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October 26, 2005

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Ms. Charlotte Bethoney
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SUBJECT: **Seneca Army Depot Activity, Closure Plans, Burn Tray at OB Grounds and Building 803 – Mixed Waste Storage Facility at Seneca Army Depot Activity, Romulus, New York**

Dear Mr. Vazquez / Mr. Gupta:

On behalf of the U.S. Army (Army), Parsons Infrastructure & Technology Group Inc. (Parsons) is pleased to provide each of you with copies of Closure Plans for the Burn Tray at the Open Burning (OB) Grounds and Building 803, the Mixed Waste Storage Facility (SEAD-72) at the Seneca Army Depot Activity in Romulus, New York. The Army has prepared these plans to address the requirements of the Resource Conservation and Recovery Act (RCRA), but intends to complete the required closure of the two previously RCRA-regulated solid waste management units (SWMUs) as part of its ongoing Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) investigations and remedial actions that are being completed at associated facilities. Under the Federal Facilities Agreement (FFA) that was negotiated and mutually agreed to by the Army, the U.S. Environmental

Protection Agency (EPA), and the New York State Department of Environmental Conservation (NYSDEC), the Army's RCRA corrective actions obligations and CERCLA response obligations are integrated. As such, any remedial action selected, implemented, and completed under the terms of the FFA will be protective of human health and the environment such that remediation of releases covered by the FFA shall obviate the need for further corrective action under RCRA for those releases.

The OB Burn Tray is currently located at the OB Grounds (SEAD-23), and has been retained and may be used pending the completion of CERCLA remedial actions that are required at the Open Detonation Grounds (SEAD-115, pending) and other ordnance sites at the Depot. As is indicated in the attached plan, the tray will be used if needed during the remedial actions, and then be cleaned before recycle. As the tray is located in an area subject to CERCLA action, impacts to the area surrounding the tray will be addressed under CERCLA. SEAD-72, the Mixed Waste Storage Building is located within SEAD-12 at the Depot. Continuing remedial investigations and actions are ongoing within SEAD-12, including both chemical and radiological components. Eventually, a proposed plan and record of decision will be prepared to address the closure of SEAD-12. RCRA closure will consist of building interiors only. The surrounding grounds and radiological concerns will be addressed through the CERCLA for SEAD-12.

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

Sincerely,

Todd Heino, P.E.
Project Manager

cc: S. Bradley ED- CS- P
R. Battaglia, CENAN
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US Army, Engineering & Support Center
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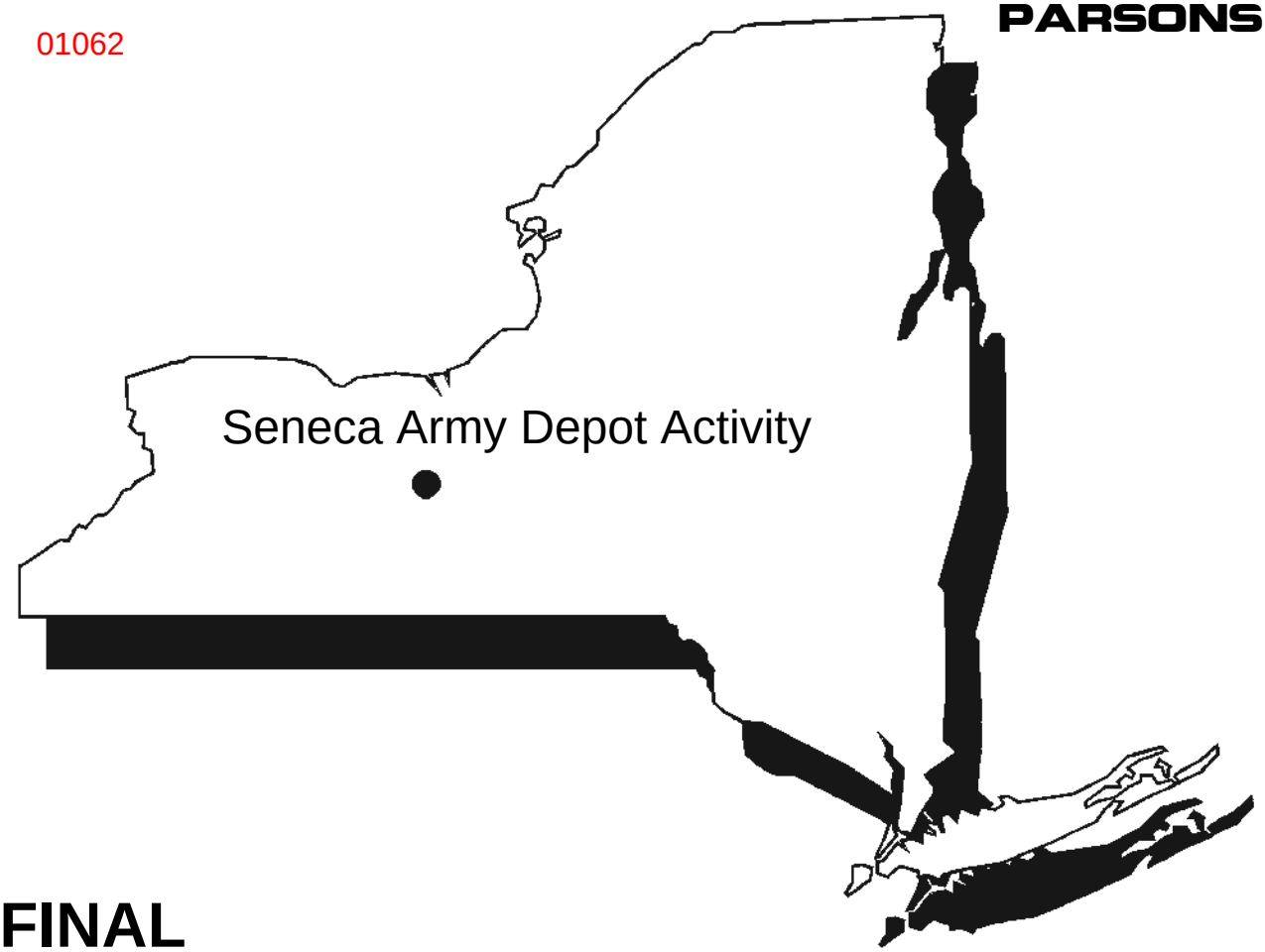

FINAL

CLOSURE PLAN FOR FORMER RCRA UNIT BUILDING 803 – MIXED WASTE STORAGE FACILITY SOLID WASTE MANAGEMENT UNIT – SEAD-72

SENECA ARMY DEPOT ACTIVITY

EPA Site ID# NY0213820830
NY Site ID# 8-50-006
CONTRACT NO. DACA87-95-D-0031
DELIVERY ORDER NO. 0025

October 2005

RCRA Closure Plan

Building 803, Mixed Waste Storage Facility

Prepared for:

Seneca Army Depot Activity
Romulus, New York

and

US Army Corps of Engineers
Huntsville Center

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EPA Site ID# NY0213820830
NY Site ID# 8-50-005
Contract No.: DACA87-95-D-0031, Delivery Order No.: 25, Job 739263 October 2005

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1.0 INTRODUCTION

1.1 PURPOSE AND SCOPE

This document defines work that the Army plans to conduct to close Building 803, the Mixed Waste Storage Facility (Solid Waste Management Unit – SEAD-72 (SEAD-72)), at the Seneca Army Depot Activity (SEDA or the Depot) in Romulus, New York. The closure of Building 803 will be consistent with the requirements of the Resource Conservation and Recovery Act (RCRA) but will be performed under Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) actions that are proceeding at the Depot. This Closure Plan has been prepared by Parsons Infrastructure & Technology Group Inc. (Parsons) on behalf of the U.S. Army (Army).

Building 803 was used by the Army for the storage of non-weapons related, mixed radiological and chemical wastes pending final treatment or disposal at other licensed and permitted facilities. With the termination of SEDA's mission in 2000 and the pending termination of its Nuclear Regulatory Commission (NRC) license to use, store, maintain and handle radiological materials, continuing use of Building 803 will no longer be required at the end of the work associated with the Radiological Survey currently being finalized at SEAD-12, the Former Weapons Storage Area. Therefore, this facility will be closed.

Other historic Solid Waste Management Units (SWMUs) previously subject to RCRA regulations are also located at the SEDA. These include:

- Building 307 – Hazardous Waste Container Storage Facility (SEAD-1)
- Building 301 – PCB Transformer Storage Building (SEAD-2)
- Ammunition Peculiar Equipment (APE) 1236 Deactivation Furnace (SEAD-17)
- Open Burn Grounds (SEAD-23)
- Open Burn Tray at the OB Grounds (SEAD-23)
- Open Detonation Area (SEAD-45)

The Army performed closure activities for Building 307 (SEAD-1) and Building 301 (SEAD-2) between April of 2003 and September 2005. Reports describing the activities conducted and the results of the closure actions were submitted to the New York Department of Environmental Conservation (NYSDEC) and the U.S. Environmental Protection Agency (USEPA) in August of 2003, and in September 2005. The Army received notification of NYSDEC's approval of the RCRA Closure Certification for these two former solid waste management units (SWMUs) on September 29, 2005.

The OB Grounds (SEAD-23) was a RCRA-regulated Solid Waste Management Unit (SWMU) under the Depot's former RCRA Part B permit. Necessary remedial actions required for the OB Grounds, exclusive of the Burn Tray, were undertaken under a prior CERCLA remedial response performed between 1999 and 2005. The goals and objectives of the CERCLA remedial action undertaken at the OB Grounds were documented in the "*Final Open Burning (OB) Grounds Record of Decision*"(Parsons, Feb. 1999). The Draft Completion Report summarizing remedial actions performed for the OB Grounds was submitted in June 2005 and is entitled "*Soil and Sediment Remediation, Open Burning Grounds*" (Weston Solutions, June 2005).

The Army has not yet closed the Open Burn Tray, as it may need to be used during future remedial actions anticipated at the Depot (e.g., Open Detonation Area (SEAD-45)) to treat munitions or unexploded ordnance identified during the pending CERCLA remedial actions.

At present, it is the US Army's intention to proceed with the closure of the SEAD-17, SEAD-45, and the Burn Tray at the Open Burning Grounds facilities under the continuing CERCLA actions that are pending at the Depot. A closure plan is currently under preparation for the Burn Tray and will be submitted as a separate document. Closure activities required for SEAD-17, the Existing Deactivation Furnace have been incorporated into the Proposed Plan and the Record of Decision for the Abandoned Deactivation Furnace (SEAD-16) and the Existing Deactivation Furnace (SEAD-17) which are currently undergoing final regulatory agency review. Closure actions and other remedial actions required at the Open Detonation Area (SEAD-45) will be the subject of future CERCLA actions at the Depot.

Within Section 2 of this document, a list of steps that the Army will perform to complete closure of Building 803, the Mixed Waste Storage Facility (SEAD-72), consistent with the requirements of RCRA is provided and each step is described. As the State of New York Department of Environmental Conservation has primacy for the closure of RCRA units within New York, the proposed closure work will be performed consistent with Title 6 New York Code of Rules and Regulations (6 NYCRR) Subpart 373-3, Interim Status Standards for Owners and Operators of Hazardous Waste Facilities (New York State Department of Environmental Conservation (NYSDEC), March 15, 2002).

1.2 ORGANIZATION OF DOCUMENT

Section 1.0 provides an introduction to this report. **Section 2.0** presents the closure plan for Building 803, the Mixed Waste Storage Facility (SEAD-72). **Section 2.0** also contains subsections that provide a brief description and overview of SEAD-72 and its operational history, state the closure performance standard

for the facility, and present the closure plan for this unit. Within the closure plan are details of the maximum inventory permitted at Building 803 as well as details of how the closure will be performed.

2.0 CLOSURE PLAN FOR THE HAZARDOUS WASTE CONTAINER STORAGE FACILITY, BUILDING 803 (SEAD-72)

2.1 GENERAL FACILITY DESCRIPTION AND OVERVIEW OF HISTORIC OPERATIONS

Building 803 is located within the Former Weapons Storage Area (SEAD-12) in the northern portion of SEDA, approximately 3.5 miles northwest of the Depot's main entry gate off New York State Highway, Route 96 (**Figure 2-1**). The Army constructed Building 803, the Mixed Waste Storage Facility in 1958 to store waste generated at other locations within the Depot prior to off site shipment and treatment/disposal. Building 803 (SEAD-72) measures approximately 35 by 25-feet in size and is built atop and into a mound of earth. The building consists of a fake above ground building, four subsurface interior vaults, two subsurface interior hallways, a covered and walled hallway leading into the building, and a loading platform. The four subsurface storage vaults are each approximately 10 feet by 13 feet in size and are separated from one another and the outside by concrete walls and ceilings that are 18 inches thick. The floors of the subsurface structures are not sloped, but there are floor drains present in each of the vaults (**Figure 2-2).** As is indicated in **Figure 2-2**, the drains appear to have once exited the building via an outflow pipe at the west end of the loading platform. However, they are presently plugged with concrete. The upper structure is an empty concrete building that includes false windows as well as false and operating doors. The paint used on both the interior and exterior walls of the Building 803 contains lead and is noticeably peeling in spots.

Mixed waste generated by the cleaning and maintenance of mission components in neighboring buildings were transported to Building 803 for storage prior to shipment off-site. Mixed wastes were stored in new, removable head type, 55-gallon drums that conformed to appropriate DOT specifications for containers holding hazardous waste in transport. The mixed waste consisted of solvent-wetted paper wipes (solvents used included isopropanol, Freon®, trichloroethylene, acetone or toluene) that were used to clean low-level radioactive components. The wipes were segregated by solvent type, bagged, sealed with tape, double bagged, sealed with tape again, labeled for identification, and then placed in the drum until it was shipped off-site under manifest. At any one time, Building 803 could hold a maximum of 96, 55-gallon drums (24 per cell) if the drums were double stacked in each vault. According to data provided by the Army, none of the materials stored or handled in Building 803 contained or ever contacted equipment containing polychlorinated biphenyls (PCBs); therefore, there is no reason to suspect that PCBs are present in the building. Building 803 was cleared of drummed hazardous waste in 1996 and has not had mixed waste materials stored there since that time.

As constructed, Building 803 meets requirements for conforming storage status for mixed waste storage facilities as defined in 6 NYCRR Part 373. This facility was designated as a RCRA unit in SEDA's 373

Application and is a unit that remains regulated under RCRA interim status provisions (Facility Number NY0213820830).

During an inspection conducted in 1993 by NYSDEC and the New York State Department of Health (NYSDOH) Bureau Environmental Radiation Protection personnel, each of the subsurface cells was found to contain a floor drain, but all of the drains were observed to be plugged shut. Searches of information at the Depot and in state records did not show any evidence of historic release. Additionally, radiological monitoring conducted by NYSDEC/NYSDOH in 1993 did not show any significant deviations from background levels measured during the site survey. This monitoring included Building 803. A summary of the site radiological survey results obtained by NYSDEC are provided in an interoffice memo from Gary Baker (Principal Radiological Health Specialist, Bureau Environmental Radiation Protection) to William Condon (Chief, Environmental Radiation Section, Bureau Environmental Radiation Protection) dated September 7, 1993, which is included in **Appendix A.**

The area surrounding and including SEAD-72 is currently being investigated by the Army under the SEAD-12 Project Scoping Plan (Parsons, June 1998). As part of this work, detailed investigations of SEAD-12 (Building-804 and associated Radiological Burial Site) including geophysical investigations (1996); radiological scans and surface water and sediment sampling (1997); surface and subsurface soil sampling and duct and drain investigations (1998); and building wipes and shallow soil sampling (1999) have been completed.

As part of the Base Closure requirements, Building 803 was scanned for radiological contamination using alpha, beta, and gamma radiation detection equipment. Wipe samples were also collected from the floor drains and vents in Building 803 and analyzed in accordance with the Multi Agency Radiation Survey and Site Investigation Manual (EPA 2002). The results of the scanning and wipe sample analysis indicated that Building 803 is compliant with the Derived Concentration Guideline Levels (DCGLs), which were based on NYSDEC TAGM-4003 and allows 10 milli-rem per year as an acceptable dose equivalent exposure. Results from the wipe samples and of the radiological scanning are provided in **Tables 2-1 to 2-3** and in **Appendix B**. The locations of the wipe samples collected in January of 1999 are shown on **Figure 2-2**, as are the room numbers corresponding to the data collected from October 1999 to January 2000.

The NYSDEC and the Army, under a Federal Facility Agreement (FFA), have agreed that all cleanup operations proceed under CERCLA and RCRA requirements are met concurrently. CERCLA remediation under the FFA meets clean closure requirements. The Army intends to close Building 803 as part of the SEAD-12 Remedial Action. A schedule of the activities planned inside the building only is provided in **Figure 2-3**.

2.2 CLOSURE PERFORMANCE STANDARD

RCRA regulations basically present two closure options for regulated units: clean closure (i.e., removal of contamination), or closure as a landfill (i.e., containment and long-term maintenance of the contamination that is left in place). The closure plan for Building 803, the Mixed Waste Storage Facility (SEAD-72) has been developed to achieve clean closure. A systematic approach will be followed such that the area used for hazardous waste storage will be suitably decontaminated to eliminate or minimize the need for further maintenance, threats to human health and the environment, and the release of hazardous constituents to groundwater, surface waters, or the atmosphere. Confirmation samples will be collected in the building following the decontamination effort described to assess the effectiveness of the decontamination. Specific decontamination activities to be completed during the project are described in S**ection 2.3.3**, and the sampling procedures are detailed in **Section 2.3.4** and **Appendix C**. The success of the decontamination will be judged according to the criteria described in **Section 2.3.7**. If the Army finds that its clean closure goal is non-achievable, this closure plan will be modified in accordance with the requirements of 6 NYCRR § 373-3.7(h).

