TECHNICAL MEMORANDUM
RISK ASSESSMENT, MUNITIONS RESPONSE SITES

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SUBJECT: Munitions Response Post-Remediation Risk Assessment, Seneca Army Depot Activity

1. Purpose and Organization of Memorandum

Parsons Infrastructure & Technology Group Inc. (Parsons) has completed a risk assessment to evaluate potential risks associated with site conditions following the munitions response actions at SEAD-46 (the 3.5-inch Rocket Range), SEAD-57 (the former Explosive Ordnance Disposal [EOD] Area), SEAD-002-R-01 (EOD-2 and EOD-3), SEAD-007-R-01 (the Grenade Range), and SEAD-70 (Building 2110, Filled Area) at the Seneca Army Depot Activity (SEDA or Depot) Superfund Site, Seneca County, New York. This memorandum summarizes the risk assessment approach and the results for each of the sites.

Section 2 of this memorandum provides background information for the risk assessment, section 3 identifies and presents the data used for the risk assessment, sections 4 through 7 summarize each step of the four-step risk assessment process (i.e., hazard identification, exposure assessment, toxicity assessment, and risk characterization), section 8 discusses the risk uncertainties associated with the risk assessment, section 9 summarizes the risk assessment findings, and section 10 lists reference materials used.

2. Background

2.1 Site History

The former military facility was owned by the U.S. Government and operated by the Army between 1941 and 2000 when SEDA's military mission ceased. The Depot occupied approximately 10,600 acres of land in the towns of Varick and Romulus in Seneca County, New York. The Depot's historic military

mission included receipt, storage, distribution, maintenance, and demilitarization of conventional ammunition, explosives, and special weapons.

In September 2000 the Army assumed the role of caretaker of the former Depot. As caretaker, the Army maintains control of the Depot's land until the dates when parcels are transferred to new owners for alternate uses. Areas in the Depot that are subject to continuing investigation and remedial action under the requirements of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), remain under the control of the Army; however, to date more than 8,250 acres of the former Depot have been transferred to the Seneca County Industrial Development Authority, the State of New York, and other federal entities.

2.2 Areas of Concern

This memorandum discusses five areas of concern (AOCs): SEAD-46; SEAD-57; SEAD-002-R-01, which consists of two separate areas defined as Explosive Ordnance Disposal (EOD) Area 2 and Area 3; SEAD-007-R-01; and SEAD-70. The AOCs are located in the northern portion of the former Depot on land that is in the Town of Varick (see Figure 1). SEAD-46 and SEAD-002-R-01 are located in the eastern third of the former Depot. This area is located between Fayette Road and the Depot's eastern security fence, and south of East-West Baseline Road. SEAD-57, SEAD-70, and SEAD-07-R-01 are located in the western third of the former Depot. This area is bounded by North-South Baseline Road and the Depot's western security fence. SEAD-70 is located south and west of the intersection of East-West Baseline Road and North-South Baseline Road. SEAD-57 and SEAD-007-R-01 are located north of East-West Baseline Road. Land within the Depot's former Munitions Storage Area is located between the two areas where the five AOCs are located. SEAD-46, EOD-3, SEAD-57, SEAD-007-R-01, and SEAD-70 are located in areas that are generally undeveloped and surrounded by open grassland, thick brush, and wooded areas; EOD-2 is also partially bordered by the Duck Pond.

2.2.1 SEAD-46

SEAD-46, also known as the "3.5-inch Rocket Range", is a trapezoidal parcel of land that encompasses approximately 68 acres (see Figure 2). The southern east-west boundary of SEAD-46 is located approximately 6000 feet north-northwest of the former Depot's main gate on State Highway 96. The area is comprised primarily of open grassland, which is occasionally interrupted and bordered by areas of dense brush and trees. SEAD-46 is bisected by an unnamed dirt road that runs southeast to northwest. The predominant feature in the area is an earthen backstop target berm that is situated near the northwest corner of the AOC.

From the 1940s to the 1960s SEAD-46 was used for testing fire tracers, 3.5-inch rockets, and possibly other forms of ammunition. The 1998 Archive Search Report (ASR) indicates that the backstop target berm is visible in the 1954 aerial photograph of the area. Although SEAD-46 is identified as the "3.5-inch Rocket Range," the ASR indicates that it also includes a reputed EOD disposal site (i.e., EOD-3) and a known Reserve Component Training Area. Further, the Ordnance and Explosives Engineering Evaluation/Cost Analysis (OE EE/CA) prepared by Parsons in 2004 indicates that SEAD-46 was once

used as a testing range for rocket motors. Review of historic files revealed at least one picture of a 3.5-inch motor fixed to a tripod in front of the backstop berm at SEAD-46.

2.2.2 SEAD-57

SEAD-57, the former Explosive Ordnance Disposal Area (formerly EOD-1), is a rectangular parcel of land that encompasses approximately 72 acres in the west-northwest portion of the former Depot. SEAD-57 is adjacent to the southernmost portion of the Open Burning/Open Detonation Grounds (see Figure 3) that occupies most of the land located in the northwestern corner of the former Depot. SEAD-57 is comprised primarily of open grassland. A few man-made structures, located in the center of the AOC and along its northern edge, exist at SEAD-57. An open, reverse "C"-shaped berm, measuring approximately 80 feet by 100 feet in size, is located in the center of the AOC. Equipment shelters, remote control shelters, and an EOD munitions storage igloo are located along the north-central edge of the AOC. An east-west oriented, unnamed dirt road transects the northern edge of the AOC, and a second, perpendicular, unnamed dirt road intersects the northern road roughly halfway across the AOC's edge. This road provides vehicular access to the area surrounding the earthen containment berm.

For more than 20 years, the 143rd Ordnance Detachment, a Department of the Army tenant organization located at the Depot, performed ordnance and explosives (OE) disposal at SEAD-57. The disposal area was used by EOD personnel for the disposal of conventional ammunition or explosives weighing less than 5 pounds.

2.2.3 SEAD-002-R-01 (EOD-2 and EOD-3)

SEAD-002-R-01 is comprised of two separate areas, EOD-2 and EOD-3, which are located in the northeastern portion of the former Depot in the vicinity of the Duck Pond and SEAD-46.

EOD-2 encompasses approximately 3 acres of land on the southwestern shore of the Duck Pond (see Figure 4). This area is west-northwest of SEAD-46 and southeast of the intersection of Fayette Road and East-West Baseline Road (see Figure 1). EOD-2 is comprised primarily of open grassland with small areas of brush and tree cover. A portion of the eastern boundary of this site is defined by the shore of the Duck Pond. A portion of EOD-2 is collocated with the western portion of SEAD-13, the former Inhibited Red-fuming Nitric Acid disposal area. The ASR states that explosive devices were used in EOD-2, and that non-explosive projectiles were disposed in the Duck Pond.

EOD-3 encompasses approximately 4 acres of land approximately 250 feet north of the earthen target berm in SEAD-46 (see Figure 5). EOD-3 is mostly flat with the exception of a 100 foot by 200 foot depression in the middle of the site. The area surrounding the depression is wooded. The ASR describes the AOC as a former EOD disposal area, and indicates that in the 1950s and 1960s the area surrounding the depression was clear of brush and trees.

2.2.4 SEAD-007-R-01 (Grenade Range)

The Grenade Range, which was constructed in the mid-1980s, encompasses approximately 28 acres of land in the northwestern portion of the former Depot, to the west and southwest of SEAD-57 (see Figure 6). During its lifetime, the Grenade Range area contained wooden and armored vehicle targets, distance

and boundary markers, and a range control tower. The Grenade Range is comprised primarily of open grassland that is surrounded by woods. The ASR states that 40mm M781 (40mm Low Velocity Practice Cartridge) and 35mm M73 sub-caliber practice rockets were used at the Grenade Range during security forces' training. There is no record (or indication at the targets) that high explosive (HE) rounds were tested. Small arms (blanks) casings were reported to be present at the time of the ASR.

2.2.5 SEAD-70

SEAD-70 is a historic fill area encompassing approximately 4.5 acres that are adjacent to the historic location of Building T-2110 in the northwestern portion of the Depot (see Figure 7). Building T-2110 was demolished in 2007. SEAD-70 is south of East-West Baseline Road approximately 1,000 feet west of the intersection of North-South Baseline Road and East-West Baseline Road, and approximately 15,000 feet northwest of the former Depot's main gate on State Highway 96. When Building T-2110 was present at the site, it was encircled by a dirt road and was used to house horses. The remainder of SEAD-70 is undeveloped.

The most noticeable feature in the undeveloped portion of SEAD-70 is a kidney-shaped landfill that forms a flat, topographic high area. The landfill appears to originate near the former barn and expand southeasterly. The landfill's scarp is clearly visible on its eastern side. A large mound is located near the southeastern corner of the barn and an elongated vegetated mound is present along the southern perimeter of the landfill. Immediately east of the landfill is a wetland area beyond which is a large stand of deciduous trees.

The topography in the immediate area of the barn and over the extent of the landfill is relatively flat; however the local and regional topography surrounding the landfill slopes west.

3. Data Used for the Risk Assessment

All soil and groundwater data used in the risk assessment calculations were validated by Parsons' chemists in accordance with US Environmental Protection Agency (USEPA) Region 2 Standard Operating Procedures (SOPs).

3.1 SEAD-46

Analytical results from samples collected during the SEAD-46 remedial investigation (RI) performed between 1999 and 2000 form the datasets used for the risk assessment at this AOC. Soil and groundwater datasets were evaluated for SEAD-46. There are no permanent wetland areas nor surface water features in SEAD-46; therefore, exposure to surface water and to sediment were considered incomplete pathways. A few "surface water" and "sediment" (henceforth "ditchsoil") samples were collected and characterized during the RI; however, these samples were collected from pools that formed during intermittent storm events prior to infiltration or evaporation. Hence, results from surface water samples were not used in this risk assessment. On the other hand, results from "sediment" samples were pooled with soil results that were evaluated in the risk assessment.

The soil dataset for SEAD-46 is comprised of surface (0 to 2 feet), subsurface (2 to 15 feet), and ditchsoil sample results. The soil dataset, which includes a surface soil and a total soil subset, are presented in

Attachment A, Table 1. Surface soil in the SEAD-46 dataset was assumed to be accessible by all potential receptors evaluated in this risk assessment (construction workers, park workers, recreational child visitors, resident adults, and resident children); subsurface soils in the SEAD-46 dataset were assumed accessible by the construction worker receptor only.

During the SEAD-46 RI, two rounds of groundwater samples were collected from six monitoring wells (MW46-1 to MW46-6). Analytical results from these samples were used as the groundwater dataset for the risk assessment. Round 1 samples were collected from January 22-23, 2000; and Round 2 samples were collected from April 25-26, 2000. The RI groundwater samples were collected using low-flow groundwater sampling methods. Generally, the concentrations of chemicals detected in the Round 1 and Round 2 samples are comparable. Groundwater data used for the risk assessment are presented in **Attachment A, Table 2**.

SEAD-46 soil and groundwater samples were analyzed for Target Compound List (TCL) volatile organic compounds (VOCs), TCL semi-volatile organic compounds (SVOCs), TCL pesticides and polychlorinated biphenyls (PCBs), explosive constituents, and Target Analyte List (TAL) metals. Prior to performing summary statistics and risk assessment calculations, analytical results from sample duplicate pairs of soil data were averaged.

