1993
Groundwater fractional usage: Household water	FGWHH	1	1	unitless	RESRAD default used.	ANL 1993
Groundwater fractional usage: Livestock water	FGWLW	1	1	unitless	RESRAD default used.	ANL 1993
Groundwater fractional usage: Irrigation water	FGWIR	1	1	unitless	RESRAD default used.	ANL 1993
PLANT TRANSPORT FACTORS						
Wet weight crop yield: non-leafy vegetables	YV(1)	0.7	0.7	kg/m^2	RESRAD default used.	ANL 1993
Wet weight crop yield: leafy vegetables	YV(2)	1.5	1.5	kg/m^2	RESRAD default used.	ANL 1993
Wet weight crop yield: fodder	YV(3)	1.1	1.1	kg/m^2	RESRAD default used.	ANL 1993
Length of growing season: non-leafy vegetables	TE(1)	0.17	0.17	years	RESRAD default used.	ANL 1993
Length of growing season: leafy vegetables	TE(2)	0.25	0.25	years	RESRAD default used.	ANL 1993
Length of growing season: fodder	TE(3)	0.08	0.08	years	RESRAD default used.	ANL 1993
Translocation factor: non-leafy vegetables	TIV(1)	0.1	0.1	unitless	RESRAD default used.	ANL 1993
Translocation factor: leafy vegetables	TIV(2)	1	1	unitless	RESRAD default used.	ANL 1993
Translocation factor: fodder	TIV(3)	1	1	unitless	RESRAD default used.	ANL 1993

DEFAULT AND RECOMMENDED VALUES FOR RESRAD INPUT PARAMETERS

RESRAD Version 6.5					Parameter Justification	
Parameter	**Code**	**Default Value**	**User Input Value**	**Units**	**Comments**	**Reference**
Weathering removal constant	WLAM	20	20	y^{-1}	RESRAD default used.	ANL 1993
Wet foliar interception fraction: non-leafy vegetables	RWET(1)	0.25	0.25	unitless	RESRAD default used.	ANL 1993
Wet foliar interception fraction: leafy vegetables	RWET(2)	0.25	0.25	unitless	RESRAD default used.	ANL 1993
Wet foliar interception fraction: fodder	RWET(3)	0.25	0.25	unitless	RESRAD default used.	ANL 1993
Dry foliar interception fraction: non-leafy vegetables	RDRY(1)	0.25	0.25	unitless	RESRAD default used.	ANL 1993
Dry foliar interception fraction: leafy vegetables	RDRY(2)	0.25	0.25	unitless	RESRAD default used.	ANL 1993
Dry foliar interception fraction: fodder	RDRY(3)	0.25	0.25	unitless	RESRAD default used.	ANL 1993
STORAGE TIMES BEFORE USE						
Fruits, non-leafy vegetables and grain	STOR_T(1)	14	14	days	RESRAD default used.	ANL 1993
Leafy vegetables	STOR_T(2)	1	1	days	RESRAD default used.	ANL 1993
Milk	STOR_T(3)	1	1	days	RESRAD default used.	ANL 1993
Meat	STOR_T(4)	20	20	days	RESRAD default used.	ANL 1993
Fish	STOR_T(5)	7	7	days	RESRAD default used.	ANL 1993
Crustacea and mollusks	STOR_T(6)	7	7	days	RESRAD default used.	ANL 1993
Well water	STOR_T(7)	1	1	days	RESRAD default used.	ANL 1993
Surface water	STOR_T(8)	1	1	days	RESRAD default used.	ANL 1993
Livestock fodder	STOR_T(9)	45	45	days	RESRAD default used.	ANL 1993

Footnote

N/A Not Applicable

(1) Calculation of Evapotranspiration Coefficient, RESRAD Manual, Version 5, page 198, with following parameters from Parsons Engineering Science, Final Groundwater Modeling Report at the Ash Landfill Site, June 1996.
I = Infiltration Rate, m/yr (7 in/year = 0.18 m/yr)
Ce = Evapotranspiration Coefficient
Cr = runoff coefficient (0.2)
Pr = Precipitation rate, annual rainfall, m/yr (0.75 m/yr)
Irr = Irrigation rate (0 m/yr)

(2) Time-weighted Inhalation Rate for Residential Receptor = (7300 m^3/yr x 24 yrs + 3175.5 m^3/yr x 6 yrs) / (24 yrs + 6 yrs) = 6575 m^3/yr

(3) Time-weighted Soil Ingestion Rate for Residential Receptor = (0.1 g/day x 365 days/yr x 24 yrs + 0.2 g/day x 365days/yr x 6 yrs) / (24 yrs + 6 yrs) = 43.8 g/yr