2.3 CLOSURE PLAN

The following section outlines the procedures to be followed to close Building 803, the Mixed Waste Storage Facility (SEAD-72) consistent with the requirements of 6 NYCRR Part 373-3.7, the Closure Performance Standard.

2.3.1 Maximum Inventory

Building 803 is no longer used to store hazardous waste generated at the Depot. The last previous shipment of hazardous waste was removed from the Depot in March 2002, although hazardous waste has not been present in Building 803 since 1996. The maximum inventory of hazardous wastes ever possible at Building 803 during its active life is estimated as approximately 96, 55-gallon drums or approximately 700 ft^3 of waste.

The Army has conducted an inspection of all historic satellite hazardous waste accumulation areas and buildings at the Depot. The results of this inspection indicate that hazardous wastes are not present at any of the historic satellite accumulation areas and are not stored in Building 803. Additionally, current Army activities at the Depot produce very little, if any, new mixed, hazardous waste, and when the Army generates new hazardous waste, it is managed in accordance with prevailing RCRA requirements and shipped off-site in less than 90 days.

2.3.2 Removal of Hazardous Waste Inventory

Any remaining hazardous waste inventory stored in Building 803 will be removed prior to closure. Two days prior to the initiation of closure activities at Building 803, a meeting will be held between the Army and the disposal contractor. At this time, a thorough inspection of Building 803 will be performed to (1) verify that no hazardous waste remains in the building; (2) ascertain the condition of all residual furniture stored in Building 803; and (3) review the contractor's responsibilities in conforming with all aspects of the closure plan, including waste manifesting, spill prevention, and safety. Hazardous waste technicians will conduct the removal of any remaining hazardous waste inventory identified. The removal and handling of waste will be described in a Remedial Action Workplan that will be prepared for SEAD-12 following the completion and approval of a Record of Decision (ROD) for the CERCLA site.

2.3.3 Decontamination of Building

All personnel involved in the building decontamination process will wear Tyvek® disposable coveralls, head and eye protection, chemical-resistant gloves and boots, and full-face respirators fitted with organic vapor and acid gas filter cartridges.

Once completely emptied of everything, including non-hazardous waste such as furniture, the former storage areas in Building 803 will be decontaminated. As stated in Section 2.1, the building was screened for radiation contamination and determined to be compliant with the NYSDEC RAD-93-01 TAGM for radiation. Therefore, decontamination activities will be limited to the assessment of potential chemical (not radiological) contamination. Prior to decontamination activities, the location of any visible water, organic, or oily stains remaining in the building will be annotated on a building map for future reference during decontamination process confirmational sampling.

The Army will decontaminate Building 803 using a High Efficiency Particulate Air (HEPA) vacuum process. All debris collected during the vacuuming will be recovered and placed into one or more DOT-approved 55-gallon drums for subsequent transport under manifest to a hazardous waste treatment, storage, and disposal facility (TSDF). If evidence of organic or oily stains is noted in the building prior to the cleaning, more aggressive levels of decontamination may be applied to determine if noted stains can be removed. At this stage, limited volumes of a solvent (e.g., hexane) may be used in the attempt to remove any noted oily or organic-based stain. If a solvent is used, the extent of its use will be closely monitored to ensure that it is not spread beyond the bounds of the containment area. All applied solvent will be recovered by absorption onto a rag, cloth or other suitable absorption media.

Following the HEPA vacuum process and the removal of any obvious stains, confirmatory rinsate samples will be collected and analyzed for a directed list of hazardous substances used on wipes and stored in the building. If the confirmatory samples indicate that there is no residual contamination present according to the standards described in **Section 2.3.7**, Building 803 will be deemed clean. If evidence of contamination is present in any of the samples, the room where the sample was collected will be further sanitized by steam cleaning.

Prior to the steam cleaning, all painted surfaces in the room will be scrubbed using a stiff-bristled brush to remove, to the extent practicable, any peeling or loose paint. The room will then be HEPA vacuumed clean again. Once the preliminary decontamination steps are completed, all interior surfaces of the room will be decontaminated using a steam cleaner. The room or rooms requiring steam cleaning will be sealed with temporary containment structures during the cleaning process to prevent contamination of clean rooms by wastewater generated during the steam cleaning process. If it is necessary to steam clean the loading platform, temporary containment structures will be constructed around the four sides of the platform to prevent wastewater from spilling onto the ground. Rinsate samples will be collected following the steam cleaning to confirm the effectiveness of the decontamination process. If the room is still not deemed free of contamination based on the analysis of these samples, the cleaning contractor will repeat the cleaning process in the contaminated room until confirmation samples do not exceed identified cleanup levels.

Wastewater generated during the wash and rinse cycles will be collected inside Building 803 and pumped into DOT-approved 55-gallon drums or a bulk tank (preferred alternative) pending sampling and analysis, and transport off-site, under manifest (if necessary), for treatment and disposal.

All pumps, hoses, containers and equipment used during the proposed decontamination operations in Building 803 will be decontaminated after use by triple flushing/rinsing all exposed or wetted surfaces, followed by the capture and containerization of the recovered flush/rinse solution. If there is any residual doubt as to the degree of decontamination achieved for any piece of equipment, the equipment will be disposed of as a hazardous waste.

Disposable personnel protective equipment (PPE) worn by workers will be collected and placed in drums for subsequent disposal. Reusable personnel protective equipment will be decontaminated at the end of each day, and all wash and rinse solutions and adsorbent materials will be collected and containerized for proper disposal. The proper disposal of PPE and PPE rinse water may include disposal as hazardous waste at a TSDF if any of the PPE is visibly contaminated during the decontamination operation.

2.3.4 Confirmatory Sampling

Subsequent to the completion of the decontamination process, samples will be collected to confirm the degree of decontamination achieved. Confirmational sampling will include the collection of aqueous samples in accordance with the State of New York's "Rinsate Sample Collection Protocol". A copy of NYSDEC's Rinsate Sample Collection Protocol is attached to this work plan as **Appendix C**. Rinsate samples will only be collected from areas that are generally flat and "horizontal" (i.e., floors and ramps) where damming techniques can be effectively implemented. As stated in **Section 2.1**, there is no evidence to suggest that materials containing PCBs were ever stored or handled in Building 803. Therefore, no PCB wipe samples will be collected during the closure activities at Building 803.

Rinsate Samples

Rinsate samples will be analyzed for isopropanol, Freon® 11 (Trichlorofluoromethane), trichloroethylene, acetone, and toluene, the solvents applied to the wipes once stored in the building. No analyses will be performed for metals or semivolatile organic compounds (SVOCs) due to the fact that none of the waste allowed in the building by the RCRA Permit could result in metals or SVOC contamination. While there is lead paint present in the building, the building is to be abandoned in place with no future user identified. Therefore, the lead paint is not deemed to be of concern at this time.

All sample analyses will be transported to a laboratory that is certified by the New York State Department of Health (NYSDOH), where sample analyses will be performed in accordance with "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846 (Third Edition (November 1986), as amended by Updates: I (July 1992), II (September 1994), IIA (August 1993), IIB (January 1995), III (December 1996), and IIIA (April 1998), and later approved revisions), hereinafter referred to as "SW-846"; Appendix 19 of 6NYCRR Part 371; or an equivalent method approved by the NYSDEC. A list of the proposed sample preparation and analysis methods that will be used during this program is provided as **Table 2-4**. A discussion of sample data analysis is provided in **Section 2.3.7** below.

A minimum of seven (7) rinsate samples, plus additional quality assurance and quality control (QA/QC) samples will be collected from the flat "horizontal" surfaces (i.e., loading platform and interior floors) of Building 803. The location of the seven proposed rinsate samples will be selected using a randomized grid approach. Under the sample placement selection process, one rinsate sample will be collected from the each of the four vaults, the loading platform, and the interior and exterior hallways. Adjustments to the proposed scheme will be made as necessary based on consultations with the NYSDEC representative observing the closure process.

To place the random samples, each "horizontal" surface will be divided into a number of grid blocks with the size of each block determined by the size of the surface. A random number generation process will be used to select the location where the confirmation sample will be centered. Under this arrangement, grid sectors in each area of the building would measure approximately as follows:

- Loading Platform – 2.0' x 2.0' grid blocks – 36 total (4 x 9)
- Exterior Hallway – 2.0' x 2.0' grid blocks – 41 total (15 x 3 – 4 removed in doorways)
- Interior Hallway – 2.3' x 2.25' grid blocks – 20 total (10 x 2)
- Vaults – 2.0' x 2.6' grid blocks – 25 total (5 x 5)

The sample grid layout and representative sampling locations in Building 803 are shown in **Figure 2-4**. Rinsate samples will be collected from sampling areas that conform to NYSDEC's recommended 400 square inch surface area (i.e., 20 inches by 20 inches), and each sample will be collected from the center of the grid block selected. While the exact sizes of each grid block are subject to change based on field conditions, each surface will be divided into equally sized squares or rectangles with none of the sides less than 20 inches. Every attempt will also be made to keep grid block sizes reasonably close to the 20-inch by 20-inch size of the sampling surface. As all of the grid blocks will be slightly larger than the sampling area, the sample area will be placed at the center of the selected grid block. An exception will be made if any staining is visible in the grid block selected. In this case, the 400 square inch sampling area will be biased to cover as much of the stained area as possible within the confines of the selected grid block. The exact sizes of each grid block and locations of the samples will be determined in the field.

2.3.5 Decontamination Water and Solutions

All equipment flush/rinse water will be captured, recovered, and pumped into a storage tank. Once all decontamination operations are completed, samples will be collected from each tank and these samples will be analyzed for the previously noted solvents according to procedures identified in **Table 2.4**. Analytical results from the analysis of decontamination waters and solutions will be reviewed and compared to the standards outlined in **Section 2.3.7** to determine the appropriate disposal method for the rinse waters. If necessary, rinse waters will be handled as hazardous wastes; however, if the results indicate that the rinse water is free of contamination it will be disposed of at a wastewater treatment plant. If the steam cleaning of any of the rooms is necessary, the wastewater from the cleaning process will be treated in the same manner.

2.3.6 Grounds Surrounding Building 803

As stated previously, the Army is currently involved in the remediation of SEAD-12 under CERCLA

actions proceeding in that area. Over the course of this remediation, the grounds surrounding Building 803 will be remediated in accordance with a ROD to be developed for this area, which will be consistent with RCRA requirements. The specific actions to be performed at the grounds surrounding Building 803 will be described in a Remedial Action Workplan.

2.3.7 Laboratory Data Deliverable

The laboratory deliverables will be consistent with the NYSDEC ASP requirements, presented in Appendix B of the ASP. All data shall be reported using the ASP Category B and all deliverables will be in the CLP or CLP equivalent Format. The chemistry data package will contain adequate information and be presented in a clear, legible, concise, and consecutively paginated manner. The data package will include a sample data summary package and a sample data package. Raw data (including electronic media) of all field samples, QC samples, standards, and blanks should be archived and be available upon request for 5 years from the date of generation in accordance with the USEPA (2004) requirement.

2.3.8 Data Validation

Data validation for laboratory data will be performed for all definitive sample results in accordance with the requirements contained in the analytical method, the NYSDEC ASP, the USEPA Region 2 SOPs, the USEPA National Functional Guidelines for Data Review (USEPA, 2005b, 2004a). One hundred percent (100%) data validation will be manually performed by the project chemist or personnel trained by the project chemist. The project chemist is responsible for overseeing the data validation process and he/she will review at least 20% of the data validated by the trained personnel. In performing the data validation, the raw data are spot-checked in accordance with the Region 2 SOP to evaluate whether there is any transcription error. The review of laboratory data will focus on the following subjects, as applicable:

- COC forms;
- Holding times, sample preservation, and sample conditions (e.g., percentage of solids);
- Instrument calibration and performance;
- Method blanks, trip blanks, equipment/rinsate blanks;
- Method detection limits and laboratory-established reporting limits;
- Analytical batch control records including laboratory spike recoveries and spike duplicate results, and matrix spike recoveries and spike duplicate results;
- Surrogate standard recoveries;
- Internal standard areas and RTs;
- Confirmation results for explosives;
- Chromatograms and mass spectrums;

- Corrective actions;
- Formulas used for analyte quantitation;
- Laboratory and field duplicate results;
- Calculations supporting analyte quantitation;
- ICP serial dilution;
- interference check sample results;
- ICP linear range; and,
- Completeness of data.

2.3.9 Data Analysis

Rinsate Samples and Decontamination Water/Solutions

Analytical results from rinsate samples and from decontamination water and/or solution collected during the closure of Building 803 will be reviewed and compared to the 0.5 mg/L Toxicity Characteristic (TC) for trichloroethylene described in 40 CRF Part 261.24 to assess whether evidence of residual contamination exists and to determine how the water will be disposed (e.g., hazardous waste or disposed at wastewater treatment plant). There are no TC levels for the other solvents (i.e., isopropanol, Freon® 11, acetone, and toluene) present on the wipes that were stored in Building 803, so the 0.5 mg/L limit will be used for these compounds as well. Results of the analyses will be provided to and reviewed with NYSDEC to confirm that clean closure of the building has been achieved. If results of the rinsate sample analyses indicate that concentrations of any of the solvents are still present above the TC limit after the initial HEPA vacuuming, the contaminated room or rooms will be steam cleaned. Another round of confirmation rinsate samples will be collected and analyzed following the steam cleaning. The process will be continued until the room is deemed clean.

2.3.10 Certification of Closure

By approving the Final RCRA Closure Plan, NYSEC indicates that the successful completion of the activities detailed in the Plan should be sufficient to ensure NYSDEC's agreement that Building 803 has been closed in accordance with RCRA regulations. Within 60 days of completion of the final closure of Building 803, the Army is required to submit to the NYSDEC commissioner, by registered mail, a certification that the building has been closed in accordance with the specifications in the closure plan. This certification must be signed by an appropriate representative of the Army and by an independent professional engineer registered in New York Within 60 days of the submission of closure certification, NYSDEC will inform the Army that it is no longer required to maintain financial assurance for the final closure of the facility as required under NYCRR § 373-3.8(d). Documentation supporting the

independent registered professional engineer's certification must be furnished to the commissioner upon request during the review period, and NYSEC will not concur with the closure certification if there is reason to believe that closure was not performed in accordance with the submitted closure plan. If NYSDEC does not concur with the submitted certification, the Army will receive a letter detailing the reason or reasons for non-concurrence.

2.3 11 Schedule

The Army plans to begin closure of Building 803 following the completion of a Remedial Action Workplan for SEAD-12. The anticipated timetable for closure of this facility is depicted in **Figure 2-3**. As shown, closure and certification of the closure of Building 803 is expected to be completed within 150 days of the Army's notification of its intention to close the Mixed Waste Storage Facility.

2.3.12 Closure Costs

An estimate of the costs to close Building 803, the Mixed Waste Storage Facility has been developed using MCACES. Costs projected for this activity have been derived based on the Army retaining a third-party consultant to oversee the proposed closure of Building 803 and to collect the necessary samples for analysis, and a third-party organization being retained to complete all of the required decontamination and hazardous waste removal operations. All decontamination wastes deemed hazardous will be shipped off-site for disposal at a licensed TSDF.

The estimated cost for closing Building 803 is approximately $58,000; however, this cost includes the possible necessity of steam cleaning the entire building. If steam cleaning is not necessary, the cost will decrease significantly. Details of this estimate are summarized in **Table 2-5** and detailed in **Appendix D** of this closure plan.