3.2 SEAD-57

Analytical results from soil and ditchsoil samples collected during the SEAD-57 Expanded Site Investigation (ESI) in 1993 and 1994, the RI in 1999 and 2000, and the Munitions Response activities performed in 2006 were used in the risk assessment. Surface soil in the SEAD-57 dataset was assumed to be accessible by all potential receptors evaluated in this risk assessment, whereas subsurface soils in the SEAD-57 dataset were assumed accessible by only construction worker receptors. Soil data used for the risk assessment are presented in **Attachment B, Table 1**.

Analytical results from groundwater samples collected during the ESI on February 3, 1994; Round 1 and Round 2 of the SEAD-57 RI on January 23-25, 2000 and April 26-28, 2000; and Round 1 and Round 2 of the SEAD-12 RI on April 23, 1999 and December 2, 1999 comprise the SEAD-57 groundwater dataset. During the ESI, groundwater samples were collected from three monitoring wells (MW57-1, MW57-2, and MW57-3) using bailers. Since bailers were used during the ESI sampling, elevated results are suspect. It is likely that elevated contaminant concentrations found in the ESI samples are due to the presence of silt or entrained soil fines that were stirred up by the bailing technique that was used when sampling these wells. The repetitive lowering and raising of the bailer is likely to stir up any soil or silt in the well, and the presence of metals in soil are likely to contribute to the concentration of metals detected in the samples from such event. The use of bailers creates more turbidity in samples than do low-flow sampling procedures, and, as such, metal concentrations in samples obtained with bailers tend to be greater than metal concentrations obtained with low-flow sampling procedures.

Samples collected during the SEAD-57 and SEAD-12 RI sampling events were collected using low-flow sampling procedures. Groundwater samples were collected from seven monitoring wells (MW57-1 to MW57-7) as part of the SEAD-57 RI, and from one monitoring well (MW57-1) as part of the SEAD-12

RI. Groundwater data collected during all groundwater sampling events are presented in **Attachment B, Table 2a**.

An alternate SEAD-57 groundwater dataset that excludes the ESI groundwater results is presented in **Attachment B, Table 2b**. ESI results were excluded from the alternate dataset due to concerns over result biases due to the use of bailers which tend to create more turbidity in samples than do low-flow sampling procedures. As such, the majority of detected metal concentrations in the ESI samples were a magnitude higher than comparable metal concentrations in the RI samples. This discrepancy in metal concentration is suspected to be attributable to the presence of metal contaminants in suspended soil/silt that was present in the ESI samples but not in the RI samples.

Soil and groundwater samples collected from SEAD-57 were analyzed for TCL VOCs, SVOCs, pesticides and PCBs, explosives, and TAL metals during the ESI sampling event; TCL VOCs, SVOCs, pesticides and PCBs, and TAL metals were analyzed during the SEAD-57 RI sampling events; and TAL metals were analyzed during the SEAD-12 RI sampling events. Analytical results from sample duplicate pairs were presented as discreet samples.

3.3 SEAD-002-R-01 (EOD-2 and EOD-3)

The SEAD-002-R-01 dataset is separated into two area-specific datasets for EOD-2 and EOD-3. Analytical results collected during the Munitions Response activities in 2006 form the dataset used for the risk assessment at SEAD-002-R-01. This dataset includes only shallow soil samples (0 to 2 feet). The EOD-2 soil data used in the risk assessment are presented in **Attachment C, Table 1**. The EOD-3 soil data used in the risk assessment are presented in **Attachment D, Table 1**. Soil associated with the analytical results was assumed to be accessible by all potential receptors evaluated in this risk assessment; therefore all results presented in the aforementioned tables were used in the risk assessment.

Soil samples collected from EOD-2 and EOD-3 were analyzed for TCL VOCs, SVOCs, pesticides and PCBs, and TAL metals during the Munitions Response sampling events. Analytical results from sample duplicate pairs of soil data were presented as discreet samples.

3.4 SEAD-007-R-01 (Grenade Range)

Analytical results from samples collected during the Munitions Response activities in 2006 form the dataset used for the risk assessment at the Grenade Range. The SEAD-007-R-01 soil dataset consists of results from shallow samples only. The soil data used for the risk assessment are presented in **Attachment E, Table 1**. Soil associated with the analytical results was assumed to be accessible by all potential receptors evaluated in this risk assessment; therefore all results presented in the aforementioned table were used in this risk assessment.

Soil samples collected from SEAD-007-R-01 were analyzed for TCL VOCs, SVOCs, pesticides and PCBs, and TAL metals during the Munitions Response sampling event. Analytical results from sample duplicate pairs of soil data were presented as discreet samples.

3.5 SEAD-70

Analytical results from selected shallow and subsurface soil samples that were collected during the 1994 ESI sampling event, and shallow soil samples collected during the limited removal action conducted between 2006 and 2009 form the SEAD-70 soil dataset. Results associated with soil that was removed as part of the SEAD-70 limited removal action have been eliminated from the SEAD-70 soil dataset. The soil data used for this risk assessment are presented in **Attachment F, Table 1**. Soil associated with the analytical results was assumed to be accessible by all potential receptors evaluated in this risk assessment; therefore all results presented in the aforementioned table were used in this risk assessment.

Analytical results from groundwater samples collected during the ESI sampling event conducted on July 7 and 8, 1994 form the SEAD-70 groundwater dataset. The groundwater data used for the risk assessment are presented in **Attachment F, Table 2**.

Soil samples collected from SEAD-70 were analyzed for TCL VOCs, SVOCs, pesticides and PCBs, and TAL metals during the ESI sampling event; samples collected during the limited removal action were analyzed for arsenic only. Analytical results from sample duplicate pairs of soil data were presented as discreet samples.

4. Hazard Identification

Contaminants that were evaluated in this risk assessment (i.e., Contaminants of Potential Concern [COPCs]) were selected by comparing maximum detected concentrations (MDCs) with USEPA Regional Screening Level (RSLs). RSLs for carcinogenic compounds were used at full value, which corresponds to a target cancer risk of $1x10^{-6}$; RSLs for non-carcinogenic compounds were reduced by a factor of 10 (i.e., 0.1 times the listed RSL value), which corresponds to a hazard quotient of 0.1. When USEPA RSLs were not available, other USEPA screening values were used if identified. For example, in the absence of USEPA RSLs Parsons consulted USEPA Region 3 or 9 Risk-Based Concentrations (RBCs) for residential soil, USEPA Region 3 or 9 RBCs for tapwater, and USEPA Maximum Contaminant Levels (MCLs) for drinking water.

Chemicals with concentrations below the comparator RSLs were eliminated from the list of COPCs evaluated in this risk assessment. Chemicals with no available screening values and chemicals with maximum detected concentrations above the screening values were considered COPCs. In addition, all members of a chemical class that had any one member selected as a COPC were considered COPCs (e.g., all detected carcinogenic polycyclic aromatic hydrocarbons (cPAHs) were retained as COPCs if any one cPAH was identified as a COPC based on the aforementioned screening process).

Soil and groundwater screening tables summarizing the COPC identification process are presented in:

- SEAD-46: **Attachment A, Tables 3A** and **3B**, respectively.
- SEAD-57: **Attachment B, Tables 3A** and **3B**, respectively.
- SEAD-002-R-01 (EOD-2): **Attachment C, Table 2** (soil only).
- SEAD-002-R-01 (EOD-3): **Attachment D, Table 2** (soil only).
- SEAD-007-R-01 (Grenade Range): **Attachment E, Table 2** (soil only).

- SEAD-70: **Attachment F, Tables 3A** and **3B**, respectively.

5. Exposure Assessment

5.1 Exposure Point Concentrations (EPCs)

Risk due to soil exposure and ambient air exposure was evaluated at all AOCs; risk due to groundwater exposure was evaluated at SEAD-46, SEAD-57, and SEAD-70 only. Risk was evaluated via the reasonable maximum exposure (RME) scenarios.

Risk due to soil and groundwater exposure was evaluated based on soil and groundwater EPCs which were set equal to a contaminant's MDC or a contaminant's upper confidence limit (UCL) of the arithmetic mean concentration. MDCs were used as EPCs where limited contaminant data exist. UCLs were used for EPCs where large-enough contaminant datasets exist. When UCLs were used, they were calculated via the USEPA's Software for Calculating Upper Confidence Limits (ProUCL) version 4.00.04. When necessary, datasets were analyzed in ProUCL with "ND" to account for non-detect values. This EPC calculation is consistent with USEPA guidance (2002b).

Risk due to ambient air exposure was evaluated based on soil EPCs. COPCs for ambient air were determined from soil EPCs and concentrations of particulate matter that were below 10 μm in aerodynamic diameter (PM10) in ambient air. Ambient PM10 concentrations for the construction worker were estimated using an emission and dispersion model (see Attachment G). PM10 concentrations for industrial workers and residents at the Depot were set at 17 $\mu g/m^3$, which is based on particulate measurements collected at the Depot.

EPCs for soil, groundwater, ambient air (one scenario for construction workers and one scenario for other human receptors), and inhaled air (in a shower) are presented in:

- SEAD-46: **Attachment A, Tables 4A** through **4E**, respectively.
- SEAD-57: **Attachment B, Tables 4A** through **4E**, respectively.
- SEAD-002-R-01 (EOD-2): **Attachment C, Tables 3A** through **3C**, respectively (no groundwater considered).
- SEAD-002-R-01 (EOD-3): Attachment **D, Tables 3A** through **3C**, respectively (no groundwater considered).
- SEAD-007-R-01 (Grenade Range): **Attachment E, Tables 3A** through **3C**, respectively (no groundwater considered).
- SEAD-70 EPC: Attachment F, **Tables 4A** through **4E**, respectively.

5.2 Receptors, Exposure Pathways, and Exposure Profiles

Currently, each AOC is unused and vacant. Land in the AOCs is currently designated as either Conservation/Recreation (SEAD-57, SEAD-70, SEAD-007-R-01) or Residential/Resort (SEAD-46, SEAD-002-R-01 [EOD-2 and EOD-3]). Based on the current and foreseeable land use at the sites, five future human receptors were identified for this risk assessment: construction worker, park worker, recreational child visitor, adult resident, and child resident. Adult and child residents are included in the

risk assessment to evaluate potential risks to receptors under the Residential/Resort (i.e., unrestricted use) scenario.

Soil exposure pathways analyzed in this risk assessment are the ingestion of soil, dermal contact with soil, and inhalation of ambient dust formed by soil resuspension. Groundwater exposure pathways analyzed in this risk assessment are the intake of groundwater, inhalation of groundwater, and dermal contact with groundwater. Although groundwater pathways are analyzed, it is unlikely that groundwater will be used as a potable water source at the Depot. The aquifer that underlies the Depot has not been shown to be productive enough to supply sufficient water to fulfill potential potable water needs of future occupants. Further, the shallow overburden aquifer that underlies the Depot is subject to large seasonal variations in groundwater elevation, and periodically disappears during dry seasons at many of the AOCs at the Depot. Finally, the Depot has an existing alternate potable water source that is currently in use. Nevertheless, as a conservative approach, the aforementioned groundwater exposure pathways were evaluated in this risk assessment.