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ATTACHMENT E

ASSIGNED VALUES FOR EXPOSURE PARAMETERS USED IN RESRAD MODEL

Revised by USEPA and Parson; and USEPA concurrence provided on 10/18/2011

DEFAULT AND RECOMMENDED VALUES FOR RESRAD INPUT PARAMETERS

RESRAD Version 6.5					Parameter Justification	
Parameter	**Code**	**Default Value**	**User Input Value**	**Units**	**Comments**	**Reference**
PATHWAY SELECTIONS						
External Gamma	N/A	Active	Active	N/A	RESRAD default used.	Parsons Engineering Science 2002
Inhalation (without radon)	N/A	Active	Active	N/A	RESRAD default used.	Parsons Engineering Science 2002
Plant Ingestion	N/A	Active	Inactive	N/A	Only active for Residential Farmer scenario	Parsons Engineering Science 2002
Meat Ingestion	N/A	Active	Inactive	N/A	Only active for Residential Farmer scenario	Parsons Engineering Science 2002
Milk Ingestion	N/A	Active	Inactive	N/A	Only active for Residential Farmer scenario	Parsons Engineering Science 2002
Aquatic Foods	N/A	Active	Inactive	N/A	Only active for Residential Farmer scenario	Parsons Engineering Science 2002
Drinking Water	N/A	Active	Inactive	N/A	Active for Future Park Worker, Recreation Receptor and Residential Farmer Scenario	Parsons Engineering Science 2002
Soil Ingestion	N/A	Active	Active	N/A	RESRAD default used.	Parsons Engineering Science 2002
Radon	N/A	Inactive	Inactive	N/A	Not applicable per cited reference.	NRC, 1994
CONTAMINATED ZONE PARAMETERS						
Area of contaminated zone	AREA	10,000	**2160** (Pit A/B) **8403** (Pit C)	m^2	Site-specific values were used.	Cabrera 2011
Thickness of contaminated zone	THICK0	2	**0.15** (Pit A/B) **0.15** (Pit C)	m	Site-specific average depth of contamination	Cabrera 2011
Length parallel to the aquifer	LCZPAQ	100	46.5 (Pit A/B) 92 (Pit C)	m	Square root of the area of contamination.	Calculated
Times for calculations	TI	1, 3, 10, 30, 100, 300, 1000	1, 3, 10, 30, 100, 300, 1000	yr	RESRAD defaults for calculation times.	ANL 1993
COVER AND CONTAMINATED ZONE HYDROLOGICAL DATA						
Cover depth	COVER	0	0	M	As a conservative approach, no cover depth was assumed.	ANL 1993 (Section 31)
Density of cover material	DENSCV	1.5	**N/A**	g/cm^3	Lack of cover depth precludes an assigned value for this parameter.	ANL 1993 (Section 2)
Cover erosion rate	VCV	0.001	**N/A**	m/yr	Lack of cover depth precludes an assigned value for this parameter.	ANL 1993 (Section 14)

DEFAULT AND RECOMMENDED VALUES FOR RESRAD INPUT PARAMETERS

RESRAD Version 6.5					Parameter Justification	
Parameter	**Code**	**Default Value**	**User Input Value**	**Units**	**Comments**	**Reference**
Density of contaminated zone	DENSCZ	1.5	**1.28**	g/cm^3	Site-specific value was chosen based on the average of silt loam and clay loam soil. (Table 2.1)	ANL 1993 (Section 2)
Contaminated zone erosion rate	VCZ	0.001	**0.0006** **0.00006**	m/yr	Resident (Assume 2% slope) All others	ANL 1993
Contaminated zone total porosity	TPCZ	0.4	**0.37**	Unitless	Site-specific value	ANL 1993 (Section 3) USAEHA 1984
Contaminated zone field capacity	FCCZ	0.2	**0.06**	Unitless	Site-specific value	Parsons Engineering Science 1996
Contaminated zone hydraulic conductivity	HCCZ	10	**29**	m/yr	Assumed to be a factor of 10 less than the site-specific saturated zone hydraulic conductivity of 290 m/yr of the *SEAD-12 RI Report* reference.	ANL 1993 (Section 5) Parsons Engineering Science 2002
Contaminated zone b parameter	BCZ	5.3	**7.75**	Unitless	The contaminated zone b parameter was selected from Table 13.1 of the reference for the silty clay loam.	ANL 1993 (Section 13)
Humidity in air	HUMID	8	**6.6**	g/m^3	Site-specific value	Parsons Engineering Science 2002
Evapotranspiration coefficient	EVAPTR	0.5	**0.7**	Unitless	See calculation in footnote (1) below	Parsons Engineering Science 1996
Wind speed	WIND	2	**3**	m/sec	Estimated using wind rose for Syracuse, NY	Parsons Engineering Science 2002
Precipitation	PRECIP	1	**0.75**	m/yr	Site-specific value based on reported 36.1 inches per year	ANL 1993 (Section 9), Parsons Engineering Science 2002
Irrigation	RI	0.2	**0**	m/yr	No irrigation onsite.	Parsons Engineering Science 2002
Irrigation mode	IDITCH	Overhead	Overhead	Unitless	The "Overhead" and "Ditch" designations are independent of the depth of contaminated zone and have no significant impact on the RESRAD evaluation. The RESRAD default designation was selected.	ANL 1993
Runoff coefficient	RUNOFF	0.2	0.2	Unitless	The RESRAD default value was selected based on reference value for intermediate combinations of clay and loam.	ANL 1993 (Section 10)