TABLES

TABLE 2-1
RADIOLOGICAL SWIPE SAMPE DATA FOR BUILDING 803
JANUARY 1999 SAMPLES

SENECA ARMY DEPOT ACTIVITY - ROMULUS, NEW YORK

Identification*		DPM		
		Alpha	Beta	Gamma
803V1	124224	1.9	3.5	0.0
803V2	124225	0.0	0.0	0.0
803D1	124226	0.0	0.0	0.0
803D2	124227	0.0	0.0	0.0
803D3	124228	0.0	0.0	0.0
803D4	124229	0.0	0.0	0.0
803D5	124230	0.0	0.0	0.0
803D6	124231	0.0	0.0	0.0
803D7	124232	0.0	0.0	0.0
* A V in the sample identification indicates that the swipe was collected				
from a vent above a door frame, a D indicates collection from a floor drain				

Table 2-2
Summary Statistics of Phase I Scanning Measurements VS Instrument Scanning Flag Value
October 1999 to January 2000

Seneca Army Depot Activity - Romulus, New York

Building	Room	Measurement Type	Number of Grids Scanned	Minimum (cpm) [a/]	Maximum (cpm)	Mean (cpm)	Flag Value (cpm) [b/]	Maximum Reading Greater than Flag?
ALPHA/BETA FLOOR MONITOR								
803	2	AB [c/]	4	400	900	613	2807	No
803	4	AB	4	400	620	505	2807	No
803	5	AB	4	400	620	510	2807	No
803	6	AB	5	300	900	630	2807	No
803	7	AB	6	700	700	700	2807	No
804	2	AB	28	400	1200	732	2807	No
804	**3B**	**AB**	**35**	**400**	**3000**	**860**	**2807**	**Yes**
804	4B	AB	2	400	700	525	2807	No
804	6B	AB	11	400	1200	659	2807	No
805	1	AB	8	600	800	700	2807	No
806	1	AB	6	400	700	508	2807	No
810	1	AB	21	400	1100	807	2807	No
812	32	AB	4	400	600	500	2807	No
815	15	AB	6	600	1000	825	2807	No
816	8	AB	23	200	1000	572	2807	No
816	9	AB	12	40	600	162	2807	No
816	10	AB	4	600	1000	813	2807	No
819	1	AB	36	800	1100	924	2807	No
819	2	AB	13	400	1200	888	2807	No
819	3	AB	49	400	2000	1001	2807	No
819	4	AB	12	750	1050	917	2807	No
819	5	AB	12	800	1200	946	2807	No
819	6B	AB	14	500	950	750	2807	No
819	7	AB	10	1000	1200	1115	2807	No
819	9	AB	9	900	1200	1033	2807	No
819	10	AB	2	1200	1200	1200	2807	No
819	11B	AB	19	700	1200	955	2807	No
819	12D	AB	44	200	1200	743	2807	No
ALPHA/BETA PHOSWICH								
803	1	AB	22	40	380	162	854	No
803	2	AB	250	80	600	177	854	No
803	**3**	**AB**	**20**	**50**	**900**	**322**	**854**	**Yes**
803	4	AB	250	40	460	160	854	No
803	5	AB	250	60	400	300	854	No
803	**6**	**AB**	**249**	**40**	**2500**	**172**	**854**	**Yes**
803	7	AB	23	180	350	310	854	No
806	1	AB	18	100	350	202	854	No
810	1	AB	34	140	600	335	854	No
812	32	AB	17	100	480	274	854	No
ALPHA/BETA HAND-HELD								
804	1	AB	29	100	340	221	534	No
804	2	AB	14	40	360	166	534	No
804	**3B**	**AB**	**54**	**40**	**1000**	**216**	**534**	**Yes**
804	**4B**	**AB**	**29**	**30**	**600**	**162**	**534**	**Yes**
804	5B	AB	49	40	400	161	534	No
804	6B	AB	34	40	360	147	534	No
805	1	AB	33	80	400	192	534	No
815	15	AB	30	60	200	130	534	No
816	8	AB	84	40	400	127	534	No
816	**9**	**AB**	**6**	**200**	**1000**	**604**	**534**	**Yes**
816	10	AB	26	40	200	113	534	No
819	2	AB	18	90	320	215	534	No
819	**3**	**AB**	**97**	**40**	**950**	**156**	**534**	**Yes**

Table 2-2
Summary Statistics of Phase I Scanning Measurements VS Instrument Scanning Flag Value
October 1999 to January 2000

Seneca Army Depot Activity - Romulus, New York

Building	Room	Measurement Type	Number of Grids Scanned	Minimum (cpm) [a/]	Maximum (cpm)	Mean (cpm)	Flag Value (cpm) [b/]	Maximum Reading Greater than Flag?
819	4	AB	14	220	400	283	534	No
819	5	AB	13	110	300	186	534	No
819	6B	AB	22	150	300	215	534	No
819	7	AB	11	250	360	275	534	No
819	8B	AB	36	100	500	242	534	No
819	9	AB	9	150	230	169	534	No
819	10	AB	18	140	370	246	534	No
819	11B	AB	49	80	450	205	534	No
819	12D	AB	58	60	450	167	534	No
GAMMA FIDLER								
803	1	gamma	22	1000	9000	4568	19000	No
803	2	gamma	254	2000	8000	4194	19000	No
803	3	gamma	20	3000	8000	5250	19000	No
803	4	gamma	254	3000	11000	5608	19000	No
803	5	gamma	254	2000	9000	4303	19000	No
803	6	gamma	254	2000	8500	3594	19000	No
803	7	gamma	29	5950	9250	7793	19000	No
804	1	gamma	29	8800	15400	12403	19000	No
804	2	gamma	42	4000	16000	9474	19000	No
804	**3B**	**gamma**	**83**	**4000**	**20000**	**9505**	**19000**	**Yes**
804	4B	gamma	31	4000	9000	6190	19000	No
804	5B	gamma	49	500	15000	8993	19000	No
804	6B	gamma	45	4000	14000	7626	19000	No
805	**1**	**gamma**	**33**	**8000**	**20000**	**13174**	**19000**	**Yes**
806	1	gamma	24	6000	9000	7469	19000	No
810	1	gamma	67	6000	18000	10444	19000	No
812	32	gamma	21	5000	8000	6976	19000	No
815	15	gamma	73	5000	14000	8173	19000	No
816	8	gamma	82	5000	15000	8416	19000	No
816	9	gamma	44	5900	10000	7888	19000	No
816	10	gamma	30	6000	12000	8408	19000	No
819	1	gamma	36	6500	10500	7722	19000	No
819	2	gamma	31	5000	16000	10661	19000	No
819	3	gamma	146	2900	16000	7107	19000	No
819	4	gamma	26	7500	15500	12370	19000	No
819	5	gamma	25	8500	16000	12950	19000	No
819	6B	gamma	36	7000	15500	10790	19000	No
819	7	gamma	21	9500	16500	13333	19000	No
819	8B	gamma	36	7000	17000	11903	19000	No
819	9	gamma	38	6500	14000	10776	19000	No
819	10	gamma	32	9000	15000	12109	19000	No
819	11B	gamma	68	4000	16000	9154	19000	No
819	12D	gamma	102	3100	13650	6478	19000	No

[a/] cpm = counts per minute.

[b/] For instruments measuring gross alpha and beta radiation, the flag value is equal to the instrument-specific $DCGL_{EMC/5}$ plus the mean background scanning value. The $DCGL_{EMC/5}$ is calculated by dividing the $DCGL_{EMC}$ (see Table 4-2) by 5 to provide a more conservative flag value. For instruments measuring gross gamma radiation, the flag value was equal to the 95% UCL of the background scanning results.

[c/] AB = gross alpha and beta radiation.

Table 2-3
Summary of Phase I Smear Sampling Results[a/, b/, c/]
October 1999 to January 2000
Seneca Army Depot Activity - Romulus, New York

BUILDING	ROOM	ALPHA (dpm) [d/]			BETA (dpm)			GAMMA (dpm)			TRITIUM BETA (dpm)		
		MINIMUM	MAXIMUM	MEAN	MINIMUM	MAXIMUM	MEAN	MINIMUM	MAXIMUM	MEAN	MINIMUM	MAXIMUM	MEAN
803	1	0.0	23.0	2.5	0.0	64.0	5.7	0.0	0.0	0.0	0.0	80.0	6.9
803	2	0.0	25.0	1.2	0.0	43.0	2.2	0.0	56.0	0.2	0.0	54.0	1.5
803	3	0.0	3.7	0.4	0.0	2.7	0.4	0.0	0.0	0.0	0.0	18.6	2.2
803	4	0.0	6.4	0.3	0.0	16.0	0.5	0.0	58.0	0.4	0.0	31.0	0.5
803	5	0.0	8.3	0.5	0.0	17.3	0.9	0.0	84.0	1.3	0.0	41.4	2.3
803	6	0.0	26.3	0.7	0.0	14.9	1.0	0.0	65.0	0.0	0.0	73.6	8.6
803	7	0.0	2.5	0.3	0.0	4.4	0.2	0.0	0.0	0.0	0.0	9.0	0.6
804	1	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	26.0	0.9
804	2	0.0	0.8	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
804	3A/B	0.0	1.3	0.0	0.0	3.2	0.0	0.0	0.0	0.0	0.0	176.0	3.9
804	4A/B	0.0	0.0	0.0	0.0	4.9	0.2	0.0	0.0	0.0	0.0	11.5	0.7
804	5A/B	0.0	1.6	0.0	0.0	2.7	0.1	0.0	0.0	0.0	0.0	0.0	0.0
804	6A/B	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.2	0.3
805	1	0.0	1.1	0.2	0.0	5.4	0.4	0.0	0.0	0.0	0.0	12.0	0.3
806	1	0.0	0.0	0.0	0.0	2.7	0.1	0.0	0.0	0.0	0.0	10.2	0.4
810	1	0.0	1.5	0.0	0.0	3.4	0.1	0.0	0.0	0.0	0.0	9.2	0.4
812	32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
815	15	0.0	138.5	8.3	0.0	60.0	3.7	0.0	66.7	1.7	0.0	301.0	11.4
816	8	0.0	1.1	0.1	0.0	5.0	0.1	0.0	65.0	1.6	0.0	8.4	0.2
816	9	0.0	15.1	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
816	10	0.0	1.6	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
819	1	0.0	14.0	0.3	0.0	25.0	0.7	0.0	78.0	1.4	0.0	123.0	2.1
819	2	0.0	3.4	0.2	0.0	5.2	0.7	0.0	64.0	2.1	0.0	0.0	0.0
819	3	0.0	22.3	3.4	0.0	38.8	5.1	0.0	76.0	1.2	0.0	58.0	1.1
819	4	0.0	1.2	0.2	0.0	14.1	0.2	0.0	71.4	2.7	0.0	15.0	1.3
819	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
819	6A/B	0.0	4.0	0.3	0.0	5.8	0.6	0.0	0.0	0.0	0.0	45.0	12.9
819	7	0.0	1.4	0.2	0.0	2.9	0.1	0.0	0.0	0.0	0.0	17.0	3.5
819	8A/B	0.0	1.7	0.1	0.0	3.2	0.1	0.0	0.0	0.0	0.0	17.0	2.0
819	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	59.0	1.6	0.0	26.0	1.9
819	10	0.0	17.0	0.7	0.0	16.0	2.7	0.0	0.0	0.0	0.0	17.6	0.0
819	11A/B	0.0	1.1	0.1	0.0	5.8	0.3	0.0	73.0	2.8	0.0	22.0	2.3
819	12A/B	0.0	1.3	0.1	0.0	4.7	0.1	0.0	77.0	1.3	0.0	15.7	4.6
722	NA	0.0	1.8	0.1	0.0	3.3	0.1	0.0	59.0	1.5			
CO912	1												

Notes:

[a/] ANSI/ HPS N13.13-1999 Screening levels: Group 1- Ra, Th, and Transuranics 600 dpm; Group 2 - Uranium and Select High Dose Beta-Gamma emitters, 6000 dpm; Group 3 - General Beta-Gamma emitters, 60000 dpm; Group 4 other Beta-Gamma Emitters, 600000 dpm.

[b/] NYS DOL proposed acceptable levels: U-ntuaral and assoc. decay products - 1000 dpm alpha/cm^2; Transuranics - 200 dpm/cm^2; Beta-Gamma Emitters - 1000 beta-gamma/ 100 cm^2.

[c/] Smear Samples collected over a 100 cm^2 area.

[d/] dpm = disintegrations per minute.

TABLE 2-4
SAMPLE PREPARATION AND ANALYSIS PROCEDURES
BUILDING 803 RINSATE SAMPLES

SENECA ARMY DEPOT ACTIVITY – ROMULUS, NEW YORK

PARAMETER	PREPARATION	ANALYSIS
Isopropanol	Method 5030B	Method 8015B
Trichloroethylene, Freon, Acetone, Toluene	Method 5030B	Directed List Method 8260B

TABLE 2-5
EXPECTED CLOSURE COSTS - BUILDING 803

SENECA ARMY DEPOT ACTIVITY – ROMULUS, NEW YORK

Closure Activity	**Estimated Costs (Dollars)**
33.15 Decontamination	$ 30,240
33.17 Decontamination Waste Disposal	$ 7,240
33.18 Sample Collection and Analysis – Waste Waster	$1,800
33.19 Sample Collection and Analysis – Rinsate	$3,380
33.22 Closure Certification	$ 9,240
33.26 Project Management/Procurement	$ 6,200
Total	**$58,100**

FIGURES

SEAD-12
FORMER WEAPONS STORAGE AREA

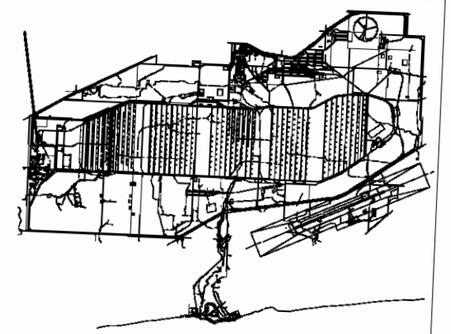
BUILDING 803

LEGEND

N

400 0 400 800 Feet

SEAD-72



PARSONS

SENECA ARMY DEPOT ACTIVITY

BLDG 803
RCRA CLOSURE PLAN

FIGURE 2-1
BUILDING 803
LOCATION MAP

1" = 150' OCTOBER 2005

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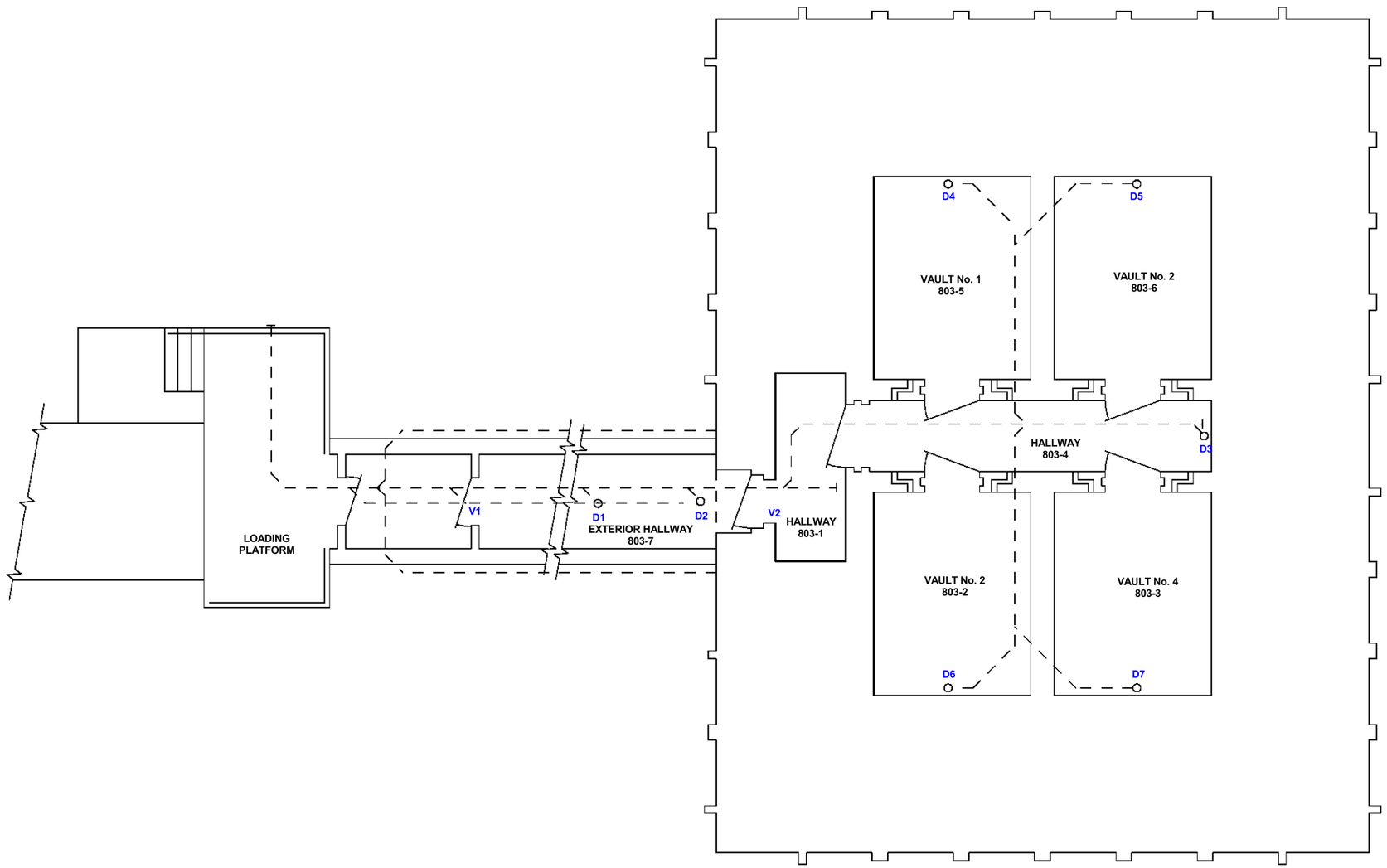

LEGEND

Wall

Drain line

V1 Radiological Swipe Sample Locations (January 1999)