Exposure assumptions for the park worker, construction worker, recreational child visitor, adult resident, and child resident receptors are summarized in **Attachment G Tables 1A, 1B, 1C, 1D,** and **1E**, respectively. These assumptions approximate the frequency, duration, and manner in which receptors would be exposed to environmental media.

5.3 Quantification of Exposure

Each receptor's potential exposure to the identified COPCs was quantified for each of the applicable exposure pathways. Potential exposures were calculated following methods recommended in USEPA guidance documents, such as the USEPA Risk Assessment Guidance for Superfund (RAGS) (USEPA, 1989). Human health intake, or absorbed dose (depending on the exposure route), was calculated with EPCs and exposure assumptions. The total exposure of any receptor to any COPC is divided by the period of interest to obtain an average exposure. The period of interest, or averaging time, is a function of the toxic endpoint. For non-carcinogenic effects, the period of interest is the receptor's exposure time (specific to the scenario being assessed); for carcinogenic effects, it is the receptor's lifetime (assumed to be 70 years).

6. Toxicity Assessment

Toxicity variables considered in this assessment include the reference dose (RfD) and the reference concentration (RfC) to evaluate non-carcinogenic effects, and the slope factor and the unit risk to evaluate carcinogenic effects. Toxicity values for the risk assessment were selected in accordance with the USEPA-recommended (2003a) human health toxicity value hierarchy.

For the evaluation of carcinogenic cPAHs, Parsons used toxicity equivalency factors (TEFs) that are based on the toxicity of benzo(a)pyrene as published by the USEPA (1993) (see below).

PAH	TEF
Benzo(a)pyrene	1.0
Benzo(a)anthracene	0.1
Benzo(b)fluoranthene	0.1
Benzo(k)fluoranthene	0.01
Dibenzo(a,h)anthracene	1.0
Chrysene	0.001
Indeno(1,2,3-cd)pyrene	0.1

To calculate the slope factor for any given cPAH, the appropriate TEF was multiplied by the slope factor for benzo(a)pyrene. The toxicity factors used in this evaluation are summarized in Attachment G Tables 2A through 2D.

Information regarding Gastrointestinal (GI) absorption efficiency for administered doses was used for the development of dermal toxicity factors. Specifically, oral slope factors were converted to dermal slope factors by dividing by the GI absorption efficiency; likewise, oral reference doses were converted to dermal reference doses by multiplying by the GI absorption efficiency. The derivation of dermal toxicity values for the risk assessment is consistent with USEPA (2004) recommendations. The GI absorption efficiency that was used in this risk assessment is the value recommended by the USEPA in its Supplemental Guidance for Dermal Risk Assessment. In the event that information regarding absorption of a particular substance could not be located, an oral absorption efficiency of 100% was assumed. This method is consistent with USEPA Region 2 guidance (personal communication between A. Schatz of Parsons and M. Maddeloni of USEPA Region 2).

For the development of inhalation toxicity values, RfCs were converted into inhalation RfDs with units of milligrams of chemical per kilogram of body weight per day (mg/kg-day). Similarly, inhalation unit risk factors were converted into inhalation slope factors in units of per milligrams of chemical per kilogram of body weight per day ($(mg/kg\text{-}day)^{-1}$).

Ideally, chronic RfDs and RfCs are based on chronic exposure studies of humans or animals. "Chronic exposure" for humans is considered to be exposure of seven years or more; therefore, RfDs and RfCs for chronic exposure are appropriate for evaluating adult and child residential receptor exposures. On the other hand, RfDs and RfCs for subchronic exposure, which is defined as exposure between 1 and 6 years, are appropriate for evaluating construction worker, recreational child visitor, and child resident receptor exposures. Nevertheless, as a conservative approach, chronic RfDs and RfCs were used to assess risk for all receptors.

7. Risk Characterization

Detailed risk calculations for SEAD-46 for exposure via soil ingestion, groundwater intake, dermal exposure to soil, dermal exposure to groundwater, inhalation of groundwater, and inhalation of dust in ambient air are presented in **Attachment A, Tables 5** through **10.** Non-cancer hazard indices and cancer risks calculated for the receptors are presented in **Attachment A, Table 11**.

Detailed risk calculations based on all available analytical data for SEAD-57 for exposure via soil ingestion, groundwater intake, dermal exposure to soil, dermal exposure to groundwater, inhalation of groundwater, and inhalation of dust in ambient air are presented in **Attachment B, Tables 5** through **10**. Non-cancer hazard indices and cancer risks calculated for the receptors are summarized in **Attachment B, Table 11**. SEAD-57 risk calculations for a modified dataset that excludes ESI groundwater results that are assumed to be affected by high levels of turbidity associated with the collection of the sample using a bailer are presented in **Attachment B, Tables 6A, 8A** and **11A**.

Detailed risk calculations for SEAD-002-R-01 (EOD-2 and EOD-3) and SEAD-007-R-01 (Grenade Range for exposure via soil ingestion, dermal exposure to soil, and inhalation of dust in ambient air are presented in **Tables 5** through **7**, in their respective attachments (**Attachment C, D,** and **E**, respectively). Non-cancer hazard indices and cancer risks calculated for the receptors are summarized in **Table 8**, in their respective attachments.

Detailed risk calculations for SEAD-70 for exposure through soil ingestion, groundwater intake, dermal exposure to soil, dermal exposure to groundwater, inhalation of groundwater, and inhalation of dust in ambient air are presented in **Attachment F, Tables 5** through **10**. Non-cancer hazard indices and cancer risks calculated for the receptors are summarized in **Attachment F, Table 11**.

7.1 Risk Characterization Results

The USEPA-recommended limit (i.e., the value that should not be exceeded) for the non-carcinogenic hazard index (HI) is 1.0. The USEPA upper limit for the cancer risk level is $1x10^{-4}$ and the preferred limit is $1x10^{-6}$.

7.2 SEAD-46

7.2.1 Conservation/Recreation Scenario

Estimated non-carcinogenic hazard indices (HIs) for the park worker and recreational child visitor receptors at SEAD-46 are below the USEPA limit of 1; the estimated HI for the construction worker receptor is above the USEPA limit. Estimated cancer risk levels for the construction worker, park worker, and recreational child visitor receptors at SEAD-46 are within the USEPA acceptable range (i.e., $1x10^{-4}$ to $1x10^{-6}$) for carcinogenic risk.

Receptor	Hazard Index	Cancer Risk
Park Worker	4.2E-01	1.8E-05
Construction Worker	1.1E+00	1.3E-06
Recreational Child Visitor	2.4E-01	2.0E-06

Three exposure pathways, ingestion of soil (57%), inhalation of dust in ambient air (24%), and intake of groundwater (17%), represent approximately 99% of the HI calculated for the construction worker. Contributions from exposure to aluminum (7.9%), arsenic (17.2%), cobalt (14.5%), iron (26.5%), and manganese (26.1%) represent more than 98.5% of the construction worker's total estimated HI.

Analyte	EPC (mg/kg)	USEPA RSL (mg/kg)	NYSDEC SCO (mg/kg)	SEDA Soil Avg. (mg/kg)	SEDA Std. Dev. (mg/kg)
Aluminum	14,000	77,000	NA	13,206	4,159
Arsenic	5.3	0.39	13	5.2	2.8
Cobalt	12	23	NA	11	4
Iron	27,000	55,000	NA	24,661	6,854
Manganese	670	1,800	1,600	609	335
NA = none available					

As summarized in the table below, the EPC used for aluminum, cobalt, iron, and manganese in SEAD-46 soil are below USEPA RSLs for residential soil; the EPC for manganese at SEAD-46 is also below the New York State (NYS) unrestricted use soil cleanup objective (SCO) values. The EPCs for the five primary COPCs at SEAD-46 are consistent with background soil concentrations found at the Depot, each being within one standard deviation of the accepted average background concentration found in Depot samples.

As such, the estimated HI for the construction worker at SEAD-46 is comparable to, and perhaps lower than that which could be found at a residential site based on federal and state guidance values. EPCs at SEAD-46 are also consistent with concentrations at unaffected sites at the Depot. Further, it is important to note that intake of manganese, iron, and cobalt are considered to be beneficial to human health at moderate doses and that the lack of these metals can have deleterious health effects in adults and children.

As shown in the table below, which summarizes SEAD-46 COPCs exposure pathway contributions to the HI for the construction worker, exposure to manganese via all pathway routes represents the largest portion (percentage basis) of the HI estimated.

Contributions to Construction Worker's Hazard Index						
Analyte	Soil Ingestion	Dermal Contact Soil	Inhalation of Dust	Ingestion of Groundwater	Total	Percentage of Total
Chrysene	2.0E-04	7.8E-05			2.8E-04	0.0%
Dieldrin	9.2E-04	2.2E-04			1.1E-03	0.1%
Aluminum	4.6E-02	1.3E-04	4.2E-02		8.8E-02	7.9%
Arsenic	6.0E-02	5.1E-03		1.3E-01	2.0E-01	17.7%
Cobalt	1.3E-01	3.8E-04	3.0E-02		1.6E-01	14.6%
Iron	2.9E-01	8.6E-04			2.9E-01	26.6%
Manganese	9.0E-02	6.5E-03	2.0E-01		2.9E-01	26.7%
Thallium	1.1E-02	3.1E-05		6.1E-02	7.1E-02	6.4%
Total	**6.3E-01**	**1.4E-02**	**2.7E-01**	**1.9E-01**	**1.1E00**	**100%**

The most significant portion of the manganese contribution to the construction worker's HI is via inhalation of dust. The inhalation hazard quotient for manganese dust is based on a chronic RfC that was derived in a USEPA (1998) study of the inhalation of manganese dioxide dust by industrial workers in battery manufacturing facilities. The exact composition of the manganese identified at SEAD-46 is

unknown, but it is unlikely that all of the SEAD-46 manganese exists as manganese dioxide. More likely, the manganese present at SEAD-46 is a mixture of various naturally occurring minerals, including oxide, salt, carbonate, and silicate forms. Since manganese dioxide likely contributes only a portion of the risk at SEAD-46, the use of the aforementioned RfC is a very conservative approach; it is likely that the resulting hazard quotient overestimates probable impacts to the construction worker at SEAD-46 where other forms of manganese are likely to be present. Nevertheless, since the exact composition of the manganese at SEAD-46 is unknown, no adjustments to the HI can be made. Lastly, it is important to note that the aforementioned USEPA-promulgated RfC is an uncertain number; the USEPA assigns the RfC an uncertainty factor of 1,000, reflecting a low degree of confidence in its value.

In addition to the RfC, the inhalation HI for manganese is also based on an inhalation RfD. The inhalation RfD used in this risk assessment is 4,000 times lower than the American Conference of Governmental Industrial Hygienists' (ACGIH's) threshold limit value (TLV), where the TLV is the concentration of a substance to which an industrial worker can be exposed without adverse effects. This fact further emphasizes the conservative nature of the risk due to manganese calculated in this assessment.

The EPC and all sample concentrations measured for arsenic in SEAD-46 groundwater are below the USEPA MCL for arsenic in drinking water; the only concentration measured for thallium in SEAD-46 groundwater is above the USEPA MCL for thallium in drinking water.