DEFAULT AND RECOMMENDED VALUES FOR RESRAD INPUT PARAMETERS

RESRAD Version 6.5					Parameter Justification	
Parameter	**Code**	**Default Value**	**User Input Value**	**Units**	**Comments**	**Reference**
Watershed area for nearby stream or pond	WAREA	1.00E6	**13000000**	m^2	Site-specific value (Appendix E, Table 2 of the reference)	ANL 1993 (Section 17), Parsons Engineering Science 2002
Accuracy for water/soil computations	EPS	0.001	0.001	Unitless	RESRAD default used.	ANL 1993
SATURATED ZONE HYDROLOGICAL DATA						
Density of saturated zone	DENSAQ	1.5	1.5	g/cm^3	RESRAD default used.	ANL 1993 (Section 2)
Saturated zone total porosity	TPSZ	0.4	**0.37**	Unitless	Site specific value	ANL 1993 (Section 3) USAEHA 1984
Saturated zone effective porosity	EPSZ	0.2	**0.175**	Unitless	Calculated value	Parsons Engineering Science 1996
Saturated zone field capacity	FCSZ	0.2	0.2	Unitless	RESRAD default used.	ANL 1993
Saturated zone hydraulic conductivity	HCSZ	100	**290**	m/yr	Saturated zone hydraulic conductivity for clay was based on a geometric mean hydraulic conductivity of 9.22×10^{-4} identified on Page 3-19 of the reference.	Parsons Engineering Science 2002
Saturated zone hydraulic gradient	HGWT	0.02	**0.011**	Unitless	Based on the average of the northern and southern values reported on page 3-19 of the reference.	Parsons Engineering Science 2002
Saturated zone b parameter	BSZ	5.3	5.3	Unitless	RESRAD default used.	ANL 1993 (Section 13)
Water table drop rate	VWT	0.001	**0**	m/yr	Assumption	ANL 1993 (Section 18)
Well pump intake depth (meters below water table)	DWIBWT	10	**3**	M	Site specific value	Parsons Engineering Science 2002
Model for Water Transport Parameters [Non-dispersion (ND) or Mass-Balance (MB)]	MODEL	ND	ND	unitless	RESRAD default used.	ANL 1993

DEFAULT AND RECOMMENDED VALUES FOR RESRAD INPUT PARAMETERS

RESRAD Version 6.5					Parameter Justification	
Parameter	**Code**	**Default Value**	**User Input Value**	**Units**	**Comments**	**Reference**
Well pumping rate	UW	250	**50**	m^3/yr	Based on field experience, 100 ml/min is a sustainable rate for extraction of groundwater from upper aquifer during well purging in preparation for groundwater sampling (as reported in Appendix E, Table 1 of the reference)	Parsons Engineering Science 2002
UNCONTAMINATED UNSATURATED ZONE PARAMETERS						
Number of unsaturated zone strata	NS	1	1	unitless	RESRAD default used.	ANL 1993 (Section 25)
Unsaturated zone thickness	H(1)	4	**1**	m	Site-specific measurement.	
Unsaturated zone soil density	DENSUZ(1)	1.5	1.5	g/cm^3	RESRAD default used.	ANL 1993 (Section 2)
Unsaturated zone total porosity	TPUZ(1)	0.4	**0.37**	unitless	Site specific value	ANL 1993 (Section 3), USAEHA 1984
Unsaturated zone effective porosity	EPSZ(1)	0.2	**0.175**	unitless	Calculated value	Parsons Engineering Science 1996
Unsaturated zone field capacity	FCSZ(1)	0.2	0.2	unitless	RESRAD default used.	ANL 1993
Unsaturated zone hydraulic conductivity	HCSZ(1)	10	**29**	m/yr	Assumed to be a factor of 10 less than the site-specific saturated zone hydraulic conductivity of 290 m/yr of the reference.	Parsons Engineering Science 2002
Unsaturated zone b parameter	BSZ	5.3	**7.75**	unitless	The assigned value was taken from Page 3-41 of the reference.	Parsons Engineering Science 2002
ELEMENTAL DISTRIBUTION (PARTITION) COEFFICIENTS AND LEACH RATES: ACTINIUM						
Contaminated zone	DCNUCC(2 & 3)	20	2,400	cm^3/g	This assigned value was selected from Table 32.1 of the reference for the clay.	ANL 1993
Unsaturated zone	DCNUCU(2 & 3,1)	20	2,400	cm^3/g	This assigned value was selected from Table 32.1 of the reference for the clay.	ANL 1993
Saturated zone	DCNUCS(2 & 3)	20	2,400	cm^3/g	This assigned value was selected from Table 32.1 of the reference for the clay.	ANL 1993
ELEMENTAL DISTRIBUTION (PARTITION) COEFFICIENTS AND LEACH RATES: COBALT						
Contaminated zone	DCNUCC(1)	1,000	**550**	cm^3/g	This assigned value was selected from Table 32.1 of the reference for the clay.	ANL 1993