V - vent above door
D - floor drain

N

PARSONS

SENECA ARMY DEPOT ACTIVITY
BLDG 803
RCRA CLOSURE PLAN

FIGURE 2-2
BUILDING 803 LAYOUT

1" = 8' | OCTOBER 2005

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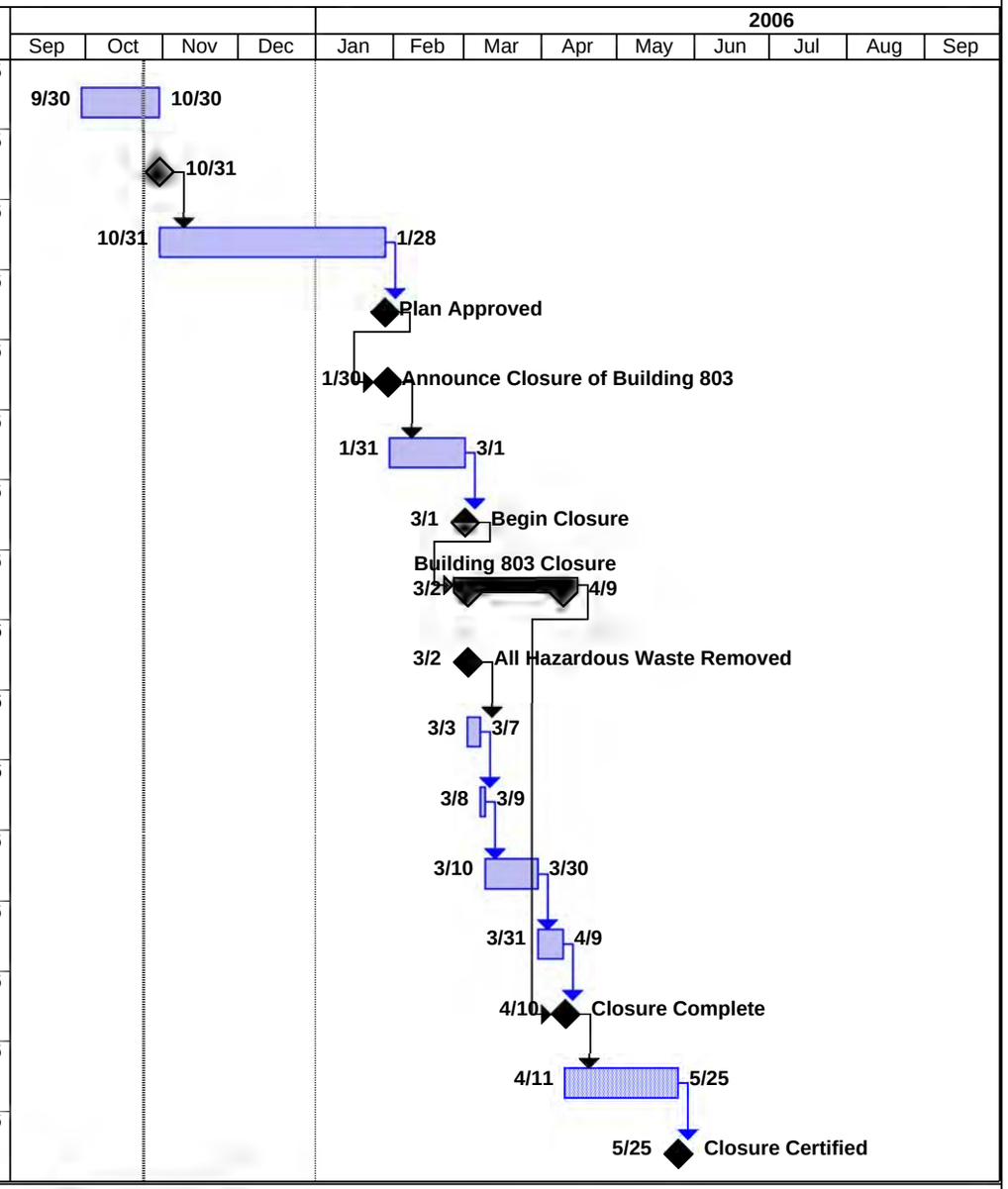
FIGURE 2-3
CLOSURE SCHEDULE - BUILDING 803
Mixed Waste Storage Facility

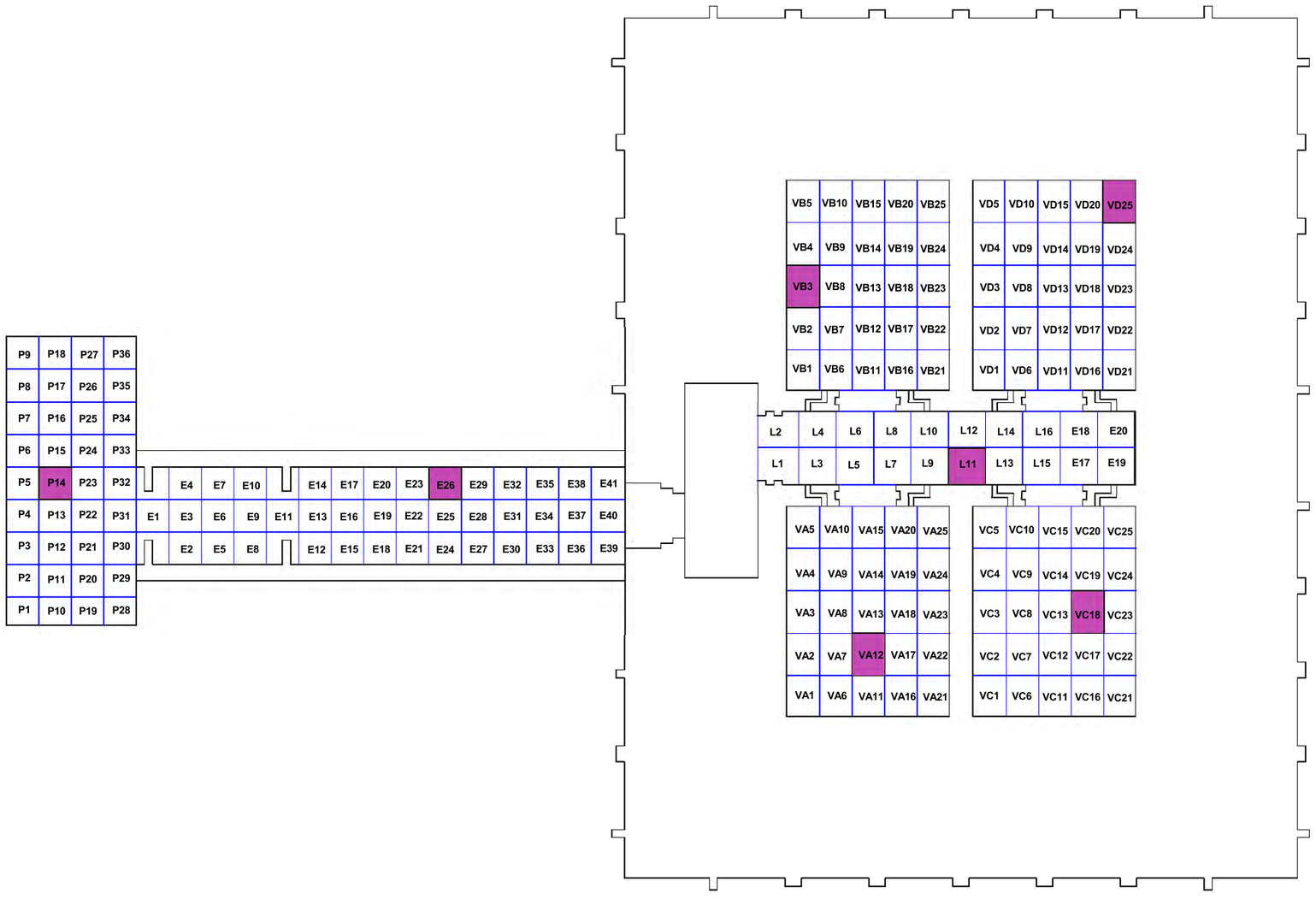
Seneca Army Depot Activity - Romulus, New York

ID	ID	Task Name	Duration	Start	Finish
1	1	**Prepare Final Closure Plan**	31 days	Fri 9/30/05	Sun 10/30/05
2	2	**Submit Final Closure Plan - Building 803**	0 days	Mon 10/31/05	Mon 10/31/05
3	3	**Regulatory Review of Closure Plan**	90 days	Mon 10/31/05	Sat 1/28/06
4	4	**Closure Plan Approval**	1 day	Sun 1/29/06	Sun 1/29/06
5	5	**Announce/Document Intended Closure of Building 803**	1 day	Mon 1/30/06	Mon 1/30/06
6	6	**Waiting Period**	30 days	Tue 1/31/06	Wed 3/1/06
7	7	**Begin Closure**	0 days	Wed 3/1/06	Wed 3/1/06
8	**8**	**Perform Closure**	38 days	Thu 3/2/06	Sun 4/9/06
9	9	**Complete Removal of All Hazardous Waste From Unit**	0 days	Thu 3/2/06	Thu 3/2/06
10	10	**Decontamination of Building 803, Wash and Rinse**	5 days	Fri 3/3/06	Tue 3/7/06
11	11	**Collect Rinsate Samples**	2 days	Wed 3/8/06	Thu 3/9/06
12	12	**Sample Analysis**	21 days	Fri 3/10/06	Thu 3/30/06
13	**13**	**Data Analysis**	10 days	Fri 3/31/06	Sun 4/9/06
14	14	**Complete Closure Activities**	0 days	Mon 4/10/06	Mon 4/10/06
15	15	**Prepare Final Closure Certification**	45 days	Tue 4/11/06	Thu 5/25/06
16	16	**Submit Closure Certification**	0 days	Thu 5/25/06	Thu 5/25/06



Project: Figure2_2
Date: Mon 10/24/05

Task
Progress
Milestone
Summary
Rolled Up Task
Rolled Up Milestone
Rolled Up Progress
Split
External Tasks
Project Summary
Group By Summary



LEGEND

Wall

VA1 — Rinsate sample grid
P - Loading Platform
E - Exterior Hallway
L - Large Interior Hallway
V - Vault (A, B, C, or D)

Proposed rinsate sample location

N

PARSONS

SENECA ARMY DEPOT ACTIVITY
BLDG 803
RCRA CLOSURE PLAN

FIGURE 2-4
BUILDING 803 - PROPOSED
RINSATE SAMPLING LOCATIONS

SCALE: 1" = 8' | OCTOBER 2004

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APPENDIX A

STATE OF NEW YORK - DEPARTMENT OF HEALTH

INTEROFFICE MEMORANDUM

TO: William Condon, Chief, Environmental Radiation Section
Bureau Environmental Radiation Protection

FROM: Gary H. Baker, Principal Radiological Health Specialist
Bureau Environmental Radiation Protection

SUBJECT: Seneca Army Depot Site Survey Results of 6/10/93

DATE: September 7, 1993

Summary-

DEC and BERP staff performed a site survey of the Seneca Army Depot on 6/10/93. The survey results indicate that there are several areas of contamination inside and outside of igloo E0804 and one hot spot in igloo E0808 which require further remediation. The areas of contamination in Building E0804 are along the concrete drainage ditch, in the outside drains which exit the building on the North wall at a height of one to two feet above ground level, and in the soil around the drains. The debris samples from the drains and the soil samples all appear to have elevated concentrations of U-238 and Ra-226.

Details-

On 6/10/93, Kamal Gupta and Marsden Chen of the NYSDEC and Gary Baker of the NYSDOH made a site visit of the Seneca Army Depot to investigate possible contamination in three areas as follows: a) Buildings 356 section 4, 357 section 4 and 324 which had been used to store Columbite ore. b) Storage igloos E0801 to E0811 which had been used to store pitchblend and c) Building 803 which is used for storage of radioactive materials and waste.

Upon arrival at the site, state DEC and DOH staff met with Steve Absalah, Jim Miller, and Randy Bataglia of the site environmental office. Jim Miller accompanied the DEC and DOH staff during the surveys of the buildings and grounds. Surveys were conducted of buildings 356, 357 and 324; storage igloos numbers 802, 804, 806, 808, 809, 710 (background location outside); and Building 803. Following the site survey, DOH and DEC staff met with the Army environmental staff to discuss the survey findings. A videotape of the cleanup was provided.

Survey methodology-

The following instruments were used to perform surveys: a NYSDOH Ludlum microR meter model 12S ser. 25116, calibrated on 10/27/92; a NYSDEC Ludlum Model 3-98 with internal GM probe and external NaI probe calibrated 11/4/92

Ser. 69783; and a NYSDOH Eberline E-120 GM survey meter Ser. 6650, calibrated 6/23/92.

Gamma survey readings were taken using both the micro R meter and the DEC instrument in external mode. Beta readings were taken using the E-120 with HP190. The microR and DEC instrument were compared for accuracy prior to surveying using a 1 microCurie Cs-137 source and background readings. Also. instrument readings were compared several times during the surveys until the DEC instrument's external probe failed to operate during a survey of the drain on Igloo E0806. It was noted that the DEC instrument readings had to be divided by 170 to obtain micro/hr from cpm. Soil, debris, and wipes samples were taken in the areas with the highest readings.

During the survey of building 356 it was noted that the Columbite Ore (5,284 drums) had been transfered from Building 356 to a DLA facility in Binghamton, N.Y. approximately two weeks prior to the survey date. A sample of the ore can be obtained from the Binghamton facility if needed. The Army has plans to clean building 356 with a HEPA filtered vacuum system. All areas and buildings where the ore had been stored were surveyed and wipes were taken for analysis.

Results-

With the exception of igloo E0804 and one hot spot in E0808 which showed elevated readings, no significant deviations from background were noted in the buildings and storage igloos.

The following is a summary of survey readings recorded and sample locations:

Survey meter readings-

Location-Readings (microR/hr;E-120 GM)

Background areas 4-15 microR/hr; 20-40 cpm

324 Building 324-All areas 6-8 micro R/hr; Brick column 10 microR/hr

356 section 4 at wipe #1 Building 356 - 12 microR/hr; 20 cpm

356 section 4 at wipe #2 Building 356 - 15 microR/hr

356 section 4 at wipe #3 Building 356 - 9.4 microR/hr; 20 cpm

357 section 4 at wipe #2 Building 357 - 6 microR/hr; 20 cpm

357 section 4 at wipe #3 Building 357 - 6 microR/hr; 20 cpm

E0802 Inside and outside and in drains - 8-10 microR/hr

E0804 Inside of igloo E0804 along East Wall Center (40' from North wall- 40 microR/hr; 400 cpm beta

E0804 Surface Soil next to drain on North wall (East side) - 47 microR/hr; 100 cpm beta

E0804 Soil at depth of 4-6 inches depth outside drain North Wall East side - 106 microR/hr (18000cpm with DEC instr.)

E0804 Wall at drain East side 40 microR/hr maximum

E0804 Outside rear - 4 microR/hr (approximately 10' from South Wall)

E0804 Outside front - (approximately 10' from North Door - 4 microR/hr)

E0804 Inside of igloo E804 at corner of South and East Walls - 12 microR/hr

E0804 Inside 30' from North Wall 16-18 uR/hr; 200 cpm beta

E0804 Inside along East Wall floor 6' from South Wall - 12 microR/hr; 350 cpm beta

E0804 In drainage ditch outside approximately 12' from North Wall 10-18 uR/hr

E0804 Outside North Wall at west drain 18 uR/hr; (12 uR/hr at one meter from wall

E0806 Most areas 8-12 microR/hr; 13 microR/hr
West drain inside, 20' from North Wall; 2300 cpm beta

E0806 Outside both East and West drain outlets - 12 microR/hr; 20 cpm beta

E0808 Inside and Outside at drains to 10 microR/hr;20-30 cpm beta
West drainage ditch, 10' from North Wall- 40-60 cpm beta

E0809 7 to 8 microR/hr; 20-30 cpm beta; West drain- 8 microR/hr; 20 cpm beta

E0809 Outside East drain - 11 microR/hr; 20 cpm beta
Outside West drain - 10 microR/hr; 20 cpm beta

357-2 Building 357 <20 dpm/<20 dpm

357-3 Building 357 <20 dpm/<20 dpm

E0804W1 Igloo E0804 (East wall 60' from North Wall - wipe of drain area.
77 + 6 dpm/48 + 3 dpm

E0804W2 Igloo E0804 52 + 5 dpm 54 + 4 dpm

E0806W1 Igloo E0806 <20 dpm/<20 dpm

cc: Dr. Rimawi
Mr. Huang

APPENDIX B

JAN-21-99 WED 10:40 P. 02

DEPARTMENT OF THE ARMY
UNITED STATES ARMY AVIATION AND MISSILE COMMAND
REDSTONE ARSENAL, ALABAMA 35898-5000

REPLY TO
ATTENTION OF

AMSAM-TMD-SR(C) (385-11d) 20 January 1999

MEMORANDUM FOR Commander, Seneca Army Depot Activity, ATTN: SIOSE-S, 5786 State Rte 96, Romulus, NY 14541-5001

SUBJECT: Wipe Tests

1. The results of wipe tests made at your facility, which this laboratory received on 4 January 1999, are indicated on the enclosed sheets.

2. Results exceeding the limit of decision are reported as defined by NCRP 58.

3. Traceability to NIST is provided by an Am-241 source, SN: CS957, last calibrated date: 2 June 1997, a Sr-90 source, SN: CS 945, last calibrated date: 3 June 1997, and a Cs-137 source, SN: CS 933, last calibrated date: 10 June 1997. These sources were calibrated at NIST and were used to calibrate the counters used to evaluate your wipe tests. The NIST calibration documents are maintained on file at this facility.