Analyte	EPC (mg/L)	MCL (mg/L)
Arsenic	0.004	0.010
Thallium	0.004	0.002

Arsenic was found in only 3 of the 12 groundwater samples collected at SEAD-46; thallium was found in only 1 of the 12 groundwater samples. Further, the three times arsenic was detected in SEAD-46 groundwater samples all occurred in the first round of sampling; thallium was detected in the first round of sampling, as well. It is assumed, then, that the arsenic and thallium found in groundwater at SEAD-46 are artifacts of the initial well installation and development process that likely entrained silt/soil fines that are not associated with dissolved forms of these COPCs.

Aside from the above discussion concerning COPC concentrations in SEAD-46 groundwater, it is unlikely that future receptors at the Depot would ever contact groundwater at the site because groundwater at the Depot is unlikely to be used as a potable water source. As mentioned in Section 5.2, the shallow overburden aquifer that underlies the Depot has not been shown to be productive enough to supply sufficient water to fulfill the potable water needs of potential future occupants. Further, groundwater elevations at the AOC are subject to significant seasonal variations and the overburden aquifer at SEAD-46 periodically disappears dry periods. Finally, the Depot has an existing alternate potable water source that is currently in use.

As discussed in Section 7.1, the USEPA sets a preferred limit of 1 for the non-carcinogenic HI. This value is provided as a limit for the entire human body; however, this limit can also be apportioned at the individual body system or target organ level. With reference to the six largest components of the SEAD-46 construction worker's non-carcinogenic HI: manganese's primary effect is on the central nervous system; iron's primary target organs are the heart, liver, or endocrine glands, with secondary effects to the lungs; arsenic's primary target organ is the skin; cobalt's primary effect is on the lungs with a secondary

affect on the heart; aluminum's is to neuro-development of the brain; and thallium's is to the liver, blood, and hair. As such the maximum effect that is anticipated to impact any single body organ would be toward the construction worker's heart where the hazard quotients determined for iron, cobalt and the other unassigned COPCs would represent a total hazard quotient of less than 0.5. Therefore, the construction worker's apparent non-carcinogenic HI is not above the EPA's limit at the target organ/system level.

Target Organ or Effect	**Estimated HI**	**Contributing COPCs**
Central Nervous System or Neuro Development	0.37	Aluminum and Manganese
Skin	0.20	Arsenic
Lungs	0.45	Cobalt and Iron
Heart	0.45	Cobalt and Iron
Liver	0.36	Iron and Thallium
Endocrine Glands	0.29	Iron

7.2.2 Residential Scenario

Estimated non-carcinogenic HIs for the adult and child residential receptors at SEAD-46 are above the USEPA limit of 1. Estimated cancer risk levels for the adult and child residential receptors at SEAD-46 are within the USEPA acceptable range (i.e., $1x10^{-4}$ to $1x10^{-6}$); however, the estimated cancer risk for a lifetime resident is above the USEPA acceptable range.

Pathway/Receptor	**Hazard Index**	**Cancer Risk**
Inhalation of Dust in Ambient Air	7.5E-01	1.9E-06
Ingestion of Soil	2.7E-01	4.1E-06
Intake of Groundwater	5.3E-01	5.6E-05
Dermal Contact to Soil	7.9E-03	5.4E-07
Dermal Contact to Groundwater	9.9E-03	0.0E+00
TOTAL for RESIDENT ADULT	**1.6E+00**	**6.3E-05**

Inhalation of Dust in Ambient Air	1.5E+00	9.6E-07
Ingestion of Soil	2.5E+00	9.5E-06
Intake of Groundwater	1.9E+00	4.9E-05
Dermal Contact to Soil	5.2E-02	8.9E-07
Dermal Contact to Groundwater	1.7E-02	5.7E-07
TOTAL for RESIDENT CHILD	**6.0E+00**	**6.1E-05**

Inhalation of Dust in Ambient Air		2.8E-06
Ingestion of Soil		1.4E-05
Intake of Groundwater		1.1E-04
Dermal Contact to Soil		1.4E-06
Dermal Contact to Groundwater		1.9E-06
TOTAL for LIFETIME RESIDENT		**1.2E-04**

The intake of groundwater represents approximately 84% of the cancer risk for the lifetime resident. The COPC representing all (100%) of the carcinogenic risk estimated for the intake of groundwater is arsenic. As discussed above, arsenic was detected three times during the first RI sampling event only. The EPC concentration was detected at 4 µg/L which is below the USEPA MCL for arsenic in drinking water and below the NYS Ambient Water Quality Standard and Guidance Value (GA Standard). As has discussed earlier, the use of the groundwater at the Depot is unlikely. Thus, the estimated cancer risk for the lifetime resident is presumed to overestimate what is reasonably likely to exist at SEAD-46.

Three exposure pathways, ingestion of soil, intake of groundwater, and inhalation of dust represent approximately 99% of the non-carcinogenic HIs calculated for the adult and child residential receptors, as shown in the two tables presented below.

Contributions to Adult Resident's Hazard Index							
Analyte	**Soil Ingestion (17%)**	**Dermal Contact Soil (0.5%)**	**Inhalation of Dust (47.9%)**	**Ingestion of Groundwater (34%)**	**Dermal Contact Groundwater (0.6%)**	**Total**	**Percentage of Total**
Chrysene	8.5E-05	.4.4E-05				1.3E-04	0.01%
Dieldrin	3.9E-04	1.6E-04				5.5E-04	0.03%
Aluminum	1.9E-02	7.7E-05	1.2E-01			1.4E-01	8.64%
Arsenic	2.5E-02	3.0E-03		3.7E-01	8.6E-03	4.0E-01	25.56%
Cobalt	5.5E-02	2.2E-04	8.0E-02			1.4E-01	8.85%
Iron	1.2E-01	5.0E-04				1.2E-01	7.93%
Manganese	3.8E-02	3.8E-03	5.5E-01			6.0E-01	37.84%
Thallium	4.5E-03	1.8E-05		1.7E-01	1.4E-03	1.8E-01	11.14%
Total	**2.7E-01**	**7.9E-03**	**7.5E-01**	**5.3E-01**	**9.9E-03**	**1.6E00**	**100%**

Contributions to Child Resident's Hazard Index							
	Soil Ingestion (41.9%)	**Dermal Contact Soil (0.9%)**	**Inhalation of Dust (25.6%)**	**Ingestion of Groundwater (31.4%)**	**Dermal Contact Groundwater (0.3%)**	**Total**	**Percentage of Total**
Chrysene	7.9E-04	2.9E-04				1.1E-03	0.0%
Dieldrin	3.6E-03	1.0E-03				4.7E-03	0.1%
Aluminum	1.8E-01	5.1E-04	2.4E-01			4.2E-01	7.0%
Arsenic	2.4E-01	2.0E-02		1.3E00	1.5E-02	1.5E00	26.0%
Cobalt	5.2E-01	1.4E-03	1.7E-01			6.9E-01	11.5%
Iron	1.2E00	3.2E-03				1.2E00	19.5%
Manganese	3.6E-01	2.5E-02	1.1E00			1.5E00	25.2%
Thallium	4.2E-02	1.2E-04		5.9E-01	2.3E-03	6.4E-01	10.7%
Total	**2.5E00**	**5.2E-02**	**1.5E00**	**1.9E00**	**1.7E-02**	**6.0E00**	**100%**

In each case, the ingestion of groundwater represents approximately one-third of the total hazard index estimated for the resident receptors. As stated above, the groundwater pathway for SEAD-46 is considered incomplete as the shallow aquifer beneath the Depot yields poorly, and is generally inadequate to fulfill domestic use. Further, an alternative, non groundwater-derived supply of potable water is available at the Depot. Finally, the largest component of the groundwater intake HI results from the consumption of groundwater that contains arsenic; however, the concentration of arsenic in the groundwater at SEAD-46 is below the federal MCL and below the state's GA standard. The second largest component of the groundwater intake HI results from the consumption of groundwater that contains thallium; however, thallium was detected only once in the 12 samples characterized. Further, this detection occurred during the first round of sampling only. Therefore, the groundwater intake component of the two residents' HIs are considered to overestimate the actual hazard that exists.

A significant portion of the overall HI for the child and adult resident is due to the intake of soil contaminated with metals at concentrations that are consistent with USEPA RSLs for residential soil and NYS unrestricted use SCOs. However, the EPCs for each of these metals are generally consistent with available guidance values and regional background soil concentrations. Therefore, the level of potential hazard that is estimated cannot be differentiated from that which would be found in a residential environment. Applying the full ingestion of soil value to the overall HI overestimates the level of non-carcinogenic hazard at SEAD-46. A similar argument applies to the HI from the inhalation of dust: the inhalation risk is due to the inhalation of metals that are present at concentrations that are consistent with those that would be found in a residential environment.

Six contaminants, aluminum, arsenic, cobalt, iron, manganese, and thallium represent over 99% of the HI estimated for the residential child receptor. As discussed for the lifetime resident, the contribution of arsenic results from an EPC that is below the USEPA MCL for drinking water; hence, the HI is presumed overestimate the risk that exists at SEAD-46. Also, soil EPCs are consistent with typical background

concentrations at the Depot and are generally below USEPA RSLs and NYS SCOs. Therefore, it is likely that each of these hazard indices overestimates what may reasonably exist at SEAD-46.

Target organ analysis for the adult resident, summarized below, suggests that the largest projected impact for the adult (~ 0.70) will be on the central nervous system due to the presence of aluminum and manganese. As stated above however, these metals are present in the soil at SEAD-46 at levels that are consistent with the SEDA background and acceptable for unrestricted use and residential purposes.

Target Organ or Effect	Estimated HI	Contributing COPCs
Central Nervous System or Neuro Development	Adult, 0.74 | **Child, 1.92**	Aluminum and Manganese
Skin	Adult, 0.40 | **Child, 1.5**	Arsenic
Lungs	Adult, 0.26 | **Child, 1.89**	Cobalt and Iron
Heart	Adult, 0.26 | **Child, 1.89**	Cobalt and Iron
Liver	Adult, 0.30 | **Child, 1.84**	Iron and Thallium
Endocrine Glands	Adult, 0.12 | **Child, 1.2**	Iron

Target organ analysis for the child suggests that there are potential target organ effects at levels above 1 for the central nervous system, heart, liver, endocrine systems, and skin. However, as discussed, these effects result from contaminant levels that are consistent with concentrations that would be found in residential areas that are allowed under prevailing environmental regulations and are consistent with background concentrations found in the area of the Depot. As such, the estimated effects can not be separated from those that are associated with native soils. Therefore, each of the potential risks and hazards identified for the child resident is considered to be an overestimate of the potential impact experienced.

7.2.3 Conclusions

Projected non-carcinogenic hazard indices for the park worker and the recreational child visitor at SEAD-46 are below the USEPA-recommended limit of 1. The projected carcinogenic risk for the park worker, the construction worker, and the recreation child visitor are all within the USEPA acceptable range (i.e., $1x10^{-4}$ to $1x10^{-6}$).

Non-carcinogenic HIs for the construction worker and the adult and child residential receptors are estimated to be above the USEPA limit; however, for each receptor the elevated HI can be attributed to SEAD-46 EPCs that are consistent with, and often below, state and federal guidance limits and standards (with the sole exception being for thallium in groundwater). Therefore, the Army believes that the estimated HIs overestimate the non-carcinogenic hazard index that is likely present at SEAD-46.