DEFAULT AND RECOMMENDED VALUES FOR RESRAD INPUT PARAMETERS

RESRAD Version 6.5					Parameter Justification	
Parameter	**Code**	**Default Value**	**User Input Value**	**Units**	**Comments**	**Reference**
Unsaturated zone	DCNUCU(1,1)	1,000	**550**	cm^3/g	This assigned value was selected from Table 32.1 of the reference for the clay.	ANL 1993
Saturated zone	DCNUCS(1)	1,000	**550**	cm^3/g	This assigned value was selected from Table 32.1 of the reference for the clay.	ANL 1993
ELEMENTAL DISTRIBUTION (PARTITION) COEFFICIENTS AND LEACH RATES: CESIUM						
Contaminated zone	DCNUCC(1)	1,900	**1,900**	cm^3/g	This assigned value was selected from Table 32.1 of the reference for the clay.	ANL 1993
Unsaturated zone	DCNUCU(1,1)	1,900	**1,900**	cm^3/g	This assigned value was selected from Table 32.1 of the reference for the clay.	ANL 1993
Saturated zone	DCNUCS(1)	1,900	**1,900**	cm^3/g	This assigned value was selected from Table 32.1 of the reference for the clay.	ANL 1993
ELEMENTAL DISTRIBUTION (PARTITION) COEFFICIENTS AND LEACH RATES: RADIUM						
Contaminated zone	DCNUCC(1)	70	**9,100**	cm^3/g	This assigned value was selected from Table 32.1 of the reference for the clay.	ANL 1993
Unsaturated zone	DCNUCU(1,1)	70	**9,100**	cm^3/g	This assigned value was selected from Table 32.1 of the reference for the clay.	ANL 1993
Saturated zone	DCNUCS(1)	70	**9,100**	cm^3/g	This assigned value was selected from Table 32.1 of the reference for the clay.	ANL 1993
ELEMENTAL DISTRIBUTION (PARTITION) COEFFICIENTS AND LEACH RATES: LEAD						
Contaminated zone	DCNUCC(1)	100	**550**	cm^3/g	This assigned value was selected from Table 32.1 of the reference for the clay.	ANL 1993
Unsaturated zone	DCNUCU(1,1)	100	**550**	cm^3/g	This assigned value was selected from Table 32.1 of the reference for the clay.	ANL 1993
Saturated zone	DCNUCS(1)	100	**550**	cm^3/g	This assigned value was selected from Table 32.1 of the reference for the clay.	ANL 1993
ELEMENTAL DISTRIBUTION (PARTITION) COEFFICIENTS AND LEACH RATES: TRITIUM						
Contaminated zone	DCNUCC(1)	0	**0.06**	cm^3/g	This assigned value was selected from Table 3.9.1 of the reference.	NRC 2000
Unsaturated zone	DCNUCU(1,1)	0	**0.06**	cm^3/g	This assigned value was selected from Table 3.9.1 of the reference.	NRC 2000

DEFAULT AND RECOMMENDED VALUES FOR RESRAD INPUT PARAMETERS

RESRAD Version 6.5					Parameter Justification	
Parameter	**Code**	**Default Value**	**User Input Value**	**Units**	**Comments**	**Reference**
Saturated zone	DCNUCS(1)	0	**0.06**	cm^3/g	This assigned value was selected from Table 3.9.1 of the reference.	NRC 2000
ELEMENTAL DISTRIBUTION (PARTITION) COEFFICIENTS AND LEACH RATES: THORIUM						
Contaminated zone	DCNUCC(1)	60000	**5,800**	cm^3/g	This assigned value was selected from Table 32.1 of the reference for the clay.	ANL 1993
Unsaturated zone	DCNUCU(1,1)	60000	**5,800**	cm^3/g	This assigned value was selected from Table 32.1 of the reference for the clay.	ANL 1993
Saturated zone	DCNUCS(1)	60000	**5,800**	cm^3/g	This assigned value was selected from Table 32.1 of the reference for the clay.	ANL 1993
ELEMENTAL DISTRIBUTION (PARTITION) COEFFICIENTS AND LEACH RATES: URANIUM						
Contaminated zone	DCNUCC(1)	50	**1,600**	cm^3/g	This assigned value was selected from Table 32.1 of the reference for the clay.	ANL 1993
Unsaturated zone	DCNUCU(1,1)	50	**1,600**	cm^3/g	This assigned value was selected from Table 32.1 of the reference for the clay.	ANL 1993
Saturated zone	DCNUCS(1)	50	**1,600**	cm^3/g	This assigned value was selected from Table 32.1 of the reference for the clay.	ANL 1993
OCCUPANCY, INHALATION AND EXTERNAL GAMMA DATA						
Inhalation rate	INHALR	8,400	**5,277** **10,512** **8,760** **11,000** **3175.5**	m^3/y	Residential (See calculation in footnote [2] below) Site Worker (1.2 m^3/hr) (Moderate Activity) Future Park Worker (1 m^3/hr) (Light Activity) Construction Worker (Upper bound of heavy outdoor activity) Recreation Receptor (Child) (8.7 m^3/day)	USEPA 1997 USDOE 1993 USEPA 1997
Mass loading for inhalation	MLINH	0.0001	**7.58E-07** **6.0E-04**	g/m^3	Non-construction (Based on 1/Particulate Emission Factor. Default value for PEF = 1.32 x 109 m3/kg). Construction Worker	USEPA, 1996 ANL 1993 (Section 35)
Exposure duration	ED	30	**30** **25** **25** **1** **5**	yr	Residential Site Worker Park Worker Construction Worker Recreational Receptor	USEPA 1991b
Inhalation shielding factor	SHF3	0.4	0.4	unitless	RESRAD default used.	ANL 1993 (Section 36)