4. The POC is Sun Almond, COM 256-876-3340/0472 or DSN 746-3340/0472.

Encls

PATRICK J. KUYKENDALL
Chief, Rad Standards and Dos Lab

Seneca Army Depot

IDENTIFICATION		DPM			IDENTIFICIATION		DPM		
		Alpha	Beta	Gamma			Alpha	Beta	Gamma
802V2	124177	0.0	0.0	0.0	810V2	124132	0.0	0.0	0.0
804R1	124173	0.0	0.0	0.0	810V3	124133	0.0	0.0	0.0
804R2	124174	0.0	0.0	0.0	810V4	124134	0.0	3.1	0.0
804R3	124175	0.0	0.0	0.0	810V5	124135	0.0	6.9	0.0
805R1	124173	0.0	0.0	0.0	810D1	124136	0.0	0.0	0.0
806V1A	124145	0.0	3.4	0.0	810D2	124137	0.0	0.0	0.0
806V2	124146	0.0	0.0	0.0	810D3	124138	0.0	0.0	0.0
806V3	124147	0.0	0.0	0.0	812V1A	124168	0.0	0.0	59.0
806V4	124148	0.0	2.8	0.0	812V1B	124169	0.0	0.0	0.0
806V5	124149	0.0	0.0	0.0	812V2	124170	0.0	0.0	0.0
806V6	124150	0.0	0.0	0.0	812V3	124171	0.0	0.0	0.0
806V7	124151	0.0	0.0	0.0	812D1	124172	0.0	0.0	0.0
806V8	124152	1.0	4.3	0.0	815V17	124018	0.0	3.4	0.0
806V9	124153	0.0	0.0	0.0	815V16	124019	0.0	0.0	0.0
806V10	124154	0.0	4.3	0.0	819R1	124178	0.0	0.0	0.0
806V11	124155	0.0	2.8	0.0	819R13	124179	0.0	0.0	0.0
806V12	124156	0.0	5.2	0.0	819R14	124181	0.0	0.0	0.0
806V1B	124157	0.0	2.8	0.0	819R2	124182	0.0	0.0	0.0
806D1	124158	0.0	0.0	0.0	819R3	124183	0.0	0.0	0.0
806V13	124159	0.0	2.8	0.0	819R4	124184	1.0	0.0	0.0
806V14	124160	0.0	0.0	0.0	819R15	124185	0.0	0.0	0.0
806V15	124161	0.0	6.6	0.0	819R11	124186	0.0	0.0	0.0
806V16	124162	0.0	0.0	0.0	819R10	124187	0.0	0.0	0.0
806V19	124163	1.0	2.8	0.0	819R12	124180	0.0	0.0	0.0
807V1A	124139	0.0	0.0	0.0	827-1	124015	0.0	0.0	0.0
807V1B	124140	1.4	0.0	0.0	827-2	124016	0.0	0.0	0.0
807D1	124141	0.0	0.0	0.0	827-3	124017	0.0	0.0	0.0
807D2	124142	0.0	0.0	0.0	WT-032		0.0	3.1	0.0
807D3	124143	0.0	0.0	0.0	WT-033		0.0	0.0	0.0
807D4	124144	0.0	0.0	0.0	WT-034		0.0	0.0	0.0
809V1	124164	1.0	0.0	0.0	WT-035		0.0	0.0	0.0
809V2	124165	0.0	0.0	0.0	WT-036		0.0	0.0	0.0
809V3	124166	0.0	0.0	0.0	WT-037		0.0	0.0	0.0
809V4	124167	0.0	0.0	0.0	WT-038		0.0	0.0	0.0
810V1	124131	1.4	6.9	0.0	WT-039		0.0	0.0	0.0

Note: Limit of Detection (LD) is 2 dpm for Alpha, 7 dpm for Beta, and 113 dpm for Gamma.

probably above LD.

Seneca Army Depot

IDENTIFICATION	DPM			IDENTIFICATION	DPM		
	Alpha	Beta	Gamma		Alpha	Beta	Gamma
815HRR1	98.3	51.9	0.0	815HRW3C1	0.0	0.0	0.0
815HRR2	124.2	85.3	0.0	815HRW3C2	0.0	0.0	0.0
815HRR3	161.3	81.4	74.9	815HRW3C3	0.0	0.0	0.0
815HRR4	87.4	48.0	0.0	815HRW4A1	0.0	0.0	0.0
815HRR5	106.2	63.6	0.0	815HRW4A2	0.0	0.0	0.0
815HRR6	92.5	55.5	0.0	815HRW4A3	0.0	0.0	0.0
815HRR7	114.2	65.4	0.0	815HRW4B1	0.0	0.0	0.0
815HRR8	33.8	15.6	0.0	815HRW4B2	0.0	0.0	0.0
815HRR9	26.5	12.3	0.0	815HRW4B3	0.0	0.0	0.0
815HRR10	129.1	57.6	62.0	815HRW4B4	0.0	0.0	0.0
815HRR11	44.2	30.3	0.0	815HRW4B5	0.0	0.0	0.0
815HRW1A1	0.0	0.0	0.0	815HRW4C1	0.0	0.0	0.0
815HRW1A2	0.0	0.0	0.0	815HRW4C2	0.0	0.0	0.0
815HRW1B1	0.0	0.0	0.0	815HRW4C3	0.0	0.0	0.0
815HRW1B2	0.0	0.0	0.0	815HRW4C4	0.0	0.0	0.0
815HRW1B3	1.2	0.0	0.0	815HRW4C5	0.0	0.0	0.0
815HRW1C1	0.0	0.0	0.0	815HRC1A1	0.0	0.0	0.0
815HRW1C2	0.0	0.0	0.0	815HRC1A2	0.0	0.0	0.0
815HRW1C3	1.2	0.0	0.0	815HRC1A3	0.0	0.0	0.0
815HRW2A1	0.0	0.0	0.0	815HRC1B1	0.0	0.0	0.0
815HRW2A2	0.0	0.0	0.0	815HRC1B2	0.0	0.0	0.0
815HRW2A3	0.0	0.0	74.3	815HRC1B5	0.0	0.0	0.0
815HRW2B1	0.0	0.0	0.0	815HRC1C1	0.0	0.0	0.0
815HRW2B2	0.0	0.0	0.0	815HRC1C2	0.0	0.0	0.0
815HRW2B3	0.0	0.0	0.0	815HRC1C3	0.0	0.0	0.0
815HRW2B4	0.0	0.0	0.0	815HRC1D1	0.0	0.0	0.0
815HRW2B5	0.0	0.0	0.0	815HRC1D2	0.0	0.0	0.0
815HRW2C1	0.0	0.0	0.0	815HRC1D3	0.0	0.0	0.0
815HRW2C2	0.0	0.0	0.0	815HRC1E1	0.0	0.0	0.0
815HRW2C3	0.0	0.0	0.0	815HRC1E2	0.0	0.0	0.0
815HRW2C4	0.0	0.0	0.0	815HRC1E3	0.0	0.0	0.0
815HRW2C5	0.0	0.0	0.0	815HRF1A1	2.2	0.0	0.0
815HRW3A1	0.0	0.0	0.0	815HRF1A2	3.1	3.9	0.0
815HRW3A2	0.0	0.0	0.0	815HRF1B1	0.9	0.0	0.0
815HRW3B1	0.0	0.0	0.0	815HRF1B2	1.2	0.0	0.0
815HRW3B2	0.0	0.0	0.0	815HRF1C1	1.2	0.0	0.0
815HRW3B3	0.0	0.0	0.0	815HRF1C2	3.1	0.0	0.0

Note: Limit of Detection (LD) is 2 dpm for Alpha, 7 dpm for Beta, and 113 dpm for Gamma.

Seneca Army Depot

IDENTIFICATION		DPM			IDENTIFICIATION		DPM		
		Alpha	Beta	Gamma			Alpha	Beta	Gamma
815ROOF 1	124094	0.0	0.0	0.0	816V32	124058	0.0	0.0	0.0
815ROOF 2	124095	0.0	0.0	0.0	816V47	124059	0.0	0.0	0.0
816ROOF 3	124096	0.0	0.0	0.0	816V36	124060	0.0	0.0	0.0
815ROOF 3	124097	0.0	0.0	0.0	816V33	124061	0.0	0.0	0.0
815ROOF 4	124098	0.0	0.0	0.0	816V38	124062	0.0	0.0	0.0
815ROOF 5	124099	0.0	0.0	0.0	816V39	124063	0.0	0.0	0.0
815ROOF 5	124100	0.0	0.0	0.0	816V40	124064	0.0	0.0	0.0
815RGOF 6	124101	0.0	0.0	0.0	816V35	124065	0.0	0.0	0.0
815ROOF 6	124102	0.0	0.0	0.0	816V42	124066	0.0	4.6	0.0
815ROOF 6	124103	0.0	0.0	0.0	816V34	124067	0.0	0.0	0.0
816ROOF 1	124104	0.0	0.0	0.0	816V41	124068	0.8	0.0	0.0
816ROOF 1	124105	0.0	0.0	0.0	816V48A	124069	0.8	6.1	0.0
816ROOF 1	124106	0.0	0.0	0.0	816V48B	124070	1.7	0.0	0.0
816ROOF 3	124107	0.0	0.0	0.0	816V47A	124071	3.3	3.7	0.0
816ROOF 4	124108	0.0	0.0	0.0	816V47B	124072	3.6	16.5	0.0
816ROOF 4	124109	0.0	0.0	0.0	816V49	124073	0.0	0.0	0.0
816ROOF 4	124110	0.0	0.0	0.0	816V50	124074	0.0	0.0	0.0
816ROOF 5	124111	0.0	0.0	0.0	816V51	124075	0.0	3.4	0.0
816ROOF 5	124112	0.0	0.0	0.0	816V52	124076	0.8	4.0	0.0
816ROOF 5	124113	0.0	0.0	0.0	816V30	124077	0.0	0.0	0.0
816ROOF 6	124115	0.0	0.0	0.0	816V12	124078	0.0	0.0	0.0
816ROOF 6	124116	0.0	0.0	0.0	816V1	124020	0.0	4.0	0.0
816ROOF 7	124117	0.0	0.0	0.0	816V2	124021	1.1	0.0	0.0
816ROOF 7	124119	0.0	0.0	0.0	816V3	124022	0.8	0.0	0.0
816ROOF 8	124120	0.0	0.0	0.0	816V4	124023	0.0	3.7	0.0
816ROOF 9	124121	0.0	0.0	0.0	816V5	124024	0.0	0.0	0.0
816ROOF 9	124122	0.0	0.0	0.0	816V28	124025	0.0	0.0	0.0
816ROOF 10	124123	0.0	0.0	0.0	816V7	124026	0.0	0.0	0.0
816ROOF 11	124124	0.0	0.0	0.0	816V46	124027	0.0	0.0	0.0
816ROOF 11	124125	0.0	0.0	0.0	816V22	124028	0.0	0.0	0.0
816ROOF 12	124126	0.0	0.0	0.0	816V13	124029	0.8	0.0	0.0
816ROOF 13	124127	0.0	0.0	0.0	816V21	124030	0.0	0.0	0.0
816ROOF 7	124118	0.0	0.0	0.0	816V25	124031	0.0	0.0	0.0
816ROOF 14	124128	0.0	0.0	0.0	816V17	124032	0.0	0.0	0.0
816ROOF 16	124129	0.0	0.0	0.0	816V6	124033	0.0	0.0	0.0
816ROOF 15	124130	0.0	0.0	0.0	816V16	124034	0.0	0.0	0.0
816V7	124050	0.0	0.0	0.0	816V45	124035	0.0	0.0	0.0
816V20	124051	0.0	0.0	0.0	816V8	124036	0.0	0.0	0.0
816V26	124052	0.0	0.0	0.0	816V14	124039	0.0	0.0	0.0
816V29	124053	0.0	5.5	0.0	816V15	124040	0.8	0.0	0.0
816V19	124054	0.8	0.0	0.0	816V9	124041	1.1	3.4	0.0
816V27	124055	0.0	0.0	0.0	816	124046	0.0	0.0	0.0
816V13	124056	0.0	0.0	0.0	816V45	124047	0.0	0.0	0.0
816V31	124057	0.0	0.0	0.0	816V43	124048	0.0	0.0	0.0

Note: Limit of Detection (LD) is 2 dpm for Alpha, 7 dpm for Beta, and 113 dpm for Gamma.

Seneca Army Depot

IDENTIFICATION	DPM			IDENTIFICATION	DPM		
	Alpha	Beta	Gamma		Alpha	Beta	Gamma
816BW1A1	0.0	0.0	0.0	816BC1D2	0.0	0.0	0.0
816BW1A2	0.0	0.0	0.0	816BC1D3	0.0	0.0	0.0
816BW2A1	1.7	0.0	0.0	816BC1D4	0.0	0.0	0.0
816BW2A2	0.0	0.0	0.0	816BF1A1	0.0	0.0	0.0
816BW3A1	0.0	0.0	0.0	816BF1A2	0.0	0.0	0.0
816BW3A2	0.0	0.0	0.0	816BF1B1	0.0	0.0	0.0
816BW4A1	0.0	0.0	0.0	816BF1B2	0.0	0.0	0.0
816BW4A2	0.0	0.0	0.0	816CR1	0.0	0.0	0.0
816BW1B1	0.0	0.0	0.0	816CR2	0.0	0.0	0.0
816BW1B2	0.0	0.0	0.0	816CW1A1	0.0	0.0	0.0
816BW1B3	0.0	0.0	0.0	816CW1A2	0.0	0.0	0.0
816BW1B4	0.0	0.0	0.0	816CW2A1	0.0	0.0	0.0
816BW2B1	0.0	0.0	0.0	816CW3A1	0.0	0.0	0.0
816BW2B2	0.0	0.0	0.0	816CW3A2	0.0	0.0	0.0
816BW2B3	0.0	0.0	0.0	816CW4A1	0.0	0.0	0.0
816BW2B4	0.0	0.0	0.0	816CW1B1	0.0	0.0	0.0
816BW3B1	0.0	0.0	0.0	816CW1B2	0.0	0.0	0.0
816BW3B2	0.0	0.0	0.0	816CW1B3	0.0	0.0	0.0
816BW3B3	0.0	0.0	0.0	816CW1B4	0.0	0.0	0.0
816BW3B4	0.0	0.0	0.0	816CW2B1	0.0	0.0	0.0
816BW4B1	0.0	0.0	0.0	816CW2B2	0.0	0.0	0.0
816BW4B2	0.0	0.0	59.8	816CW3B1	0.0	0.0	0.0
816BW4B3	0.0	0.0	0.0	816CW3B2	0.0	0.0	0.0
816BW4B4	0.0	0.0	0.0	816CW3B3	0.0	0.0	0.0
816BC1A1	0.0	0.0	0.0	816CW3B4	0.0	0.0	0.0
816BC1A2	0.0	0.0	0.0	816CW4B1	0.0	0.0	0.0
816BC1A3	0.0	0.0	0.0	816CW4B2	0.0	0.0	0.0
816BC1A4	0.0	0.0	0.0	816CC1A1	0.0	0.0	0.0
816BC1B1	0.0	0.0	0.0	816CC1A2	0.0	0.0	0.0
816BC1B2	0.0	0.0	0.0	816CC1A3	0.0	0.0	0.0
816BC1B3	0.0	0.0	0.0	816CC1A4	0.0	0.0	0.0
816BC1B4	0.0	0.0	0.0	816CC1B1	0.0	0.0	0.0
816BC1C1	0.0	0.0	0.0	816CC1B2	0.0	0.0	0.0
816BC1C2	0.0	0.0	0.0	816CC1B3	0.0	0.0	0.0
816BC1C3	0.0	0.0	0.0	816CC1B4	0.0	0.0	0.0
816BC1C4	0.0	0.0	0.0	816CF1A1	0.0	0.0	0.0
816BC1D1	0.0	0.0	0.0	816CF1A2	0.0	3.1	0.0

Note: Limit of Detection (LD) is 3 dpm for Alpha, 6 dpm for Beta, and 110 dpm for Gamma.

Seneca Army Depot

IDENTIFICATION		DPM		
		Alpha	Beta	Gamma
815AR1		0.8	0.0	0.0
815AR2		0.0	0.0	0.0
815AF1A1		0.0	0.0	0.0
815AF1A2		0.0	0.0	0.0
815AW1A1		0.0	0.0	0.0
815AW1A2		0.0	0.0	0.0
815AW1B2		0.0	3.0	0.0
815AW2A1		0.0	0.0	0.0
815AW2C1		0.0	0.0	0.0
815AW3A1		0.0	0.0	0.0
815AW3A2		0.0	0.0	0.0
815AW3C2		0.0	0.0	0.0
815AW4B1		0.0	0.0	0.0
815AW4A1		0.0	0.0	0.0
815AC1B2		0.0	0.0	0.0
819V13	124241	2.6	5.9	0.0
819V16	124242	0.0	0.0	0.0
819V17	124243	0.0	0.0	0.0
819V20	124244	0.0	0.0	0.0
819V18	124245	0.0	0.0	0.0
819V19	124246	0.0	2.7	0.0
819D7	124249	0.0	0.0	0.0
819D2	124250	2.2	5.3	0.0
819D1	124251	2.9	8.5	0.0

Note: Limit of Detection (LD) is 2 dpm for Alpha, 6 dpm for Beta, and 110 dpm for Gamma.