Similarly, the carcinogenic risk for the lifetime resident, which is estimated to be above the USEPA preferred range, is driven primarily by the intake of arsenic in groundwater. However, the concentration of arsenic in groundwater at SEAD-46 is below its USEPA MCL. As such, the cancer risk level for the SEAD-46 lifetime resident likely overestimates the actual risk that exists at the site, especially if consideration is given to the unlikelihood that groundwater would be used as a potable water source at the

Depot. Therefore, the Army believes that environmental conditions at SEAD-46 do not pose an unacceptable level of risk to any future receptors.

7.3 SEAD-57

Initially, the risk assessment for SEAD-57 was based on the analysis and evaluation of all available soil and groundwater data collected during the ESI and RI events. The estimated non-carcinogenic hazard indices and carcinogenic risks found in this evaluation are summarized below. These results are summarized in **Attachment B, Table 1** through **11**.

SEAD-57 Human Health Risk Assessment Summary Based on all ESI and RI Data		
Receptor	**Hazard Index**	**Cancer Risk**
Park Worker	1.0E00	1.5E-05
Construction Worker	2.1E00	1.1E-06
Recreational Child Visitor	5.7E-01	1.7E-06
Adult Resident	4.0E00	6.6E-05
Child Resident	1.5E01	5.7E-05
Lifetime Resident		1.2E-04

As shown, the risk assessment suggests that elevated non-carcinogenic hazard indices are estimated for the construction worker and the adult and child residents, and that a carcinogenic risk level of greater than 1 in 10,000 ($1x10^{-4}$) is estimated for a lifetime resident.

Further examination of the estimated hazards and risks indicates that a significant component of the projected hazards and risks is due to the varying forms of exposure to groundwater. Groundwater samples collected during the ESI were obtained using bailers, an aggressive sampling technique, whereas samples collected during the RI were collected using low-flow, purge-and-pump sampling, a procedure that is less aggressive and currently recommended by oversight agencies.

After review of the groundwater sample results, it is apparent that there are differences in the quality of the groundwater between the ESI and RI, especially with respect to metal concentrations and a reported result for bis(2-ethylhexyl)phthalate [i.e., also known as Di(2-ethylhexyl)phthalate or DEHP]. With reference to the DEHP, it was detected once in a single well, and when it was detected, it was found at a concentration of 20 µg/L, which exceeds its federal MCL (i.e., 6 µg/L). The single occurrence of this analyte was observed in MW57-3 in the sample that was collected during the ESI event. DEHP was not detected in any of the 18 samples that were collected during the RI events using low-flow, purge-and-pump sampling procedures including two subsequent sampling events conducted at MW57-3. As such, the ESI event result is considered to be non-representative of the quality of the groundwater that remains at the site. It is presumed that this anomalously elevated value results either due to being present in soil or silt that may have been contained in the ESI sample, or due to an artifact of the original well installation and development process that was completed at the time of the ESI.

The evaluation of metal contaminant results from the ESI and RI sampling events also indicates that metal concentrations observed in the ESI samples are higher, frequently by as much as an order of magnitude, than those that are observed in the samples from RI events. This analysis also indicates that the two highest concentrations reported for antimony in groundwater occurred in ESI samples and that both of these results were more than 10 times the only antimony level reported in the RI sampling events. Similarly, the only time cobalt was detected in a groundwater sample from SEAD-57 was during the ESI sampling event. Therefore, it is the Army's contention that the ESI sample results for metals and DEHP are not representative of the groundwater that underlies SEAD-57, and these results have been eliminated from the analysis of risks and hazards that exist at the site.

SEAD-57 Human Health Risk Assessment Summary Based only on RI Data		
Receptor	**Hazard Index**	**Cancer Risk**
Park Worker	3.8E-01	1.4E-05
Construction Worker	9.5E-01	1.1E-06
Recreational Child Visitor	2.3E-01	1.6E-06
Adult Resident	1.3E00	5.0E-05
Child Resident	5.8E00	4.9E-05
Lifetime Resident		9.8E-05

Based on these determinations, the non-carcinogenic hazards and carcinogenic risks that are estimated to remain at SEAD-57 are shown below.

The revised calculations without the ESI groundwater data for antimony and cobalt are presented in **Appendix B Tables 1** through **5, 6a, 7, 8a, 9, 10,** and **11**.

7.3.1 Conservation/Recreation Scenario

Estimated non-carcinogenic HIs at SEAD-57 for the park worker, construction worker, and the recreational child visitor receptors are below the USEPA preferred limit (i.e., 1). Estimated cancer risk levels for the park worker, the construction worker, and the recreational child visitor are all within the USEPA acceptable range (i.e., $1x10^{-4}$ to $1x10^{-6}$)

7.3.2 Residential Scenario

Estimated non-carcinogenic hazard indices for the adult and child residential receptors at SEAD-57 are above the USEPA preferred limit of 1 (see **Appendix B Table 11a**). Estimated cancer risk levels for the adult, child, and lifetime residential receptors at SEAD-57 are within the USEPA acceptable range (i.e., $1x10^{-4}$ to $1x10^{-6}$) for carcinogenic risk. A summary of the estimated risks and hazards is shown below.

Pathway/Receptor	Hazard Index	Cancer Risk
Inhalation of Dust in Ambient Air	3.0E-01	6.9E-07
Ingestion of Soil	3.0E-01	3.7E-06
Intake of Groundwater	6.6E-01	4.4E-05
Dermal Contact to Soil	7,5E-03	5.2E-07
Dermal Contact to Groundwater	1.9E-02	1.0E-06
TOTAL for RESIDENT ADULT	**1.3E00**	**5.0E-05**

Inhalation of Dust in Ambient Air	6.1E-01	3.5E-07
Ingestion of Soil	2.8E00	8.7E-06
Intake of Groundwater	2.3E00	3.8E-05
Dermal Contact to Soil	4.9E-02	8.5E-07
Dermal Contact to Groundwater	3.3E-02	4.4E-07
TOTAL for RESIDENT CHILD	**5.8E00**	**4.9E-05**

Inhalation of Dust in Ambient Air		1.0E-06
Ingestion of Soil		1.2E-05
Intake of Groundwater		8.2E-05
Dermal Contact to Soil		1.4E-06
Dermal Contact to Groundwater		1.5E-06
TOTAL for LIFETIME RESIDENT		**9.8E-05**

The intake of groundwater represents approximately 51% of the adult resident's non-carcinogenic HI and 40% of the child resident's HI. In each case, the distribution of the estimated adult and child HIs show that arsenic represents 43%, antimony 31%, and thallium 26% of the HI estimated. The hazard quotients calculated for the intake of groundwater containing arsenic and antimony are associated with exposure point concentrations (i.e., 3.1 µg/L and 3.0 µg/L, respectively) that are below federal MCLs for drinking water (i.e., 10 µg/L and 6 µg/L, respectively). As such, these values are very conservative and likely overestimate the level of hazard that actually is associated with the consumption of groundwater at the SEAD-57 site. Further, it is the Army contention that the groundwater pathway does not represent a complete exposure pathway as the shallow aquifer that underlies the SEAD-57 site, and most of the Depot, does not yield a sufficient quantity of water to support potable water needs for a full time residential application. Further, an alternative source of potable water exists within the Depot that is derived from a non-groundwater source, making use of the shallow aquifer unnecessary. If use of groundwater is eliminated as a complete exposure pathway at SEAD-57, the HI for the adult resident drops to 6.0E-01 below the preferred limit, while the HI for the child resident drops to 3.4E00.

The ingestion of soil and the inhalation of dust represent equivalent portions (~23%) of the adult resident's HI at SEAD-57. Comparably, the ingestion of soil (48%) and the inhalation of dust (11%) are the next two largest components of the child resident's HI for SEAD-57. The majority (99.9%) of the soil ingestion hazard quotients estimated for the adult and for the child resident are associated with the ingestion of soil that contains ten metal contaminants (i.e., iron, cobalt, manganese, vanadium, arsenic, aluminum, cadmium, thallium, antimony, and copper listed in order of decreasing contribution). Data for these metals are summarized in the table below.

Analyte	EPC (mg/kg)	USEPA RSL (mg/kg)	NYSDEC SCO (mg/kg)	SEDA Soil Aver. (mg/kg)	SEDA Std. Dev. (mg/kg)
Aluminum	14,450	77,000	NA	13,206	4,159
Antimony	0.82	31	NA	2.7	2.2
Arsenic	5.0	0.39	13	5.2	2.8
Cadmium	2.3	70	2.5	0.54	0.74
Cobalt	11	23	NA	11	4
Copper	21	3,100	50	21	8
Iron	24,890	55,000	NA	24,661	6,854
Manganese	679	1,800	1,600	609	335
Thallium	2.6	51	NA	0.26	0.23
Vanadium	26.3	390	NA	21	6
NA = not available					

In each case, exclusive of that for arsenic, the EPC upon which the hazard quotient is based is below the metal's respective USEPA RSL for residential soil. Further in cases where New York has identified unrestricted use SCO values for the metal, the SCO value identified for the metal (including arsenic) is higher than the EPC identified for SEAD-57 soil. Finally, in the majority of cases (all except of copper and thallium, which are minor portions of the overall HI), the EPCs are consistent with background soil concentrations, each being within one standard deviation of the accepted average background concentration found in samples from the area of the Depot. This suggests that the concentrations observed at SEAD-57 are just as likely to be associated with natural soil, and not attributable to contamination that has occurred at the site due to its historic use. Therefore, it is likely that the HIs computed for ingestion of soil at SEAD-57 overestimate the level of non-carcinogenic effect that is likely present for both the adult of the child at SEAD-57. COPC hazard quotients determined for residential SEAD-57 exposures are listed below.

Contributions to Adult Resident's Hazard Index							
Analyte	Soil Ingestion (22.8%)	Dermal Contact Soil (1.0%)	Inhalation of Dust (23.4%)	Ingestion of Groundwater (51.2%)	Dermal Contact Groundwater (1.6%)	Total	Percentage of Total
Aluminum	2.0E-02	7.9E-05	4.7E-02			6.7E-02	5.2%
Antimony	2.8E-03	7.4E-05		2.0E-01	1.2E-02	2.2E-01	17.1%
Arsenic	2.3E-02	2.7E-03		2.8E-01	6.6E-03	3.2E-01	24.4%
Cadmium	6.2E-02	2.5E-05	3.7E-03			9.9E-03	0.8%
Cobalt	4.9E-02	2.0E-04	2.9E-02			7.9E-02	6.1%
Iron	1.1E-01	4.5E-04				1.1E-01	8.8%
Manganese	3.9E-02	3.9E-03	2.2E-01			2.6E-01	20.4%
Thallium	5.4E-03	2.2E-05		1.7E-01	1.4E-03	1.8E-01	13.8%
Vanadium	3.6E-02	5.5E-03				4.2E-02	3.2%
Other COPCs	1.0E-03	9.0E-05				1.1E-03	0.1%
Total	**3.0E-01**	**1.3E-02**	**3.0E-01**	**6.6E-01**	**2.0E-02**	**1.3E00**	**100%**