DEFAULT AND RECOMMENDED VALUES FOR RESRAD INPUT PARAMETERS

RESRAD Version 6.5					Parameter Justification	
Parameter	**Code**	**Default Value**	**User Input Value**	**Units**	**Comments**	**Reference**
External gamma shielding factor	SHF1	0.7	**0.4**	unitless	60% shielding per EPA, cited reference used for all indoor receptors.	USEPA, 2000
Indoor time fraction	FIND	0.5	**0.655** **0** **0** **0** **0**	unitless	Residential (16.4 hours per day for 350 days/yr) Site Worker Park Worker Construction Worker Recreational Receptor	USEPA 1997 USEPA 1991b
Outdoor time fraction	FOTD	0.25	**0.08** **0.0183** **0.16** **0.228** **0.0384**	unitless	Residential (2 hours per day for 350 days/yr) Site Worker (8 hrs/day for 20 days/yr) Park Worker (8 hrs/day for 175 days/yr) Construction Worker (8 hrs/day for 250 days/hr) Recreational Receptor (24 hours for 14 days)	USEPA 1991b
Shape of the contaminated zone (circular or non-circular)	FS	Circular	Circular	unitless	RESRAD default used.	ANL 1993 (Section 50)
INGESTION PATHWAY (DIETARY DATA)						
Fruits, vegetables and grain consumption	DIET(1)	160	**147.9**	kg/yr	Residential (See calculation in footnote [3] below)	USEPA 2011
Leafy vegetable consumption	DIET(2)	14	**9.2**	kg/yr	Residential (See calculation in footnote [4] below)	USEPA 2011
Milk consumption	DIET(3)	92	**116.4**	L/yr	Residential (See calculation in footnote [5] below)	USEPA 2011
Meat and poultry consumption	DIET(4)	63	**46**	kg/yr	Residential (See calculation in footnote [6] below)	USEPA 2011
Fish consumption	DIET(5)	5.4	**5.3**	kg/yr	Residential (See calculation in footnote [7] below)	USEPA 2011
Other seafood consumption	DIET(6)	0.9	0.9	kg/yr	RESRAD default used.	ANL 1993
Soil ingestion rate	SOIL	36.5	**43.8** **36.5** **36.5** **175.2** **73**	g/yr	Residential (See calculation in footnote [8] below) Site Worker = (100 mg/day * 365 days/yr * 1E-3 g/mg) Park Worker= (100 mg/day * 365 days/yr * 1E-3 g/mg) Construction Worker = (480 mg/day * 365 days/yr * 1E-3 g/mg) Recreational Receptor = (200 mg/day * 365 days/yr)	USEPA 1991b
Drinking water intake	DW1	510	510	L/yr	RESRAD default used.	ANL 1993
Contamination fraction of drinking water	FDW	1	1	unitless	RESRAD default used.	ANL 1993
Contamination fraction of household water	FHHW	1	N/A	unitless	Radon pathway is not selected; hence this parameter is not applicable	ANL 1993
Contamination fraction of livestock water	FLW	1	1	unitless	Pathway active only for residential receptor	ANL 1993
Contamination fraction of irrigation water	FIRW	1	1	unitless	Pathway active only for residential receptor	ANL 1993
Contamination fraction of aquatic food	FR9	0.5	0.5	unitless	RESRAD default used.	ANL 1993

DEFAULT AND RECOMMENDED VALUES FOR RESRAD INPUT PARAMETERS

RESRAD Version 6.5					Parameter Justification	
Parameter	**Code**	**Default Value**	**User Input Value**	**Units**	**Comments**	**Reference**
Contaminated fraction of plant food	FPLANT	-1	-1	unitless	RESRAD default used.	ANL 1993
Contaminated fraction of meat	FMEAT	-1	-1	unitless	RESRAD default used.	ANL 1993
Contaminated fraction of milk	FMILK	-1	-1	unitless	RESRAD default used.	ANL 1993
INGESTION PATHWAY (NON-DIETARY DATA)						
Livestock fodder intake for meat	LP15	68	68	kg/day	RESRAD default used.	ANL 1993
Livestock fodder intake for milk	LP16	55	55	kg/day	RESRAD default used.	ANL 1993
Livestock water intake for meat	LW15	50	50	L/day	RESRAD default used.	ANL 1993
Livestock water intake for milk	LW15	160	160	L/day	RESRAD default used.	ANL 1993
Livestock intake of soil	LS1	0.5	0.5	kg/day	RESRAD default used.	ANL 1993
Mass loading for foliar deposition	MLFD	0.0001	0.0001	g/m^3	RESRAD default used.	ANL 1993
Depth of soil mixing layer	DM	0.15	0.15	m	RESRAD default used.	ANL 1993 (Section 35)
Depth of roots	DROOT	0.9	0.9	m	RESRAD default used.	ANL 1993
Groundwater fractional usage: Drinking water	FGWDW	1	1	unitless	RESRAD default used.	ANL 1993
Groundwater fractional usage: Household water	FGWHH	1	1	unitless	RESRAD default used.	ANL 1993
Groundwater fractional usage: Livestock water	FGWLW	1	1	unitless	RESRAD default used.	ANL 1993
Groundwater fractional usage: Irrigation water	FGWIR	1	1	unitless	RESRAD default used.	ANL 1993
PLANT TRANSPORT FACTORS						
Wet weight crop yield: non-leafy vegetables	YV(1)	0.7	0.7	kg/m^2	RESRAD default used.	ANL 1993
Wet weight crop yield: leafy vegetables	YV(2)	1.5	1.5	kg/m^2	RESRAD default used.	ANL 1993
Wet weight crop yield: fodder	YV(3)	1.1	1.1	kg/m^2	RESRAD default used.	ANL 1993
Length of growing season: non-leafy	TE(1)	0.17	0.17	years	RESRAD default used.	ANL 1993