Seneca Army Depot

[illegible]	[illegible]
815AR1	0.0
815AR2	0.0
815AW1A1	0.0
815AW1A2	0.0
815AW2A1	0.0
815AW1B2	0.0
815AW3A1	0.0
815AW3A2	0.0
815AW2C1	0.0
815AW3C2	0.0
815AW4A1	0.0
815AW4B1	0.0
815AC1B2	0.0
815AF1A1	0.0
815AF1A2	0.0

Note: Limit of Detection (LD) is 17.2 dpm for Tritium Beta.

Seneca Army Depot Activity
Tritium

IDENTIFICATION	DPM/BETA	IDENTIFICATION	DPM/BETA	IDENTIFICATION	DPM/BETA
815HRW1A1	0.0	815HRC1A2	0.0	816BF1A1	0.0
815HRW1A2	0.0	815HRC1A3	0.0	816BF1A2	0.0
815HRW1B1	0.0	815HRC1B1	0.0	816BF1B1	0.0
815HRW1B2	0.0	815HRC1B2	0.0	816BF1B2	0.0
815HRW1B3	0.0	815HRC1B3	0.0	816BC1A1	0.0
815HRW1C1	0.0	815HRC1C1	0.0	816BC1A2	0.0
815HRW1C2	0.0	815HRC1C2	0.0	816BC1A3	0.0
815HRW1C3	0.0	815HRC1C3	0.0	816BC1A4	0.0
815HRW2A1	0.0	815HRC1D1	0.0	816BC1B1	0.0
815HRW2A2	8.8	815HRC1D2	0.0	816BC1B2	0.0
815HRW2A3	0.0	815HRC1D3	10.0	816BC1B3	0.0
815HRW2B1	0.0	815HRC1E1	0.0	816BC1B4	0.0
815HRW2B2	0.0	815HRC1E2	0.0	816BC1C1	12.2
815HRW2B3	0.0	815HRC1E3	0.0	816BC1C2	0.0
815HRW2B4	0.0	815HRR1	54.6	816BC1C3	0.0
815HRW2B5	0.0	815HRR2	44.0	816BC1C4	0.0
815HRW2C1	0.0	815HRR3	4.0E+02	816BC1D1	0.0
815HRW2C2	0.0	815HRR4	66.5	816BC1D2	9.9
815HRW2C3	0.0	815HRR5	138.4	816BC1D3	0.0
815HRW2C4	0.0	815HRR6	10.2	816BC1D4	0.0
815HRW2C5	0.0	815HRR7	67.4	816CW1A1	0.0
815HRW3A1	0.0	815HRR8	54.3	816CW1A2	0.0
815HRW3A2	0.0	815HRR9	29.5	816CW1B1	0.0
815HRW3B1	0.0	815HRR10	33.3	816CW1B2	0.0
815HRW3B2	0.0	815HRR11	11.4	816CW1B3	0.0
815HRW3B3	0.0	816BW1A1	0.0	816CW1B4	0.0
815HRW3C1	0.0	816BW1A2	9.7	816CW2A1	0.0
815HRW3C2	0.0	816BW1B1	0.0	816CW2B1	0.0
815HRW3C3	0.0	816BW1B2	0.0	816CW2B2	0.0
815HRW4A1	0.0	816BW1B3	0.0	816CW3A1	0.0
815HRW4A2	0.0	816BW1B4	0.0	816CW3A2	0.0
815HRW4A3	0.0	816BW2A1	0.0	816CW3B1	0.0
815HRW4B1	0.0	816BW2A2	0.0	816CW3B2	0.0
815HRW4B2	11.3	816BW2B1	0.0	816CW3B3	0.0
815HRW4B3	0.0	816BW2B2	0.0	816CW3B4	0.0
815HRW4B4	0.0	816BW2B3	0.0	816CW4A1	0.0
815HRW4B5	0.0	816BW2B4	0.0	816CW4B1	0.0
815HRW4C1	0.0	816BW3A1	0.0	816CW4B2	0.0
815HRW4C2	0.0	816BW3A2	0.0	816CF1A1	0.0
815HRW4C3	0.0	816BW3B1	0.0	816CF1A2	0.0
815HRW4C4	0.0	816BW3B2	0.0	816CC1A1	0.0
815HRW4C5	0.0	816BW3B3	0.0	816CC1A2	0.0
815HRF1A1	8.6	816BW3B4	0.0	816CC1A3	0.0
815HRF1A2	11.8	816BW4A1	0.0	816CC1A4	0.0
815HRF1B1	28.2	816BW4A2	0.0	816CC1B1	0.0
815HRF1B2	0.0	816BW4B1	0.0	816CC1B2	0.0
815HRF1C1	0.0	816BW4B2	0.0	816CC1B3	0.0
815HRF1C2	0.0	816BW4B3	0.0	816CC1B4	0.0
815HRC1A1	0.0	816BW4B4	0.0	816CR1	10.9
				816CR2	0.0

Note: Limit of Detection (LD) is 17.8 dpm for Tritium Beta. Results exceeding the limit of decision are reported as defined by NCRP 58.

Seneca Army Depot

IDENTIFICATION		DPM			IDENTIFICIATION		DPM		
		Alpha	Beta	Gamma			Alpha	Beta	Gamma
800V1	124201	0.0	0.0	0.0	815V7	124006	0.0	3.5	0.0
800D2	124204	0.0	0.0	0.0	815V8	124007	0.0	0.0	0.0
800D3	124206	0.0	0.0	0.0	815V13	124009	0.0	0.0	0.0
800D1	124207	0.0	0.0	0.0	815V19	124010	0.0	0.0	0.0
802V1	124209	0.0	0.0	0.0	815V10	124011	1.1	0.0	0.0
802D1	124210	0.0	0.0	0.0	815V9	124012	0.0	0.0	0.0
802D2	124211	0.0	0.0	0.0	815V12	124013	4.1	13.5	0.0
802D3	124212	0.0	0.0	0.0	815V21	124014	0.0	0.0	0.0
803V1	124224	1.9	3.5	0.0	817D1	124237	0.0	0.0	0.0
803V2	124225	0.0	0.0	0.0	817D2	124238	0.0	0.0	0.0
803D1	124226	0.0	0.0	0.0	817V1	124239	0.0	0.0	0.0
803D2	124227	0.0	0.0	0.0	819V3	124188	2.6	8.2	0.0
803D3	124228	0.0	0.0	0.0	819V4	124189	3.0	9.5	0.0
803D4	124229	0.0	0.0	0.0	819V5	124190	2.6	7.0	0.0
803D5	124230	0.0	0.0	0.0	819V6	124191	0.0	3.5	0.0
803D6	124231	0.0	0.0	0.0	819V10	124192	2.6	4.5	0.0
803D7	124232	0.0	0.0	0.0	819V9	124193	5.9	13.2	63.9
804DW1	124084	0.0	0.0	0.0	819V8	124194	0.0	7.0	0.0
80RDW2	124085	0.0	0.0	0.0	819V7	124195	2.6	7.0	0.0
804V1	124215	0.0	0.0	0.0	819V11	124196	3.3	4.2	0.0
804V2	124216	0.0	0.0	0.0	819V12A	124197	1.5	0.0	0.0
804V6	124217	0.0	0.0	0.0	819V12B	124198	1.1	0.0	0.0
804V7	124218	0.0	0.0	0.0	819V14	124202	0.0	2.9	0.0
804V8	124219	0.0	0.0	0.0	819V15	124203	0.0	0.0	0.0
804V9	124220	0.0	0.0	0.0	819D8	124199	0.0	4.5	0.0
804V10	124021	0.0	0.0	0.0	819D9	124200	4.8	17.6	0.0
804V11	124022	0.0	0.0	0.0	819D3	124205	0.0	0.0	0.0
804DW1	124023	0.0	0.0	0.0	819V4	124247	4.1	7.3	0.0
804V3	124255	0.0	0.0	0.0	819V2	124248	0.0	0.0	0.0
804V4	124256	1.5	0.0	0.0	819D4	124262	1.5	0.0	0.0
804V5	124257	0.0	0.0	0.0	819D6	124263	1.1	2.9	0.0
804V12	124258	0.0	0.0	0.0	819D5	124264	0.0	0.0	0.0
804V13	124259	0.0	0.0	0.0	823	124086	0.0	0.0	0.0
804V14	124260	0.0	0.0	0.0	828	124080	0.0	3.2	0.0
[illegible]	124261	1.5	2.9	0.0	823	124091	1.1	0.0	0.0
[illegible]	124262	0.0	0.0	0.0	824	124092	0.0	0.0	0.0
813V1B	124233	0.0	0.0	0.0	824	124093	0.0	4.2	0.0
813V1A	124234	0.0	0.0	0.0	825V1	124085	0.0	0.0	0.0
813D2	124235	0.0	0.0	0.0	825V2	124087	0.0	0.0	0.0
813D1	124236	0.0	0.0	0.0	WT-024		0.0	3.2	0.0
814V1A	124213	0.0	0.0	0.0	WT-025		0.0	0.0	0.0
814V1B	124214	0.0	2.9	0.0	WT-026		1.1	0.0	0.0
815V6A	2	1.5	0.0	0.0	WT-027		0.0	2.9	0.0
815V15	10	29.1	13.2	0.0	WT-028		0.0	7.6	0.0
815V18	124001	0.0	0.0	0.0	WT-029		0.0	0.0	0.0
815V20	124002	1.5	0.0	0.0	WT-030		0.0	0.0	0.0
815V14	124003	2.6	5.1	0.0	WT-031		0.0	0.0	0.0
815V5	124004	1.1	4.8	0.0					

Note: Limit of Detection (LD) is 3 dpm for Alpha, 6 dpm for Beta, and 104 dpm for Gamma.

Sample	Depth	units	Apha Probe	Background	units	Percentage Above (+) or below (-) Background	Bicron Fidler
803D1	0	feet	40	48		-16.67%	7347
803D1	0.5	feet					
803D2	0	feet	40	48		-16.67%	4913
803D3	0	feet	40	48		-16.67%	5173
803D3	0.5	feet					
803D4	0	feet	40	48		-16.67%	6662
803D5	0	feet	40	48		-16.67%	6470
803D6	0	feet	60	48		25.00%	6491
803D7	0	feet	50	48		4.17%	6432
803V1	0	feet	40	48		-16.67%	6684
803V1	0.5	feet					
803V1	1	feet					
803V2	0	feet	50	48		4.17%	6942
803V2	0.5	feet					
803V2	1	feet					
803V2	1.5	feet					

Background	units	Percentage Above (+) or below (-) Background	Pipe Probe	Background	units	Percentage Above (+) or below (-) Background
6483	cpm	13.33%	100	160	cpm	-37.50%
			100	160	cpm	-37.50%
6483	cpm	-24.22%	100	160	cpm	-37.50%
6483	cpm	-20.21%	200	160	cpm	25.00%
			100	160	cpm	-37.50%
6483	cpm	2.76%	200	160	cpm	25.00%
6483	cpm	-0.20%	100	160	cpm	-37.50%
6483	cpm	0.12%	200	160	cpm	25.00%
6483	cpm	-0.79%	200	160	cpm	25.00%
6483	cpm	3.10%	200	160	cpm	25.00%
			200	160	cpm	25.00%
			100	160	cpm	-37.50%
6483	cpm	7.08%	100	160	cpm	-37.50%
			200	160	cpm	25.00%
			100	160	cpm	-37.50%
			100	160	cpm	-37.50%

Gross Gamma Radiation as Measured with a Bicron Fidler Na(I) Scintilation Probe

		NAD-27		Gross Gamma		Percent above (+)		
collection date	Site	easting	northing	Radiation	background	or below (-) Background	units	Instrument s/n
9/30/97	SEAD-12	743550.4	1015784	10	9.4	6.38%	kcpm	A945P/A378Q
9/30/97	SEAD-12	743547.4	1015784	10.3	9.4	9.57%	kcpm	A945P/A378Q
9/30/97	SEAD-12	743544.4	1015784	10.2	9.4	8.51%	kcpm	A945P/A378Q
9/30/97	SEAD-12	743541.4	1015783	10	9.4	6.38%	kcpm	A945P/A378Q
9/30/97	SEAD-12	743538.4	1015783	9.5	9.4	1.06%	kcpm	A945P/A378Q
9/30/97	SEAD-12	743535.4	1015783	9.2	9.4	-2.13%	kcpm	A945P/A378Q
9/30/97	SEAD-12	743532.4	1015783	8.8	9.4	-6.38%	kcpm	A945P/A378Q
9/30/97	SEAD-12	743529.4	1015783	9.6	9.4	2.13%	kcpm	A945P/A378Q
9/30/97	SEAD-12	743526.4	1015783	9	9.4	-4.26%	kcpm	A945P/A378Q
9/30/97	SEAD-12	743523.4	1015783	9.7	9.4	3.19%	kcpm	A945P/A378Q
9/30/97	SEAD-12	743520.4	1015783	9.1	9.4	-3.19%	kcpm	A945P/A378Q
9/30/97	SEAD-12	743517.4	1015782	10	9.4	6.38%	kcpm	A945P/A378Q
9/30/97	SEAD-12	743514.4	1015782	10.2	9.4	8.51%	kcpm	A945P/A378Q
9/30/97	SEAD-12	743511.5	1015782	9.1	9.4	-3.19%	kcpm	A945P/A378Q
9/30/97	SEAD-12	743508.5	1015782	9.8	9.4	4.26%	kcpm	A945P/A378Q
9/30/97	SEAD-12	743505.5	1015782	10	9.4	6.38%	kcpm	A945P/A378Q
9/30/97	SEAD-12	743502.5	1015782	9.2	9.4	-2.13%	kcpm	A945P/A378Q
9/30/97	SEAD-12	743499.5	1015782	8.8	9.4	-6.38%	kcpm	A945P/A378Q
9/30/97	SEAD-12	743496.5	1015781	9.6	9.4	2.13%	kcpm	A945P/A378Q
9/30/97	SEAD-12	743550.3	1015787	11.5	9.4	22.34%	kcpm	A945P/A378Q
9/30/97	SEAD-12	743547.3	1015787	10.8	9.4	14.89%	kcpm	A945P/A378Q
9/30/97	SEAD-12	743544.3	1015787	10.2	9.4	8.51%	kcpm	A945P/A378Q
9/30/97	SEAD-12	743541.3	1015786	10.7	9.4	13.83%	kcpm	A945P/A378Q
9/30/97	SEAD-12	743538.3	1015786	11.1	9.4	18.09%	kcpm	A945P/A378Q
9/30/97	SEAD-12	743535.3	1015786	10.6	9.4	12.77%	kcpm	A945P/A378Q
9/30/97	SEAD-12	743532.3	1015786	10.2	9.4	8.51%	kcpm	A945P/A378Q
9/30/97	SEAD-12	743529.3	1015786	11	9.4	17.02%	kcpm	A945P/A378Q
9/30/97	SEAD-12	743526.3	1015786	10.8	9.4	14.89%	kcpm	A945P/A378Q
9/30/97	SEAD-12	743523.3	1015786	10.2	9.4	8.51%	kcpm	A945P/A378Q
9/30/97	SEAD-12	743520.3	1015785	10.7	9.4	13.83%	kcpm	A945P/A378Q
9/30/97	SEAD-12	743517.3	1015785	10.9	9.4	15.96%	kcpm	A945P/A378Q
9/30/97	SEAD-12	743514.3	1015785	10.4	9.4	10.64%	kcpm	A945P/A378Q
9/30/97	SEAD-12	743511.3	1015785	10.7	9.4	13.83%	kcpm	A945P/A378Q
9/30/97	SEAD-12	743508.3	1015785	10	9.4	6.38%	kcpm	A945P/A378Q
9/30/97	SEAD-12	743505.4	1015785	9.7	9.4	3.19%	kcpm	A945P/A378Q
9/30/97	SEAD-12	743502.4	1015785	9.9	9.4	5.32%	kcpm	A945P/A378Q
9/30/97	SEAD-12	743499.4	1015785	9.4	9.4	0.00%	kcpm	A945P/A378Q
9/30/97	SEAD-12	743496.4	1015784	9.5	9.4	1.06%	kcpm	A945P/A378Q