Contributions to Child Resident's Hazard Index							
Analytes	Soil Ingestion (47.6%)	Dermal Contact Soil (1.5%)	Inhalation of Dust (10.5%)	Ingestion of Groundwater (39.8%)	Dermal Contact Groundwater (0.6%)	Total	Percentage of Total
Aluminum	1.8E-01	5.2E-04	9.6E-02			2.8E-01	4.84%
Antimony	2.6E-02	4.9E-04		7.2E-01	2.1E-02	7.7E-01	13.21%
Arsenic	2.1E-01	1.8E-02		9.9E-01	1.1E-02	1.2E+00	21.26%
Cadmium	5.8E-02	1.6E-04	7.5E-03			6.5E-02	1.13%
Cobalt	4.6E-01	1.3E-03	5.9E-02			5.2E-01	8.96%
Iron	1.1E+00	3.0E-03				1.1E+00	18.32%
Manganese	3.6E-01	2.5E-02	4.5E-01			8.4E-01	14.41%
Thallium	5.1E-02	1.4E-04		6.0E-01	2.4E-03	6.6E-01	11.28%
Vanadium	3.4E-01	3.6E-02				3.7E-01	6.41%
Other COPCs	6.7E-02	5.9E-04	1.9E-09	0.0E+00	0.0E+00	1.0E-02	0.18%
Total	**2.8E+00**	**8.6E-02**	**6.1E-01**	**2.3E+00**	**3.45E-02**	**5.8E00**	**100%**

In both instances, the ingestion of groundwater represents a significant portion of the total hazard index estimated for the adult and child resident. As has been stated, the groundwater pathway for all of the Munitions Response sites is considered incomplete as the shallow aquifer beneath the Depot yields poorly, and is generally inadequate to fulfill domestic use requirements. Further, an alternative, non groundwater derived supply of potable water is available at the Depot. Additionally, the largest component of the groundwater intake HI results from the consumption of groundwater that contains arsenic and antimony at concentrations that are below the federal MCL and below the state's GA standards. These two analytes represent approximately 75% of the hazard index estimated from the ingestion of groundwater. The hazard quotients derived for thallium is associated with an EPC that is above the federal MCL. As such, the actual impact that results from the groundwater conceivably could be overestimated by at least 75% if it were not totally eliminated on the basis that this exposure pathway is incomplete.

The evaluation of the residents' target organ impacts due to exposure to the COPCs is summarized below.

Target Organ or Effect	Estimated HI	Contributing COPCs
Central Nervous System or Neuro Development	Adult, 0.33 | **Child, 1.12**	Aluminum and Manganese
Skin	Adult, 0.32 | **Child, 1.20**	Arsenic
Lungs	Adult, 0.13 | Child, 0.96	Cadmium and Cobalt
Heart	Adult, 0.19 | **Child, 1.62**	Cobalt and Iron
Liver	Adult, 0.30 | **Child, 1.83**	Cadmium, Iron, Thallium
Endocrine Glands	Adult, 0.11 | **Child, 1.10**	Iron
Enzymes	Adult, 0.42 | Child, 0.37	Vanadium
Gastro-intestinal	Adult, 0.41 | **Child, 1.50**	Antimony, Cadmium, Thallium

As is seen, none of the adult resident's target organs are subjected to an HI in excess of 1, however, several of the child's organs are potentially affected at levels in excess of 1. However, each of the effects attributable to exposure to soil, exclusive of that estimated for arsenic results from an EPC that is below state and federal guidance values for residential soil or unrestricted use, and below levels that are typical of background soils. With specific reference to arsenic, the primary exposure pathway noted is through the ingestion of groundwater which is probably not a complete pathway at SEAD-57. Further, the groundwater EPC that causes the elevated hazard quotient is below the federal MCL for this contaminant in drinking water. Therefore, the HIs estimated for the adult at SEAD-57 are within allowable limits, whereas the estimated HIs projected for the child resident can not be distinguished from background levels that could be present at a residential site, and are thus considered overly conservative.

7.3.3 Conclusions

In conclusion, SEAD-57 estimated non-carcinogenic hazard indices for the park worker, the construction worker, and the recreational child visitor are below the USEPA-recommended limit of 1. Furthermore, the projected carcinogenic risk for the park worker, the construction worker, and the recreation child visitor are within the USEPA acceptable range (i.e., $1x10^{-4}$ to $1x10^{-6}$).

The projected carcinogenic risk for the adult, child, and lifetime resident at SEAD-57 are also within the USEPA acceptable range (i.e., $1x10^{-4}$ to $1x10^{-6}$). Estimated non-carcinogenic HIs for the adult and child resident exceed the USEPA preferred limit of 1. However, further evaluation of the adult resident's HI indicates that there are no individual target organs that are stressed at a level in excess of 1, but an equivalent evaluation of the distribution of the child resident's HI still indicates that there are possible impacts in excess of the USEPA's limit of 1. All of the hazard quotients for soil effects, except for those estimated for arsenic, are attributed to soil EPCs that are below federal RSL and state SCO values for residential soil or unrestricted use. Further, all soil EPCs are comparable to background soil concentrations that have been identified in the area of the Depot. Additionally, with reference to the estimated hazard quotient for ingestion of groundwater which is driven by the presence of arsenic and antimony, both of these compounds are contained at concentrations that are below federal MCLs and state GA groundwater standards. Therefore, the Army contends that the non-carcinogenic hazard indices projected for the child resident are comparable to those that would be experience in any residential area and are overly conservative.

7.4 SEAD-002-R-01 (EOD-2)

7.4.1 Conservation/Recreational Scenario

Receptor	Hazard Index	Cancer Risk
Park Worker	3.8E-01	3.6E-06
Construction Worker	1.1E00	5.4E-07
Recreational Child Visitor	2.0E-01	4.3E-07

Estimated non-carcinogenic HIs for the park worker and recreational child visitor receptors at EOD-2 are below the USEPA-preferred limit (i.e., 1); the estimated HI for the construction worker receptor is above the USEPA limit. Estimated cancer risk levels for the construction worker, park worker, and recreational child visitor

receptors at EOD-2 are all within or below the USEPA acceptable range (i.e., $1x10^{-4}$ to $1x10^{-6}$) for carcinogenic risk.

Two exposure pathways, ingestion of soil (62%) and inhalation of dust in ambient air (36%) represent approximately 98% of the elevated HI calculated for the construction worker. The distribution of the contributing COPCs to the elevated HI for the construction worker is summarized below.

Contributions to Construction Worker's Hazard Index					
Analyte	**Soil Ingestion (62.0%)**	**Dermal Contact Soil (1.9%)**	**Inhalation of Dust (36.1%)**	**Total**	**Percentage of Total**
Methyl cyclohexane			4.2E-12	4.2E-12	0.0%
Chrysene	4.7E-03	1.8E-03		6.5E03	0.6%
Aluminum	5.2E-02	1.6E-04	3.7E-02	8.9E-02	7.9%
Arsenic	3.9E-02	3.5E-03		4.2E-02	3.7%
Cobalt	1.3E-01	4.0E-04	2.3E-02	1.6E-01	13.8%
Iron	2.7E-01	8.1E-04		2.7E-01	23.9%
Manganese	2.0E-01	1.5E-02	3.5E-01	5.7E-01	50.1%
Total	**7.0E-01**	**2.2E-02**	**4.1E-01**	**1.1E00**	**100%**

The allocation of the construction worker's elevated HI among target organs or systems is summarized below. As is noted, none of the affected target organs or systems listed show evidence of hazards in excess of the USEPA limit of 1. Therefore, the apparent elevated HI for the construction worker is considered a conservative estimate and no unacceptable level of hazard is present for the construction worker at SEAD-002-R-01 EOD Area 2.

Allocation of Construction Worker's HI to Target Organs/Systems		
Target Organ or Effect	**Estimated HI**	**Contributing COPCs**
Central Nervous System or Neuro Development	0.44	Aluminum and Manganese
Skin	0.04	Arsenic
Lungs	0.16	Cobalt
Heart	0.43	Cobalt and Iron
Liver	0.27	Iron
Endocrine Glands	0.27	Iron

7.4.2 Residential Scenario

Estimated cancer risk levels for the adult, child, and lifetime resident at EOD-2 are within the USEPA preferred range (i.e., $1x10^{-4}$ to $1x10^{-6}$).Estimated non-carcinogenic hazard indices for the adult and child residential receptors at EOD-2 are above the USEPA preferred limit of 1. The distribution of impacts via the exposure of the adult and child residents to soil at EOD is summarized below.

Pathway/Receptors	Hazard Index	Cancer Risk
Inhalation of Dust in Ambient Air	1.1E+00	1.3E-06
Ingestion of Soil	3.0E-01	4.4E-06
Dermal Contact to Soil	1.2E-02	1.3E-06
TOTAL for RESIDENT ADULT	**1.4E+00**	**7.0E-06**

Inhalation of Dust in Ambient Air	2.2E+00	6.8E-07
Ingestion of Soil	2.8E+00	1.0E-05
Dermal Contact to Soil	8.1E-02	2.1E-06
TOTAL for RESIDENT CHILD	**5.1E+00**	**1.0E-05**

Inhalation of Dust in Ambient Air		2.0E-06
Ingestion of Soil		1.5E-05
Dermal Contact to Soil		3.3E-06
TOTAL for LIFETIME RESIDENT		**2.0E-05**

Contributions to the adult and child resident's HI by the COPCs identified at the site are summarized below and the allocation of these to affected target organs or systems is provided in the third table that is below the COPC allocation summaries.

Contributions to Adult Resident's Hazard Index					
Analyte	Soil Ingestion (21.1%)	Dermal Contact Soil (0.9%)	Inhalation of Dust (78.0%)	Total	Percentage of Total
Methyl cyclohexane			1.1E-11	1.1E-11	0.0%
Chrysene	2.0E-03	1.0E-03		3.0E-03	0.2%
Aluminum	2.2E-02	8.8E-05	9.9E-02	1.2E-01	8.6%
Arsenic	1.6E-02	2.0E-03		1.8E-02	1.3%
Cobalt	5.6E-02	2.2E-04	6.3E-02	1.2E-01	8.5%
Iron	1.1E-01	4.6E-04		1.1E-01	8.2%
Manganese	8.6E-02	8.6E-03	9.3E-01	1.0E00	73.2%
Total	**3.0E-01**	**1.2E-02**	**1.1E00**	**1.4E-02**	**100%**

Contributions to Child Resident's Hazard Index					
Analyte	**Soil Ingestion (54.6%)**	**Dermal Contact Soil (1.6%)**	**Inhalation of Dust (43.8%)**	**Total**	**Percentage of Total**
Methyl cyclohexane			2.3E-11	2.3E-11	0.0%
Chrysene	1.8E-02	6.7E-03		2.5E-02	0.5%
Aluminum	2.1E-01	5.8E-04	2.0E-01	4.1E-01	8.0%
Arsenic	1.5E-01	1.E-02		1.7E-01	3.3%
Cobalt	5.2E-01	1.5E-03	1.3E-01	6.5E-01	12.8%
Iron	1.1E-00	3.0E-03		1.1E00	21.1%
Manganese	8.1E-01	5.6E-02	1.9E00	2.8E00	54.3%
Total	**2.8E00**	**8.1E-02**		**5.1E00**	**100%**

Allocation of Adult and Child Resident HI to Target Organs/Systems		
Target Organ or Effect	**Estimated HI**	**Contributing COPCs**
Central Nervous System or Neuro Development	**Adult, 1.12 | Child, 3.21**	Aluminum and Manganese
Skin	Adult, 0.18 | Child, 0.17	Arsenic
Lungs	Adult, 0.12 | Child, 0.65	Cobalt
Heart	Adult, 0.23 | **Child, 1.75**	Cobalt and Iron
Liver	Adult, 0.11 | **Child, 1.10**	Iron
Endocrine Glands	Adult, 0.11 | **Child, 1.10**	Iron

The summary above suggests that hazard indices in excess of USEPA's limit of 1 are estimated for the adult's and child's central nervous systems, and for the child's heart, liver, and endocrine glands. The largest components of the hazard quotients are associated with soil that contains aluminum, cobalt, iron, and manganese. The soil EPCs generating the elevated hazard indices are summarized below.