DEFAULT AND RECOMMENDED VALUES FOR RESRAD INPUT PARAMETERS

RESRAD Version 6.5					Parameter Justification	
Parameter	**Code**	**Default Value**	**User Input Value**	**Units**	**Comments**	**Reference**
vegetables						
Length of growing season: leafy vegetables	TE(2)	0.25	0.25	years	RESRAD default used.	ANL 1993
Length of growing season: fodder	TE(3)	0.08	0.08	years	RESRAD default used.	ANL 1993
Translocation factor: non-leafy vegetables	TIV(1)	0.1	0.1	unitless	RESRAD default used.	ANL 1993
Translocation factor: leafy vegetables	TIV(2)	1	1	unitless	RESRAD default used.	ANL 1993
Translocation factor: fodder	TIV(3)	1	1	unitless	RESRAD default used.	ANL 1993
Weathering removal constant	WLAM	20	20	y^{-1}	RESRAD default used.	ANL 1993
Wet foliar interception fraction: non-leafy vegetables	RWET(1)	0.25	0.25	unitless	RESRAD default used.	ANL 1993
Wet foliar interception fraction: leafy vegetables	RWET(2)	0.25	0.25	unitless	RESRAD default used.	ANL 1993
Wet foliar interception fraction: fodder	RWET(3)	0.25	0.25	unitless	RESRAD default used.	ANL 1993
Dry foliar interception fraction: non-leafy vegetables	RDRY(1)	0.25	0.25	unitless	RESRAD default used.	ANL 1993
Dry foliar interception fraction: leafy vegetables	RDRY(2)	0.25	0.25	unitless	RESRAD default used.	ANL 1993
Dry foliar interception fraction: fodder	RDRY(3)	0.25	0.25	unitless	RESRAD default used.	ANL 1993
STORAGE TIMES BEFORE USE						
Fruits, non-leafy vegetables and grain	STOR_T(1)	14	14	days	RESRAD default used.	ANL 1993
Leafy vegetables	STOR_T(2)	1	1	days	RESRAD default used.	ANL 1993
Milk	STOR_T(3)	1	1	days	RESRAD default used.	ANL 1993
Meat	STOR_T(4)	20	20	days	RESRAD default used.	ANL 1993
Fish	STOR_T(5)	7	7	days	RESRAD default used.	ANL 1993
Crustacea and mollusks	STOR_T(6)	7	7	days	RESRAD default used.	ANL 1993
Well water	STOR_T(7)	1	1	days	RESRAD default used.	ANL 1993
Surface water	STOR_T(8)	1	1	days	RESRAD default used.	ANL 1993
Livestock fodder	STOR_T(9)	45	45	days	RESRAD default used.	ANL 1993

Footnotes

N/A Not Applicable

(1) **Calculation of Evapotranspiration Coefficient**, RESRAD Manual, Version 5, page 198, with following parameters from Parsons Engineering Science, Final Groundwater Modeling Report at the Ash Landfill Site, June 1996.
I = Infiltration Rate, m/yr (7 in/year = 0.18 m/yr)
Ce = Evapotranspiration Coefficient
Cr = runoff coefficient (0.2)
Pr = Precipitation rate, annual rainfall, m/yr (0.75 m/yr)
Irr = Irrigation rate (0 m/yr)

(2) Determination of Inhalation Rate for the Residential Receptors

Inhalation Rate for Child (0-1)

Age Group	Month	Mean Inhalation Rate (m^3/day)	References
0-1	1	3.6	**Mean value from Table 6-1 of EFH (USEPA, 2011)**
1-3	2	3.5	
4-6	3	4.1	
7-12	6	5.4	
Weighted Inhalation Rate for Child (0-1)		**4.61**	

Inhalation Rate for Child (0-6)

Age Group	Years	Rate (m^3/day)	References
0-1	1	4.61	**Mean value from Table 6-1 of EFH (USEPA, 2011)**
1-2	1	8	
2-3	1	8.9	
3-6	3	10.1	
Weighted Intake Rate for Child (0-6)		**8.64**	