Gross Gamma Radiation as Measured with a Bicron Fidler Na(I) Scintilation Probe

		NAD-27		Gross Gamma		Percent above (+)		
collection date	Site	easting	northing	Radiation	background	or below (-) Background	units	Instrument s/n
9/30/97	SEAD-12	743550.2	1015790	11.4	9.4	21.28%	kcpm	A945P/A378Q
9/30/97	SEAD-12	743547.2	1015790	11.1	9.4	18.09%	kcpm	A945P/A378Q
9/30/97	SEAD-12	743544.2	1015790	10.7	9.4	13.83%	kcpm	A945P/A378Q
9/30/97	SEAD-12	743541.2	1015789	11	9.4	17.02%	kcpm	A945P/A378Q
9/30/97	SEAD-12	743538.2	1015789	10.6	9.4	12.77%	kcpm	A945P/A378Q
9/30/97	SEAD-12	743535.2	1015789	11.1	9.4	18.09%	kcpm	A945P/A378Q
9/30/97	SEAD-12	743532.2	1015789	10.9	9.4	15.96%	kcpm	A945P/A378Q
9/30/97	SEAD-12	743529.2	1015789	10.2	9.4	8.51%	kcpm	A945P/A378Q
9/30/97	SEAD-12	743526.2	1015789	10.8	9.4	14.89%	kcpm	A945P/A378Q
9/30/97	SEAD-12	743523.2	1015789	9.9	9.4	5.32%	kcpm	A945P/A378Q
9/30/97	SEAD-12	743520.2	1015788	9.2	9.4	-2.13%	kcpm	A945P/A378Q
9/30/97	SEAD-12	743517.2	1015788	9.5	9.4	1.06%	kcpm	A945P/A378Q
9/30/97	SEAD-12	743514.2	1015788	9.4	9.4	0.00%	kcpm	A945P/A378Q
9/30/97	SEAD-12	743511.2	1015788	10	9.4	6.38%	kcpm	A945P/A378Q
9/30/97	SEAD-12	743508.2	1015788	8.8	9.4	-6.38%	kcpm	A945P/A378Q
9/30/97	SEAD-12	743505.2	1015788	9.6	9.4	2.13%	kcpm	A945P/A378Q
9/30/97	SEAD-12	743502.2	1015788	9.2	9.4	-2.13%	kcpm	A945P/A378Q
9/30/97	SEAD-12	743499.3	1015788	9.7	9.4	3.19%	kcpm	A945P/A378Q
9/30/97	SEAD-12	743496.3	1015787	9	9.4	-4.26%	kcpm	A945P/A378Q
9/30/97	SEAD-12	743550.1	1015793	10.9	9.4	15.96%	kcpm	A945P/A378Q
9/30/97	SEAD-12	743547.1	1015793	11.2	9.4	19.15%	kcpm	A945P/A378Q
9/30/97	SEAD-12	743544.1	1015793	11.5	9.4	22.34%	kcpm	A945P/A378Q
9/30/97	SEAD-12	743541.1	1015792	10.8	9.4	14.89%	kcpm	A945P/A378Q
9/30/97	SEAD-12	743538.1	1015792	9.9	9.4	5.32%	kcpm	A945P/A378Q
9/30/97	SEAD-12	743535.1	1015792	9.8	9.4	4.26%	kcpm	A945P/A378Q
9/30/97	SEAD-12	743532.1	1015792	10.2	9.4	8.51%	kcpm	A945P/A378Q
9/30/97	SEAD-12	743529.1	1015792	9.6	9.4	2.13%	kcpm	A945P/A378Q
9/30/97	SEAD-12	743526.1	1015792	9.2	9.4	-2.13%	kcpm	A945P/A378Q
9/30/97	SEAD-12	743523.1	1015792	8.8	9.4	-6.38%	kcpm	A945P/A378Q
9/30/97	SEAD-12	743520.1	1015791	9.5	9.4	1.06%	kcpm	A945P/A378Q
9/30/97	SEAD-12	743517.1	1015791	9.1	9.4	-3.19%	kcpm	A945P/A378Q
9/30/97	SEAD-12	743514.1	1015791	8.9	9.4	-5.32%	kcpm	A945P/A378Q
9/30/97	SEAD-12	743511.1	1015791	9.3	9.4	-1.06%	kcpm	A945P/A378Q
9/30/97	SEAD-12	743508.1	1015791	9.6	9.4	2.13%	kcpm	A945P/A378Q
9/30/97	SEAD-12	743505.1	1015791	9	9.4	-4.26%	kcpm	A945P/A378Q
9/30/97	SEAD-12	743502.1	1015791	8.9	9.4	-5.32%	kcpm	A945P/A378Q
9/30/97	SEAD-12	743499.1	1015791	9.4	9.4	0.00%	kcpm	A945P/A378Q
9/30/97	SEAD-12	743496.1	1015790	9.2	9.4	-2.13%	kcpm	A945P/A378Q

Gross Gamma Radiation as Measured with a Bicron Fidler Na(I) Scintilation Probe

		NAD-27		Gross Gamma		Percent above (+)		
collection date	Site	easting	northing	Radiation	background	or below (-) Background	units	Instrument s/n
9/29/97	SEAD-12	743496.8	1015773	7.6	9.1	-16.48%	kcpm	A945P/A378Q
9/29/97	SEAD-12	743499.8	1015774	8.5	9.1	-6.59%	kcpm	A945P/A378Q
9/29/97	SEAD-12	743502.8	1015774	8.2	9.1	-9.89%	kcpm	A945P/A378Q
9/29/97	SEAD-12	743505.8	1015774	7.8	9.1	-14.29%	kcpm	A945P/A378Q
9/29/97	SEAD-12	743508.8	1015774	8.2	9.1	-9.89%	kcpm	A945P/A378Q
9/29/97	SEAD-12	743511.8	1015774	7.6	9.1	-16.48%	kcpm	A945P/A378Q
9/29/97	SEAD-12	743514.8	1015774	7.8	9.1	-14.29%	kcpm	A945P/A378Q
9/29/97	SEAD-12	743517.8	1015774	7	9.1	-23.08%	kcpm	A945P/A378Q
9/29/97	SEAD-12	743520.8	1015775	8.1	9.1	-10.99%	kcpm	A945P/A378Q
9/29/97	SEAD-12	743523.8	1015775	8.2	9.1	-9.89%	kcpm	A945P/A378Q
9/29/97	SEAD-12	743526.8	1015775	7.5	9.1	-17.58%	kcpm	A945P/A378Q
9/29/97	SEAD-12	743529.8	1015775	9.1	9.1	0.00%	kcpm	A945P/A378Q
9/29/97	SEAD-12	743532.8	1015775	8.6	9.1	-5.49%	kcpm	A945P/A378Q
9/29/97	SEAD-12	743535.8	1015775	7.8	9.1	-14.29%	kcpm	A945P/A378Q
9/29/97	SEAD-12	743538.8	1015775	9	9.1	-1.10%	kcpm	A945P/A378Q
9/29/97	SEAD-12	743541.8	1015775	8.5	9.1	-6.59%	kcpm	A945P/A378Q
9/29/97	SEAD-12	743544.8	1015776	9.1	9.1	0.00%	kcpm	A945P/A378Q
9/29/97	SEAD-12	743547.8	1015776	8.8	9.1	-3.30%	kcpm	A945P/A378Q
9/29/97	SEAD-12	743550.8	1015776	7.8	9.1	-14.29%	kcpm	A945P/A378Q
9/29/97	SEAD-12	743553.8	1015776	9.5	9.1	4.40%	kcpm	A945P/A378Q
9/29/97	SEAD-12	743556.8	1015776	8.8	9.1	-3.30%	kcpm	A945P/A378Q
9/29/97	SEAD-12	743559.8	1015776	10	9.1	9.89%	kcpm	A945P/A378Q
9/29/97	SEAD-12	743562.8	1015776	9.9	9.1	8.79%	kcpm	A945P/A378Q
9/29/97	SEAD-12	743565.8	1015776	10.1	9.1	10.99%	kcpm	A945P/A378Q
9/29/97	SEAD-12	743568.8	1015777	10.7	9.1	17.58%	kcpm	A945P/A378Q
9/29/97	SEAD-12	743496.9	1015770	7.7	9.1	-15.38%	kcpm	A945P/A378Q
9/29/97	SEAD-12	743499.9	1015771	8	9.1	-12.09%	kcpm	A945P/A378Q
9/29/97	SEAD-12	743502.9	1015771	9	9.1	-1.10%	kcpm	A945P/A378Q
9/29/97	SEAD-12	743505.9	1015771	8.4	9.1	-7.69%	kcpm	A945P/A378Q
9/29/97	SEAD-12	743508.9	1015771	8.5	9.1	-6.59%	kcpm	A945P/A378Q
9/29/97	SEAD-12	743511.9	1015771	8.1	9.1	-10.99%	kcpm	A945P/A378Q
9/29/97	SEAD-12	743514.9	1015771	9	9.1	-1.10%	kcpm	A945P/A378Q
9/29/97	SEAD-12	743517.9	1015771	8.8	9.1	-3.30%	kcpm	A945P/A378Q
9/29/97	SEAD-12	743520.9	1015772	9	9.1	-1.10%	kcpm	A945P/A378Q
9/29/97	SEAD-12	743523.9	1015772	9.5	9.1	4.40%	kcpm	A945P/A378Q
9/29/97	SEAD-12	743526.9	1015772	9	9.1	-1.10%	kcpm	A945P/A378Q
9/29/97	SEAD-12	743529.9	1015772	8.9	9.1	-2.20%	kcpm	A945P/A378Q
9/29/97	SEAD-12	743532.9	1015772	9.4	9.1	3.30%	kcpm	A945P/A378Q

Gross Gamma Radiation as Measured with a Bicron Fidler Na(I) Scintilation Probe

collection date	Site	NAD-27 easting	NAD-27 northing	Gross Gamma Radiation	background	Percent above (+) or below (-) Background	units	Instrument s/n
9/29/97	SEAD-12	743535.9	1015772	9.1	9.1	0.00%	kcpm	A945P/A378Q
9/29/97	SEAD-12	743538.9	1015772	9.3	9.1	2.20%	kcpm	A945P/A378Q
9/29/97	SEAD-12	743541.9	1015772	9.4	9.1	3.30%	kcpm	A945P/A378Q
9/29/97	SEAD-12	743544.9	1015773	9.2	9.1	1.10%	kcpm	A945P/A378Q
9/29/97	SEAD-12	743547.9	1015773	9	9.1	-1.10%	kcpm	A945P/A378Q
9/29/97	SEAD-12	743550.9	1015773	9.1	9.1	0.00%	kcpm	A945P/A378Q
9/29/97	SEAD-12	743553.9	1015773	9.6	9.1	5.49%	kcpm	A945P/A378Q
9/29/97	SEAD-12	743556.9	1015773	9.5	9.1	4.40%	kcpm	A945P/A378Q
9/29/97	SEAD-12	743559.9	1015773	10.8	9.1	18.68%	kcpm	A945P/A378Q
9/29/97	SEAD-12	743562.9	1015773	11.8	9.1	29.67%	kcpm	A945P/A378Q
9/29/97	SEAD-12	743565.9	1015773	11.5	9.1	26.37%	kcpm	A945P/A378Q
9/29/97	SEAD-12	743568.9	1015774	11.9	9.1	30.77%	kcpm	A945P/A378Q
9/29/97	SEAD-12	743497.1	1015767	7.4	9.1	-18.68%	kcpm	A945P/A378Q
9/29/97	SEAD-12	743500.1	1015768	8.8	9.1	-3.30%	kcpm	A945P/A378Q
9/29/97	SEAD-12	743503.1	1015768	7.6	9.1	-16.48%	kcpm	A945P/A378Q
9/29/97	SEAD-12	743506.1	1015768	8	9.1	-12.09%	kcpm	A945P/A378Q
9/29/97	SEAD-12	743509.1	1015768	8.5	9.1	-6.59%	kcpm	A945P/A378Q
9/29/97	SEAD-12	743512.1	1015768	8.4	9.1	-7.69%	kcpm	A945P/A378Q
9/29/97	SEAD-12	743515.1	1015768	8.4	9.1	-7.69%	kcpm	A945P/A378Q
9/29/97	SEAD-12	743518.1	1015768	8.5	9.1	-6.59%	kcpm	A945P/A378Q
9/29/97	SEAD-12	743521.1	1015769	8.2	9.1	-9.89%	kcpm	A945P/A378Q
9/29/97	SEAD-12	743524.1	1015769	8.8	9.1	-3.30%	kcpm	A945P/A378Q
9/29/97	SEAD-12	743527.1	1015769	9.2	9.1	1.10%	kcpm	A945P/A378Q
9/29/97	SEAD-12	743530.1	1015769	9	9.1	-1.10%	kcpm	A945P/A378Q
9/29/97	SEAD-12	743533.1	1015769	9.5	9.1	4.40%	kcpm	A945P/A378Q
9/29/97	SEAD-12	743536.1	1015769	9.7	9.1	6.59%	kcpm	A945P/A378Q
9/29/97	SEAD-12	743539.1	1015769	10.1	9.1	10.99%	kcpm	A945P/A378Q
9/29/97	SEAD-12	743542.1	1015769	9.8	9.1	7.69%	kcpm	A945P/A378Q
9/29/97	SEAD-12	743545.1	1015770	9.8	9.1	7.69%	kcpm	A945P/A378Q
9/29/97	SEAD-12	743548.1	1015770	10.1	9.1	10.99%	kcpm	A945P/A378Q
9/29/97	SEAD-12	743551.1	1015770	9.5	9.1	4.40%	kcpm	A945P/A378Q
9/29/97	SEAD-12	743554.1	1015770	9.1	9.1	0.00%	kcpm	A945P/A378Q
10/13/97	SEAD-12	743475.4	1015781	9.5	9.7	-2.06%	kcpm	A984P/A398Q

APPENDIX C

RINSATE SAMPLE COLLECTION PROTOCOL

This procedure is to be used to obtain representative samples for analysis from concrete floors, secondary containment areas and sumps, including surfaces that have been coated, to establish whether or not there is any contamination on the concrete surfaces. This procedure is to be performed after the surfaces have been cleaned and decontaminated, usually pursuant to the approved Closure Plan[1]. This procedure may also be suitable for use on other surfaces on a case-by-case basis.

1. Create an exclusion zone with colored (e.g., yellow) ribbon to keep extraneous personnel from entering area.

2. Sketch the area to be sampled. Sketches should include locations of building columns, walls, fixed equipment, and the proposed rinsate sampling locations themselves (to accurately locate the rinsate sampling points within the buildings) for Department concurrence. The sample locations must be chosen to include any areas of staining, discoloration or other evidence of spills. The sample locations will be approved by a NYSDEC staff person usually onsite on the day of sampling (unless NYSDEC chooses not to be present or states that such approval is not needed). Each sample location should be approximately $2500cm^2$ (say 50cm by 50cm) or $400in^2$ (say 20in by 20 in), but size may be adjusted to the extent necessary to accommodate field conditions with NYSDEC approval.

3. Assemble and clean all equipment necessary for sample collection. Equipment needs to be cleaned, if not already pre-cleaned by the laboratory.

4. Create a temporary containment area on the storage zone floor using an inert, clean or cleaned, flexible boom (e.g., water filled polyethylene tube, nonabsorbent spill containment berm), if necessary. If the floor is relatively level and water will puddle without flowing out of the sample location, a boom may not be not necessary.

5. Label the sample containers with a unique sample code, information on the site, sample locations and the date and time samples were collected. Affix appropriate labels for test parameters on the sample containers. Put on a new pair of disposable nitrile gloves.

6. De-ionized water is to be used for this protocol. The de-ionized water may be provided by the

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[1] **A detailed washing and rinsing (i.e., decontamination) procedure, as appoved by the Department, will be followed based upon the selected technology. EPA Guidance document, Guide for Decontaminating Buildings, Structures, and Equipment at Superfund Sites, EPA/600/2-85/028, or its most recent update can be used to develop such technology.**

laboratory. For each sampling location, start with two liters or 2 quarts of de-ionized water to allow for the collection of a sufficient sample size for all of parameters to be tested for, as specified by the laboratory, including QC samples. If necessary, additional de-ionized water may be used, but no more than the minimum amount needed to provide a sufficient sample size. Record the temperature of the room and of the de-ionized water. At each sampling location, slowly pour the de-ionized water onto the surface to be sampled. A clean/cleaned wash bottle may be utilized to cover the area uniformly with the de-ionized water. If the individual area is sloped, start pouring at the highest elevation. Record the volume of de-ionized water used for each sample location.

7. Allow de-ionized water to collect and remain in the sample location for 10 minutes.

8. For each sampling location, collect the number and type of samples as specified in the closure plan along with appropriate QA/QC samples. Samples shall be collected using dedicated, sterile glass pipettes provided by the laboratory. The pipettes will be used to transfer the sample fluids into the appropriate bottles provided by the laboratory. Volatile sample bottles shall be filled first to minimize loss of volatiles. Record the volume of water collected for each sample for each sample location.

9. Samples must not be composited.

10. Cap the sample containers and place them in a laboratory cooler with ice to maintain a temperature of 4 °C.

11. Measure the exact wetted area for each sampling location sampled using a tape measure or other suitable device. Place all measurements and the sketch of the area in the site field book. Measurements should include all appropriate or unusual conditions observed while collecting each sample (i.e., drainage patterns followed, stained areas present, condition of storage zone floor, etc.).

12. Remove and discard the gloves. Place all disposable gloves into a plastic bag designated for proper disposal.

13. Enter information on procedures followed including details of samples and sampling in the field book. Photographs of the sample locations, wetted areas, equipment, and actual sampling events may be taken by the facility or Department staff and a list of the photographs shall be recorded in the field book.

14. Fill out chain-of-custody forms. Prepare the samples for storage and shipping in laboratory cooler with sufficient ice to maintain a temperature of 4 °C. Ship overnight to the laboratory for analysis.

15. Follow chain-of custody procedures as detailed in the Quality Assurance Program Plan.

16. Analytical Methods

All of the samples need to be analyzed by a laboratory certified by NYS DOH ELAP for the parameters of interest. The following preparation and analytical methods may be used.

PARAMETER	PREPARATION*	ANALYSIS
TCL Volatiles	Method 5030	Method 8260
TCL Semi-Volatiles	Method 3640	Method 8270
Pesticides	Method 3620	Method 8081
TAL Metals	Method 3010/3015/3020 as appropriate	Method 6010 and 7000 series as appropriate

* Preparation Methods should be used where appropriate, prior to analysis

17. Target Detection Limits and QA/QC

The target detection limits for TCL volatiles and TCL semi-volatiles is 5ug/L. The target detection limits for the metals is as per the table from the NYSDEC ASP.