Analyte	**EPC (mg/kg)**	**USEPA RSL (mg/kg)**	**NYSDEC SCO (mg/kg)**	**SEDA Soil Avg. (mg/kg)**	**SEDA Std. Dev. (mg/kg)**
Aluminum	16,097	77,000	NA	13,206	4,159
Cobalt	12	23	NA	11	4
Iron	25,037	55,000	NA	24,661	6,854
Manganese	1,512	1,800	1,600	609	335

Manganese is the COPC that is the largest contributor to both the adult's and child's elevated HI. Review of the EPC for manganese at EOD Area 2 suggests that the value used is somewhat elevated compared to soil concentrations found at other Munitions Response AOCs and compared to regional background, but the EPC is still below the concentrations identified as acceptable by the USEPA for residential soil and by the state for unrestricted use. The EPC for EOD Area 2 is derived from a sample set that consists of 12

values, of which two (i.e., 2,770 mg/kg and 859 mg/kg) contain manganese at a level that is above the regional background average value. While the average concentration derived from the 12 data points is slightly above the average background levels (648 mg/kg versus 609 mg/kg), the unusual distribution of concentrations in the data set causes the recommended upper confidence limit value to be higher than normal.

Inhalation of dusts containing manganese is also the largest individual hazard quotient estimated for both the adult and child resident's HI. As has been discussed before, the inhalation hazard quotient for manganese is based on an Rfc that is derived from an industrial study of battery manufacturing workers that were exposed to manganese dioxide. While soil may contain some amount of manganese dioxide, it is unlikely that all manganese found exists solely in the form of manganese dioxide. Furthermore the Rfc derived from this study is 4,000 times more stringent than the ACGIH's recommended TLV for manganese in industrial applications which further highlights the extremely conservative nature of this calculation.

With reference to the other major COPCs (i.e., aluminum, cobalt, and iron), each of these is found in the soil at EOD-2 at concentrations that are below USEPA residential soil RSL guidance values, and at concentrations that are consistent with regional background levels, each being within one standard deviation of the accepted average background concentration found in samples from the Depot. This suggests that the concentrations observed at EOD-2 are just as likely to be associated with natural soil, and not attributable to contamination that has occurred at the site due to its historic use.

7.4.3 Conclusion

Estimated carcinogenic risk for conservation/recreation receptors (i.e., parker worker, construction worker, and recreation child visitor) and residential/resort receptors (adult, child and lifetime resident) are within the USEPA acceptable range (i.e., $1x10^{-4}$ to $1x10^{-6}$). Elevated non-carcinogenic HIs are estimated for the construction worker and the adult and child resident receptors but the EPCs leading to these results are generally lower than USEPA RSLs for residential soil and applicable state SCO guidance values. Specific target organs or systems which may be affected are the central nervous systems for the adult and child resident, and the child's heart, liver and endocrine systems. However, each of the identified components of the elevated HIs from contaminant levels that are consistent with background concentrations or for contaminants where there is a significant level of uncertainty associated with the reference dose used. Therefore, the elevated non-carcinogenic hazards are believed to overestimate the hazards that actually exist at EOD-2.

7.5 SEAD-002-R-01 (EOD-3)

7.5.1 Conservation/Recreational Scenario

Estimated non-carcinogenic HIs for the park worker, construction worker, and recreational child visitor receptors at EOD-3 are below the USEPA limit of 1. Estimated cancer risk levels for the construction worker, park worker, and recreational child visitor receptors at EOD-3 are below the USEPA acceptable range (i.e., $1x10^{-4}$ to $1x10^{-6}$) for carcinogenic risk.

Receptor	Hazard Index	Cancer Risk
Park Worker	2.3E-01	2.1E-06
Construction Worker	7.3E-01	3.5E-07
Recreational Child Visitor	1.3E-01	2.7E-07

7.5.2 Residential Scenario

The estimated non-carcinogenic HI for the adult residential receptor at EOD-3 is below the USEPA limit of 1; the estimated HI for the child resident at EOD-3 is above 1. Estimated cancer risk levels for the adult and child residential receptors at EOD-3 are within the acceptable range (i.e., $1x10^{-4}$ to $1x10^{-6}$) for carcinogenic risk.

Pathway/Receptor	Hazard Index	Cancer Risk
Inhalation of Dust in Ambient Air	5.5E-01	1.2E-06
Ingestion of Soil	2.2E-01	3.0E-06
Dermal Contact to Soil	6.4E-03	3.6E-07
TOTAL for RESIDENT ADULT	**7.8E-01**	**4.6E-06**

Inhalation of Dust in Ambient Air	1.1E+00	6.0E-07
Ingestion of Soil	2.0E+00	7.0E-06
Dermal Contact to Soil	4.2E-02	5.9E-07
TOTAL for RESIDENT CHILD	**3.2E+00**	**8.2E-06**

Inhalation of Dust in Ambient Air		1.9E-06
Ingestion of Soil		1.0E-05
Dermal Contact to Soil		9.5E-07
TOTAL for LIFETIME RESIDENT		**1.3E-05**

Contributions to the child resident's HI by the COPCs identified at the site are summarized below and the allocation of these to affected target organs or systems is provided below the initial COPC analysis.

Contributions to Child Resident's Hazard Index					
	Soil Ingestion (63.7%)	Dust Inhalation (35%)	Dermal Contact (1.3%)	Total	Percentage of Total
Methyl Cyclohexane		2.9E-11		2.92E-11	0.0%
Aluminum	2.0E-01	2.1E-01	5.6E-04	4.09E-01	12.7%
Arsenic	1.8E-01		1.5E-02	1.97E-01	6.1%
Cobalt	4.1E-01	1.1E-01	1.1E-03	5.14E-01	16.0%
Iron	9.4E-01		2.6E-03	9.46E-01	29.4%
Manganese	3.2E-01	8.1E-01	2.2E-02	1.15E00	35.8%
Total	**2.05E00**	**1.12E00**	**4.20E-02**	**3.22E00**	**100%**

Target Organ or Effect	Estimated HI	Contributing COPCs
Central Nervous System or Neuro Development	**Child, 1.55**	Aluminum and Manganese
Skin	Child, 0.20	Arsenic
Lungs	Child, 0.51	Cobalt
Heart	**Child, 1.46**	Cobalt and Iron
Liver	Child, 0.95	Iron
Endocrine Glands	Child, 0.95	Iron

The summary of potential effects to target organs or systems suggests that hazard indices in excess of USEPA's preferred limit of 1 are estimated for child's central nervous systems and for the heart. The largest components of the identified hazard quotients are associated with soil that contains aluminum, cobalt, iron, and manganese. The soil EPCs generating the elevated hazard indices are summarized below.

Analyte	EPC (mg/kg)	RSL (mg/kg)	NYSDEC SCO (mg/kg)	SEDA Soil Avg. (mg/kg)	SEDA Std. Dev. (mg/kg)
Aluminum	15,559	77,000	NA	13,206	4,159
Cobalt	9.5	23	NA	11	4
Iron	22,138	55,000	NA	24,661	6,854
Manganese	600	1,800	1,600	609	335

As is noted, the EPC for each of the identified metals is below its listed USEPA RSL for residential soil. The EPC for manganese is also below its respective New York SCO value, and the EPC used for each of the metals generally agrees with the background concentrations at the Depot. The Army reiterates that the hazard quotient derived for manganese is overly conservative as it is based on inhalation of manganese dioxide, which is not the only form of manganese that is likely to be found at the site. Therefore, it is the Army's contention that the observed risk associated with metals at EOD-3 are due to prevailing background conditions and are can not be distinguished with effects that may be associated with the natural setting at the Depot.

7.5.3 Conclusion

It is the Army's conclusion that the environmental conditions that remain at EOD-3 pose no unacceptable non-carcinogenic hazards nor carcinogenic risks to conservation / recreational receptors or residential / resort receptors.

7.6 SEAD-007-R-01 (Grenade Range)

7.6.1 Conservation/Recreational Scenario

Estimated non-carcinogenic His for the park worker, construction worker, and recreational child visitor receptors at the Grenade Range are below the USEPA limit of 1. Estimated cancer risk levels for the

construction worker, park worker, and recreational child visitor receptors at the Grenade Range are within or below the USEPA acceptable range (i.e., $1x10^{-4}$ to $1x10^{-6}$) for carcinogenic risk.

Receptor	Hazard Index	Cancer Risk
Park Worker	2.6E-01	2.1E-06
Construction Worker	8.2E-01	3.2E-07
Recreational Child Visitor	1.4E-01	2.6E-07

7.6.2 Residential Scenario

The estimated non-carcinogenic HI for the adult residential receptor at the Grenade Range is below the USEPA preferred limit for non-carcinogenic risk; the child resident's estimated non-carcinogenic HI at the Grenade Range is above the USEPA limit of 1. Estimated cancer risk levels for the adult and child residential receptors at the grenade range are within and below the USEPA acceptable range (i.e., $1x10^{-4}$ to $1x10^{-6}$).

Pathway/Receptor	Hazard Index	Cancer Risk
Inhalation of Dust in Ambient Air	7.0E-01	1.6E-06
Ingestion of Soil	2.3E-01	2.8E-06
Dermal Contact to Soil	6.5E-03	3.3E-07
TOTAL for RESIDENT ADULT	**9.3E-01**	**4.7E-06**

Inhalation of Dust in Ambient Air	1.4E+00	8.0E-07
Ingestion of Soil	2.2E+00	6.5E-06
Dermal Contact to Soil	4.2E-02	5.4E-07
TOTAL for RESIDENT CHILD	**3.6E+00**	**7.8E-06**

Inhalation of Dust in Ambient Air		2.4E-06
Ingestion of Soil		9.2E-06
Dermal Contact to Soil		8.8E-07
TOTAL for LIFETIME RESIDENT		**1.3E-05**

Five metals contribute to the estimated elevated HI for the child. Their estimated individual contributions are summarized below by exposure pathway.

Contributions to Child Resident's Hazard Index					
Analyte	**Soil Ingestion (59.8%)**	**Dust Inhalation (39.1%)**	**Dermal Contact (1.2%)**	**Total**	**Percentage of Total**
Aluminum	2.0E-01	2.5E-01	5.6E-04	4.55E-01	12.6%
Arsenic	1.7E-01		1.4E-02	1.82E-01	5.0%
Cobalt	4.7E-01	1.5E-01	1.3E-03	6.21E-01	17.2%
Iron	9.8E-01		2.8E-03	9.88E-01	27.3%
Manganese	3.4E-01	1.0E01	2.4E-02	1.37E00	37.9%
Total	**2.16E00**	**1.41E00**	**4.23E-02**	**3.62E00**	**100%**

The ingestion of soil represents approximately 60% of the HI for the child residential receptor, while the inhalation of dust accounts for approximately 39% of the estimated HI. As discussed for each AOC, five metal COPCs (aluminum, arsenic, cobalt, iron, and manganese) account for the ingestion hazard. As shown in the table below, each of the EPCs, exclusive of the one for arsenic, are below the USEPA RSLs for residential soil. The EPCs for arsenic and manganese are also below their respective NYS SCO values. Finally, as has also been seen at the other AOCs, the concentrations found at the Grenade Range are in general agreement with the background concentrations found at the Depot.