Inhalation Rate for Adult

Age Group	Years	Rate (m^3/day)	References
18-21	3	16.3	**Mean Value from Table 6-1 of EFH (USEPA, 2011)**
21-31	10	15.7	
31-41	10	16	
41-42	1	16	
Weighted Intake Rate for Adult (18-42)		**15.91**	

Weighted Total Inhalation Rate

Receptor	Rate (m^3/day)	Intake Rate (m3/yr)	Exposure Duration (yr)
Child	8.64	3151.78	6
Adult	15.91	5808.06	24
Weighted Total Inhalation Rate (m^3/yr)[1]			**5276.8**

Footnote

[1] Weighted total inhalation rate = (3151.78*6 + 5808.06*24)/(24+6)

(3) Determination of Total Fruits, Vegetables and Grain Consumption Rate for Residential Receptor

Body Weight for Child (0-1)

Age Group	Month	Mean Weight (Kg)	References
0-1	1	4.8	**Mean value from Table ES-1 of EFH (USEPA, 2011)**
1-3	2	5.9	
3-6	3	7.4	
6-12	6	9.2	
Weighted Body Weight for Child (0-1)		**7.83**	

Consumption Rate for Child (0-6)

Age Group	Years	Fruit Intake (g/kg-day)	Vegetable Intake (g/kg-day)	Grain Intake (g/kg-day)	Total Intake Rate (g/kg-day)	Body Weight (kg)	Intake Rate (g/day)	References
0-1	1	6.2	5	3.1	14.3	7.83	112.0	**Mean Value from Table ES-1 of EFH (USEPA, 2011)**
1-2	1	7.8	6.7	6.4	20.9	11.4	238.3	
2-3	1	7.8	6.7	6.4	20.9	13.8	288.4	
3-6	3	4.6	5.4	6.2	16.2	18.6	301.3	
					Weighted Intake Rate		**257.10**	

Consumption Rate for Adult

Age Group	Years	Fruit Intake (g/kg-day)	Vegetable Intake (g/kg-day)	Grain Intake (g/kg-day)	Total Intake Rate (g/kg-day)	Body Weight (kg)	Intake Rate (g/day)	References
18-21	3	0.9	2.3	2.4	5.6	71.6	401.0	**Mean Value from Table ES-1 of EFH (USEPA, 2011)**
21-42	21	0.9	2.5	2.2	5.6	80	448.0	
					Weighted Intake Rate		**442.12**	

Age-Weighted Total Fruits, Vegetables and Grains Consumption Rate

Receptor	Intake Rate (g/day)	Intake Rate (kg/yr)	Exposure Duration (yr)	Weighted Consumption Rate (kg/yr)
Child	257.10	93.84	6	**147.9**
Adult	442.12	161.37	24	

Footnote

[1] Age-weighted total consumption rate = (93.84*6 + 161.37*24)/(24+6)

(4) Determination of Total Leafy Vegetables Consumption Rate for Residential Receptor

Based on USDA report, *Food Consumption, Prices and Expenditures 1970-1997* (Putnam et al., 1999), fresh vegetables accounted for 44% of the total vegetables consumed during the 25-year period. The fraction of non-leafy fresh vegetables consumed from 1972 – 1997 was estimated at 0.67 of the total fresh vegetable consumption rate.

The above statistics were considered during the estimation of leafy vegetable consumption rate for residential receptor.

Body Weight for Child (0-1)

Age Group	Month	Mean Weight (Kg)	References
0-1	1	4.8	**Mean value from Table ES-1 of EFH (USEPA, 2011)**
1-3	2	5.9	
3-6	3	7.4	
6-12	6	9.2	
Weighted Body Weight for Child (0-1)		**7.83**	

Consumption Rate for Child (0-6)

Age Group	Years	Vegetable Intake (g/kg-day)	Leafy Vegetable Intake Rate (g/kg-day)[1]	Body Weight (kg)	Intake Rate (g/day)	References
0-1	1	5	0.726	7.83	5.7	**Mean Value from Table ES-1 of EFH (USEPA, 2011)**
1-2	1	6.7	0.97	11.4	11.1	
2-3	1	6.7	0.97	13.8	13.4	
3-6	3	5.4	0.78	18.6	14.6	
			Weighted Intake Rate		**12.33**	

[1] Leafy Vegetable Intake Rate = (Vegetable Intake x 44% x 33%)

Consumption Rate for Adult

Age Group	Years	Vegetable Intake (g/kg-day)	Leafy Vegetable Intake Rate (g/kg-day)	Body Weight (kg)	Intake Rate (g/day)	References
18-21	3	2.3	0.33	71.6	23.9	**Mean Value from Table ES-1 of EFH (USEPA, 2011)**
21-42	21	2.5	0.36	80	29.0	
			Weighted Intake Rate		**28.40**	

Age-Weighted Total Fruits, Vegetables and Grains Consumption Rate

Receptor	Intake Rate (g/day)	Intake Rate (kg/yr)	Exposure Duration (yr)	Weighted Consumption Rate (kg/yr)
Child	12.33	4.50	6	**9.2**
Adult	28.40	10.37	24	

Footnote

[1] Age-weighted total leafy vegetable consumption rate = (4.5*6 + 10.37*24)/(24+6)

(5) Determination of Milk Consumption Rate for Residential Receptor

Body Weight for Child (0-1)