The quality control results shall be submitted along with the sample results. This QC data shall include surrogate recoveries, MS/MSD percent recoveries, internal standard area counts and retention times (as applicable), and blank results for the organics. For the metals, submit CRDL standard for AA and ICP, spike sample recovery, duplicates, blanks, ICP interference check sample, post digestion spike sample recoveries (if applicable), laboratory control sample results, and ICP serial dilution results. The QC analysis should be performed on site specific samples. The QA/QC requirements of SW-846 shall be met.

18. Clean closure criteria

The sample results for the rinsate samples shall be compared to the New York State Water Quality Standards for Class GA groundwater, 6NYCRR Part 703.5 which are available at www.dec.state.ny.us/website/regs/703.htm.

APPENDIX D

Estimate Closure Cost
Remove, Dispose all Hazardous
Waste; Decon with Soap, Water,
Rinse 3x, Sample Water, Sample
Soil

Designed By: Parsons
Estimated By: Parsons

Prepared By: Parsons

Preparation Date: 08/17/00
Effective Date of Pricing: 10/03/96
Est Construction Time: 90 Days

Sales Tax: 7.0%

PROJECT BREAKDOWN:

The estimate is structured as follows and uses a 2 digit number at each level. The 2 digit numbers for the first 3 title levels are taken from the HTRW Remedial Action Work Breakdown Structure. The 2 digit numbers for the remaining title levels are user defined. The detail items are at LEVEL 6.

LEVEL 1 - WBS Level 1 (Account)
LEVEL 2 - WBS Level 2 (System)
LEVEL 3 - WBS Level 3 (Subsystem)
LEVEL 4 - User Defined (Assembly Category or Other)
LEVEL 5 - User Defined (Assembly or Other)

PROJECT DESCRIPTION:

Estimated Closure Costs for Building 803, the Mixed Waste Storage Facility. Inventory Depot for residual Hazardous Waste. Move all found Hazardous waste to Buidling 803. Coordinate hazardous radiological waste removal with licensed hauler and TSDF.

Manually sweep/brush all floors and walls to remove flaking paint and loose debris. Collect residues. Wash with High pressure Soap and Water, Rinse three times with water. Collect all liquids and dispose of offsite as hazardous waste. Total of 9 drums, 2 from each wash and rinse cycle plus one for dust and Tyvek.

Collect 4 waste water samples. Collect 7 rinsate samples plus QA/QC, 1 after each rinse volume and document that water is clean. 10 samples total.

All samples analyzed for IPA and freon.

Validate Data and Prepare Closure Certificate.

Procure Vendor Services.

PRODUCTIVITY:

Productivity, as a baseline and as taken from the Unit Price Book (UPB) Database, assumes a non-contaminated working environment with no level of protection productivity reduction factors. When required, productivity for appropriate activities will be adjusted for this project as follows:

1. Level of Protection A - Productivity ___%
2. Level of Protection B - Productivity ___%
3. Level of Protection C - Productivity ___%
4. Level of Protection D - Productivity 85%.

All activities are conducted in Level of Protection D.

The following daily time breakdown was assumed.

	Level A	Level B	Level C	Level D
Availiable Time (minutes)	480	480	480	480
Non-Productive Time (minutes):				
Safety meetings	20	20	10	10
Suit-up/off	60	60	40	10
Air tank change	160	20	0	0
*Breaks	60	60	40	30
Cleanup/decontamination	20	20	20	20
Productive Time (minutes)	160	300	370	410
Productivity:	160/480 X100%	300/480 X100%	370/480 X100%	410/480 X100%
	33%	63%	77%	85%
Example:				
Normal Production Rate (CY/HR)	250	250	250	250
X Productivity	.33	.63	.77	.85
=Reduced Production Rate(CY/HR)	83	158	193	213
* Break time ranges (minutes)	60-140	60-140	40-140	30-70

Contractor costs are calculated as a percentage of running total as
5 % for field office support
15 % for home office support
10 % for profit
4 % for bond

OTHER GOVERNMENT COSTS:

Other Government Costs consist of:

*Engineering and Design During Construction (EDC)	1.5%
As-Builts	0.5%
Operation and Maintenance (O&M) Manuals	0.5%
Laboratory Quality Assurance	1.0%
Total, use	3.5%

33.15. Decontamination				QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
33. Building 803, Mixed Waste Storag												
33.15. Decontamination												
	USR	<02084 2114 >	Decontamination, manual washing, powder, 50# carton	1.00	EA	0	0	0	155	0	155	155.45
	USR	<02083 5214 >	HW packaging, DOT steel drums, 55gal, 17H, closed only	9.00	EA	0	0	0	496	0	496	55.16
	USR	<DRILL 03 >	Decon equipment including cost ofrenting decon equipment	40.00	HR	0	0	0	0	6,000	6,000	150.00
	USR	<DRILL 02 >	Construct temporary decon pad	1.00	EA	0	0	0	0	150	150	150.00
	USR	<DRILL 03 >	Provide empty drums	9.00	EA	0	0	0	0	450	450	50.00
	AFH	<01957 3114 >	Temp constr facil,decontn,spray wash,tank, steam clean - triple rinse floors, walls, ceiling	18000	SF	720	19,652	0	0	0	19,652	1.09
	USR	<02084 2142 >	Decontamination, manual washing, spot washing, large crew	500.00	SF	15	280	0	0	0	280	0.56
	RSM	<02092 5000 >	Decontn contain area dml, HEPA vacuum - floors and walls	5000.00	SF	67	2,739	52	268	0	3,058	0.61
33.17. Decontamination Waste Disposal												
	USR	<DRILL 05 >	Move drums when full, 100 ft to central storage locaiton	9.00	EA	0	0	0	0	225	225	25.00
	USR	<13278 5103 >	HTRW, dispose haz waste, drums, disposal taxes & fees, state	9.00	EA	0	0	0	0	231	231	25.70
	USR	<13277 2623 >	HTRW, incin, coml, clean water, non-PCB, 55gal drum	8.00	EA	0	0	0	0	4,000	4,000	500.00
	USR	<13278 8311 >	HTRW, dispose haz waste, min charge, mileage charge, van trai	1.00	EA	0	0	0	0	683	683	683.33
	USR	<02083 7301 >	Shipping HW, subcontracted transport 80 55gal drums of soil	400.00	MI	0	0	0	0	600	600	1.50
	USR	<13277 2633 >	HTRW, incin, coml, initial stream evaluation	1.00	MI	0	0	0	0	1,500	1,500	1500.00
33.18. Samp Coll. & Anal - Waste Water												
	USR	<01954 6112 >	Testing, misc sample collection (shallow), daily rate,subcontra	1.00	EA	0	0	0	0	633	633	633.00
	USR	<01954 6121 >	Testing, misc sample collection (shallow), van or pickup rental	1.00	DAY	0	0	0	32	0	32	32.09
	USR	<01954 6132 >	Testing, misc sample collection (shallow), pickup mileage charge	100.00	MI	0	0	0	86	0	86	0.86
	USR	<01954 6144 >	Field samples, sample collection, pumpable liquids	4.00	EA	2	63	0	0	0	63	15.75
	AFH	<01954 7285 >	Testing, LAS, non-halogenated vol org (SW5030/8015), sp org	4.00	EA	0	0	0	0	440	440	110.00
	USR	<01954 7215 >	Testing, LAS, sp org contam, freon (624, 8260)	4.00	EA	0	0	0	0	550	550	137.50

33.19. Samp Collection & Anal - Rinsate				QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
33.19. Samp Collection & Anal - Rinsate												
	USR	<01954 6112 >	Testing, misc sample collection (shallow), daily rate,subcontra	1.00	EA	0	0	0	0	633	633	633.00
	USR	<01954 6121 >	Testing, misc sample collection (shallow), van or pickup rental	1.00	DAY	0	0	0	32	0	32	32.09
	USR	<01954 6132 >	Testing, misc sample collection (shallow), pickup mileage charge	100.00	MI	0	0	0	86	0	86	0.86
	USR	<01954 6144 >	Field samples, sample collection, pumpable liquids	10.00	EA	5	158	0	0	0	158	15.75
	AFH	<01954 7285 >	Testing, LAS, non-halogenated vol org (SW5030/8015), sp org	10.00	EA	0	0	0	0	1,100	1,100	110.00
	USR	<01954 7215 >	Testing, LAS, sp org contam, freon (624, 8260)	10.00	EA	0	0	0	0	1,375	1,375	137.50
33.22. Closure Certification												
	USR	<01956 1111 >	Reporting	72.00	HR	0	0	0	0	5,400	5,400	75.00
	USR	<01956 1113 >	Submittals,tech plans-defines where samps taken, soil sampling	24.00	HR	0	0	0	0	1,800	1,800	75.00
	USR	<01956 1114 >	Submittals,tech plans-defines quality	24.00	HR	0	0	0	0	2,040	2,040	85.00
33.36. Project management / Procurement												
	USR	<01956 1115 >	Submittals, tech plans,reqruires indl hygenist,site safety&healt	2.00	HR	0	0	0	0	200	200	100.00
	USR	<01956 1112 >	Submittals, tech rep, Sampling Plan	16.00	HR	0	0	0	0	1,200	1,200	75.00
	USR	<01956 1115 >	Project Management / Procure health	40.00	HR	0	0	0	0	4,000	4,000	100.00
	USR	<01956 1115 >	Site Health & Saftey Plan health	8.00	HR	0	0	0	0	800	800	100.00
		TOTAL	Estimate Closure Cost			809	22,891	52	1,155	34,011	58,109	

		QUANTY	UOM	CONTRACT	DES CONT	ESCALATN	CON CONT	OTHER	CON MGMT	TOTAL COST	UNIT COST
33	Building 803, Mixed Waste Storag	1.00	EA	58,110	0	0	0	0	0	58,110	58108.78

		QUANTY	UOM	CONTRACT	DES CONT	ESCALATN	CON CONT	OTHER	CON MGMT	TOTAL COST	UNIT COST
33	Building 803, Mixed Waste Storag										
33.15	Decontamination	1.00	EA	30,240	0	0	0	0	0	30,240	30242.28
33.17	Decontamination Waste Disposal	1.00	EA	7,240	0	0	0	0	0	7,240	7239.63
33.18	Samp Coll. & Anal - Waste Water	1.00	EA	1,800	0	0	0	0	0	1,800	1803.69
33.19	Samp Collection & Anal - Rinsate	1.00	EA	3,380	0	0	0	0	0	3,380	3383.19
33.22	Closure Certification	1.00	EA	9,240	0	0	0	0	0	9,240	9240.00
33.36	Project management / Procurement	1.00	EA	6,200	0	0	0	0	0	6,200	6200.00
TOTAL	Building 803, Mixed Waste Storag	1.00	EA	58,110	0	0	0	0	0	58,110	58108.78

		QUANTY	UOM	DIRECT	FIELD OH	HOME OFC	PROFIT	BOND	TOTAL COST	UNIT COST
33	Building 803, Mixed Waste Storag	1.00	EA	58,110	0	0	0	0	58,110	58108.78

		QUANTY	UOM	DIRECT	FIELD OH	HOME OFC	PROFIT	BOND	TOTAL COST	UNIT COST
33	Building 803, Mixed Waste Storag									
33.15	Decontamination	1.00	EA	30,240	0	0	0	0	30,240	30242.28
33.17	Decontamination Waste Disposal	1.00	EA	7,240	0	0	0	0	7,240	7239.63
33.18	Samp Coll. & Anal - Waste Water	1.00	EA	1,800	0	0	0	0	1,800	1803.69
33.19	Samp Collection & Anal - Rinsate	1.00	EA	3,380	0	0	0	0	3,380	3383.19
33.22	Closure Certification	1.00	EA	9,240	0	0	0	0	9,240	9240.00
33.36	Project management / Procurement	1.00	EA	6,200	0	0	0	0	6,200	6200.00
TOTAL	Building 803, Mixed Waste Storag	1.00	EA	58,110	0	0	0	0	58,110	58108.78

No errors detected...

* * * END OF ERROR REPORT * * *

No Backup Reports...

* * * END TABLE OF CONTENTS * * *

APPENDIX E

Response to Comments from the New York State Department of Environmental Conservation

Subject: RCRA Closure Plan
Building 803 – Mixed Wasted Storage Facility
SWMU – SEAD-72
Seneca Army Depot
Romulus, New York

Comments Dated: May 27, 2005

Date of Comment Response: October 24, 2005

Army's Response to Comments

The New York State Department of Environmental Conservation has reviewed the RCRA Closure Plan for the Closure of Building 803. Based upon this review, for the most part, we have the following comments to provide on the above referenced Plan:

Comment 1: Page 2-2, section 2nd Paragraph of the document refers to Figure 2-1. It should be changed to Figure 2-4.

Response 1:

Partially Agree. **Figure 2-2** should have been referenced instead of **Figure 2-1**. The discussion presented in the paragraph relates to where radiological samples were collected in 1999; not where future rinsate samples will be collected.

Comment 2: Page 2-4, section 2.3.3, 2nd Paragraph listed NYSDEC TAGM for radiation. It should be NYSDEC RAD-93-10 TAGM.

Response 2:

Partially Agree. Information provided by the NYSDEC reviewer was checked on NYSDEC's website (www.dec.state.ny.us/website/dshm/regs/tagmindex.html) and the document referenced there (i.e., RAD-93-01, not RAD-93-10) was added to the sentence as clarification.

Comment 3: Table 2-4 and Appendix C listed methods to be used for Preparation & Analysis. It should be Method 5030B instead of Method 5030; Method 8015B instead of Method 8015; Method 8260B instead of Method 8260; Method 3640A instead of Method 3640; Method 8270C instead of Method 8270; Method 3620B instead of Method 3620; Method 8081A instead of Method 8081; Method 3010A/3015/3020A instead of Method 3010/3015/3020; Method 6010B instead of Method 6010 and Method 7000A instead of Method 7000. Please revise the document to include these more recent methods.

Response 3:

Partially Agree. The method references identified by NYSDEC have been updated and added to **Table 2-4**.

Method references presented in Appendix C have not been adjusted as requested by the NYSDEC reviewer. This appendix is introduced in the text of the work plan as "A copy of NYSDEC's Rinsate Sample Collection Protocol is attached to this work plan as Appendix C." The presented material is the exact copy of the protocol provided to us by the NYSDEC, Bureau of Hazardous Waste Regulations.

Comment 4: Table 2-4 of the RCRA Closure Plan for SEAD-72 refers to "Freon" as a parameter for measurement by "Directed List Method 8260B". The list of specific analytes to be included for analysis by this method should be provided and the referenced Freon or Freons should be further identified by chemical name or names.

Response 4:

Agreed. The Army and Parsons are only proposing to perform analyses for solvents used in Building 803 including isopropanol, Freon® 11 (Trichlorofluoromethane, CAS No. 75-69-4) acetone, trichloroethylene, and toluene so all methods beyond SW-846 Method 8015B and SW-846 Method 8260B are incidental to the discussion.

The specific Freon® that will be quantified using SW-846 Method 8260B will be Freon® 11 (Trichlorofluoromethane, CAS No. 75-69-4).

Comment 5: The RCRA Closure Plan for SEAD-72 should include a discussion of the data deliverable. A NYSDEC Analytical Services Protocol Category B data deliverable can only be provided by a laboratory that is ELAP CLP Tier certified in the appropriate categories.

Response 5:

The laboratory deliverables will be consistent with the NYSDEC ASP requirements, presented in Appendix B of the ASP. All data shall be reported using the ASP Category B and all deliverables will be in the CLP or CLP equivalent Format. The chemistry data package will contain adequate information and be presented in a clear, legible, concise, and consecutively paginated manner. The data package will include a sample data summary package and a sample data package. Raw data (including electronic media) of all field samples, QC samples, standards, and blanks should be archived and be available upon request for 5 years from the date of generation in accordance with the USEPA (2004) requirement.

Comment 6: The compounds and analytes intended for analysis by reference to TCL and TAL in the Appendix C Table on Page 3 of 3, the Rinsate Sample Collection Protocol in the RCRA Closure Plan for SEAD-72 should be delineated. Also in the table, letter suffixes should be added to the test method numbers and sample holding times to be employed should be included.

Response 6:

The first sentence under the heading **Rinsate Samples** on Page 2-5 states "Rinsate samples will be analyzed for isopropanol, freon, trichloroethylene, acetone, and toluene, the solvents present on the wipes once stored in the building." With reference to the response provided to Comment 4 above this sentence has now been altered to state "Rinsate samples will be analyzed for isopropanol, Freon® 11 (Trichlorofluoromethane, CAS No. 75-69-4), trichloroethylene, acetone, and toluene, the solvents present on the wipes once stored in the building."

No other materials will be quantified in the rinsate samples collected under the proposed work at Building 803. Additional clarification in Appendix C is not considered necessary because the appendix states "All the samples need to be analyzed by a laboratory certified by NYS DOH ELAP for the parameters of interest." The parameters of interest are identified above.

Comment 7: Figure 2-3, Closure Schedule lists Building # 307 in a couple of places. The figure should be corrected (to Building 803).

Response 7:

Agreed. References to Building 307 have been changed to Building 803. The schedule has also been updated to indicate an October 31, 2005 start date for the process. This schedule may subsequently be modified to reflect a spring – fall 2006 start date, based on regulatory review and approval.