Age Group	Month	Mean Weight (Kg)	References
0-1	1	4.8	**Mean value from Table ES-1 of EFH (USEPA, 2011)**
1-3	2	5.9	
3-6	3	7.4	
6-12	6	9.2	
Weighted Body Weight for Child (0-1)		**7.83**	

Consumption Rate for Child (0-6)

Age Group	Years	Rate (g/kg-day)	Body Weight (kg)	Intake Rate (g/day)	References
0-1	1	10.1	7.83	79.1	**Mean Value from Table ES-1 of EFH (USEPA, 2011)**
1-2	1	43.2	11.4	492.5	
2-3	1	43.2	13.8	596.2	
3-6	3	24	18.6	446.4	
		Weighted Intake Rate		**417.82**	

Consumption Rate for Adult

Age Group	Years	Rate (g/kg-day)	Body Weight (kg)	Intake Rate (g/day)	References
18-21	3	5.5	71.6	393.8	**Mean Value from Table ES-1 of EFH (USEPA, 2011)**
21-42	21	3.5	80	280.0	
		Weighted Intake Rate		**294.23**	

Age-Weighted Total Milk Consumption Rate

Receptor	Intake Rate (g/day)	Intake Rate (L/yr)	Exposure Duration (yr)	Weighted Consumption Rate (L/yr)
Child	417.82	152.50	6	**116.4**
Adult	294.23	107.39	24	

Footnote

[1] Age-weighted total milk consumption rate = (152.5*6 + 107.39*24)/(24+6)

(6) Determination of Meat and Poultry Consumption Rate for Residential Receptor

Body Weight for Child (0-1)

Age Group	Month	Mean Weight (Kg)	References
0-1	1	4.8	**Mean value from Table ES-1 of EFH (USEPA, 2011)**
1-3	2	5.9	
3-6	3	7.4	
6-12	6	9.2	
Weighted Body Weight for Child (0-1)		**7.83**	

Consumption Rate for Child (0-6)

Age Group	Years	Rate (g/kg-day)	Body Weight (kg)	Intake Rate (g/day)	References
0-1	1	1.2	7.83	9.4	**Mean Value from Table ES-1 of EFH (USEPA, 2011)**
1-2	1	4	11.4	45.6	
2-3	1	4	13.8	55.2	
3-6	3	3.9	18.6	72.5	
		Weighted Intake Rate		**54.64**	

Consumption Rate for Adult

Age Group	Years	Rate (g/kg-day)	Body Weight (kg)	Intake Rate (g/day)	References
18-21	3	2	71.6	143.2	**Mean Value from Table ES-1 of EFH (2011)**
21-42	21	1.8	80	144.0	
		Weighted Intake Rate		**143.90**	

Age-Weighted Total Meat Consumption Rate

Receptor	Intake Rate (g/day)	Intake Rate (kg/yr)	Exposure Duration (yr)	Weighted Consumption Rate (Kg/yr)
Child	54.64	19.94	6	**46.0**
Adult	143.90	52.52	24	

Footnote

[1] Age-weighted total meat consumption rate = (19.94*6 + 52.52*24)/(24+6)

(7) Determination of Fish Consumption Rate for Residential Receptor

Body Weight for Child (0-1)

Age Group	Month	Mean Weight (Kg)	References
0-1	1	4.8	**Mean value from Table ES-1 of EFH (USEPA, 2011)**
1-3	2	5.9	
3-6	3	7.4	
6-12	6	9.2	
Weighted Body Weight for Child (0-1)		**7.83**	

Consumption Rate for Child (0-6)

Age Group	Years	Rate (g/kg-day)	Body Weight (kg)	Intake Rate (g/day)	References
0-1	1	0.04	7.83	0.3	**Mean Value from Table ES-1 of EFH (USEPA, 2011)**
1-2	1	0.26	11.4	3.0	
2-3	1	0.26	13.8	3.6	
3-6	3	0.24	18.6	4.5	
		Weighted Intake Rate		**3.38**	

Consumption Rate for Adult

Age Group	Years	Rate (g/kg-day)	Body Weight (kg)	Intake Rate (g/day)	References
18-21	3	0.13	71.6	9.3	**Mean Value from Table ES-1 of EFH (USEPA, 2011)**
21-42	21	0.23	80	18.4	
		Weighted Intake Rate		**17.26**	

Age-Weighted Total Fish Consumption Rate

Receptor	Intake Rate (g/day)	Intake Rate (kg/yr)	Exposure Duration (yr)	Weighted Consumption Rate (Kg/yr)
Child	3.38	1.23	6	**5.3**
Adult	17.26	6.30	24	

Footnote

[1] Age-weighted total fish consumption rate = (1.23*6 + 6.3*24)/(24+6)

(8) Determination of Soil Ingestion Rate for Residential Receptor

Receptor	Intake Rate (mg/day)	Intake Rate (g/yr)	Exposure Duration (yr)	Weighted Consumption Rate (g/yr)
Child	200	73.0	6	**43.8**
Adult	100	36.5	24	

Footnote

[1] Age-weighted total ingestion rate = (73*6 + 36.5*24)/(24+6)

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