Analyte	**EPC (mg/kg)**	**RSL (mg/kg)**	**NYSDEC Soil Obj. (mg/kg)**	**SEDA Soil Avg. (mg/kg)**	**SEDA Std. Dev. (mg/kg)**
Aluminum	15,771	77,000	NA	13,206	4159
Arsenic	3.9	0.39	13	5.2	2.8
Cobalt	11.1	23	NA	11	4
Iron	23,107	55,000	NA	24,661	6854
Manganese	632	1,800	1,600	609	335

Target organs and systems potential impacted by the exposure of soil containing the identified concentrations are summarized below.

Target Organ or Effect	**Estimated HI**	**Contributing COPCs**
Central Nervous System or Neuro Development	**Child, 1.82**	Aluminum and Manganese
Skin	Child, 0.18	Arsenic
Lungs	Child, 0.62	Cobalt
Heart	**Child, 1.61**	Cobalt and Iron
Liver	Child, 0.99	Iron
Endocrine Glands	Child, 0.99	Iron

Potential effects are again estimated for the child central nervous system and the heart, but in each case these result from the exposure to soil that contains metals at concentrations that are consistent with the regional background. Therefore it is the Army's position that the child resident HIs overestimate the level of hazard that is likely to remain at the site.

7.6.3 Conclusion

Environmental conditions at the Grenade Range are not believed to pose any inordinate level of hazard or risk to conservation/recreation or residential receptors. The elevated level of hazard estimated for the resident child results can be attributed to concentrations of contaminants that are generally consistent with regional background concentrations and that are generally below USEPA RSLs and NYS SOC values.

7.7 SEAD-70

7.7.1 Conservation/Recreational Scenario

Receptor	Hazard Index	Cancer Risk
Park Worker	2.7E-01	4.1E-06
Construction Worker	8.5E-01	6.6E-07
Recreational Child Visitor	1.6E-01	5.3E-07

Estimated non-carcinogenic His for the park worker, construction worker, and recreational child visitor receptors at SEAD-70 are all below the USEPA limit of 1. Estimated cancer risk levels for the construction worker, park worker, and recreational child visitor receptors at SEAD-70 are all within or below the USEPA acceptable range (i.e., $1x10^{-4}$ to $1x10^{-6}$) for carcinogenic risk.

7.7.2 Residential Scenario

The estimated non-carcinogenic HI for the adult residential receptor at SEAD-70 is below the USEPA limit of 1; the estimated HI for the child residential receptor at SEAD-70 is above 1. Estimated cancer risk levels for the adult, child, and lifetime residential receptors at SEAD-70 are within the USEPA accepted range (i.e., $1x10^{-4}$ to $1x10^{-6}$).

Pathway/Receptor	Hazard Index	Cancer Risk
Inhalation of Dust in Ambient Air	4.3E-01	1.5E-06
Ingestion of Soil	2.6E-01	6.0E-06
Intake of Groundwater	2.0E-01	0.0E+00
Dermal Contact to Soil	5.4E-03	7.2E-07
Dermal Contact to Groundwater	4.6E-03	0.0E+00
TOTAL for RESIDENT ADULT	**8.9E-01**	**8.2E-06**

Inhalation of Dust in Ambient Air	8.7E-01	7.8E-07
Ingestion of Soil	2.4E+00	1.4E-05
Intake of Groundwater	6.8E-01	0.0E+00
Dermal Contact to Soil	3.5E-02	1.2E-06
Dermal Contact to Groundwater	7.9E-03	0.0E+00
TOTAL for RESIDENT CHILD	**4.0E+00**	**1.6E-05**

Inhalation of Dust in Ambient Air		2.3E-06
Ingestion of Soil		2.0E-05
Intake of Groundwater		0.0E00
Dermal Contact to Soil		1.9E-06
Dermal Contact to Groundwater		0.0E00
TOTAL for LIFETIME RESIDENT		**2.4E-05**

The apportionment of the child's elevated HI by the five COPCs at SEAD-70 is summarized in the table below.

Contributions to Child Resident's Hazard Index							
	Soil Ingestion (59.7%)	**Dermal Contact Soil (1.3%)**	**Inhalation of Dust (21.7%)**	**Ingestion of Groundwater (17.0%)**	**Dermal Contact Groundwater (0.2%)**	**Total**	**Percentage of Total**
Aluminum	1.6E-01	4.4E-04	1.6E-01			3.16E-01	7.9%
Arsenic	3.6E-01	3.0E-02				3.92E-01	9.8%
Cobalt	5.1E-01	1.4E-03	1.3E-01			6.34E-01	15.8%
Iron	1.1E00	3.1E-03		6.8E-01	7.9E-03	1.82E00	45.2%
Manganese	2.5E-01	1.7E-02	5.9E-01			8.55E-01	21.3%
Total	**2.40E00**	**5.27E-02**	**8.73E-01**	**6.84E-01**	**7.85E-03**	**4.01E00**	**100%**

The potential effects to the child's target organs or systems are summarized below. As is seen, elevated effects are projected for the child's central nervous system, heart, liver and endocrine glands.

Target Organ or Effect	**Estimated HI**	**Contributing COPCs**
Central Nervous System or Neuro Development	**Child, 1.17**	Aluminum and Manganese
Skin	Child, 0.39	Arsenic
Lungs	Child, 0.63	Cobalt
Heart	**Child, 2.45**	Cobalt and Iron
Liver	**Child, 1.82**	Iron
Endocrine Glands	**Child, 1.82**	Iron

Three exposure pathways, ingestion of soil, inhalation of dust in ambient air, and intake of groundwater account for 98% of the HI for the child receptor. The hazard quotients estimated due to exposure to groundwater via either ingestion or dermal contact are derived from a sample set that consists of four samples of groundwater. Each of these samples was collected during the ESI with a bailer. The iron EPC (2.14 mg/L) used for groundwater is the maximum concentration measured in the groundwater which was found in the sample that contained the highest level of turbidity (325 NTUs). Each of the other three samples contained lower levels of turbidity (less than 50 NTUs) and all of the other iron concentrations in groundwater were below the state's GA standard of 300 µg/L. Furthermore, as has been discussed previously, the shallow groundwater aquifer underlying the Seneca site is not productive enough to provide water for domestic purposes, so this exposure pathway is considered incomplete.

The ingestion of soil represents approximately 60% of the HI estimated for the child receptor, while the inhalation of dust accounts for approximately 22% of the estimated HI. As discussed for each of the other AOCs, five metal COPCs (aluminum, arsenic, cobalt, iron, and manganese) account for the ingestion hazard. As shown in the table below, each of the EPCs, exclusive of the one for arsenic, are below the USEPA RSLs for residential soil. The EPCs for arsenic and manganese are also below their respective NYS SCO values. Further, the EPCs for aluminum, cobalt, iron, and manganese are consistent with background soil concentrations at the Depot, each being within one standard deviation of the accepted average background concentration found in samples from the Depot. Arsenic was found at an EPC that is slightly above one standard deviation more than the Depot's average, but at a concentration that is within the range of concentrations that are in the Depot's background dataset. Furthermore, the estimated arsenic contribution to the child's HI is not at a level in excess of the USEPA threshold of 1 at the target organ level.

Analyte	EPC (mg/kg)	RSL (mg/kg)	NYSDEC Soil Obj. (mg/kg)	SEDA Soil Avg. (mg/kg)	SEDA Std. Dev. (mg/kg)
Aluminum	12,400	77,000	NA	13,206	4,159
Arsenic	8.5	0.39	13	5.2	2.8
Cobalt	12	23	NA	11	4
Iron	26,300	55,000	NA	24,661	6,854
Manganese	465	1,800	1,600	609	335

7.7.3 Conclusion

It is the Army's position that environmental conditions at SEAD-70 do not pose any inordinate level of hazard or risk to conservation/recreation or residential receptors. The elevated level of hazard estimated for the resident child is partially attributable to concentrations that are consistent with regional background concentrations of metals in soils and that are generally below USEPA RSL and NYS SCO values. Further, the apparent hazard for the child resident is associated with an elevated iron concentration in groundwater that was collected from a monitoring well with a bailer. This sample contained significantly more iron than samples from other SEAD-70 wells that contained iron concentrations below 300 µg/L.

7.8 Risk Characterization Results for Lead Exposures

Risk characterization for exposure to lead was conducted based on a comparison between the estimated blood lead level and the target mean blood level (PbB) of concern. Adult blood lead level was estimated based on the USEPA Adult Lead Model (version 5/19/05). Child blood lead level was estimated based on the USEPA, IEUBK model (IEUBK win v1.1 build 9). The target PbB level of concern is 10.0 µg/dL for a child and 25 µg/dL for an adult (USEPA, 1994, 2003d). Lead was identified as a COPC in soil at SEAD-46 and SEAD-57. This section presents the results of the quantitative and qualitative assessment of the risk from lead exposure at the sites.

7.8.1 SEAD-46

The concentrations of lead in the blood of adults and of children exposed to soil at SEAD-46 are presented in Attachment-A, Table 12 and Attachment-A, Table 13, respectively. The maximum estimated concentration of lead in the blood of adults exposed to soil at SEAD-46 is 1.5 µg/dL; the maximum concentration of lead in the blood of children is 1.3 µg/dL.

7.8.2 SEAD-57

The concentrations of lead in the blood of adults and of children exposed to soil at SEAD-46 are presented in Attachment-A, Table 12 and Table 13, respectively. The estimated concentrations of lead in the blood of adults exposed to soil at SEAD-46 are equal to or less than 1.6 µg/dL; the concentrations of lead in the blood of children are equal to or less than 1.2 µg/dL.

8. Uncertainties

8.1 General

All risk assessments involve well-founded assumptions and professional judgment to varying degrees. Naturally, "assumptions" and "judgment" imply uncertainty in the final risk estimates. From data collection through risk characterization, there is uncertainty associated with each component of this risk assessment. Parsons addressed these uncertainties by consistently making conservative assumptions with respect to risk and exposure parameters. As a result, this risk assessment provides conservative estimates of the risk to receptors at all five AOCs, and it is unlikely that this assessment underestimates that risk.

8.2 Manganese Toxicity Value

The primary site-specific uncertainty associated with this risk assessment is the evaluation of the hazard index for manganese (i.e., the manganese toxicity value). This is a significant uncertainty since the HI for the inhalation of manganese-contaminated dust accounts for 70% or more of the HIs for the inhalation of dust in ambient air at all AOCs.

To obtain the HIs for inhalation of manganese-contaminated dust, Parsons employed calculations using a Reference Concentration (RfC) for chronic inhalation of manganese-contaminated dust (see section 6). The RfC for manganese used by Parsons was derived in a USEPA (1998) study that investigates the inhalation of manganese dioxide dust. The RfC value promulgated by the USEPA is an uncertain number; the USEPA assigns the RfC an uncertainty factor of 1000, reflecting a low degree of confidence in its value. In addition to the USEPA uncertainty in the RfC, it is unlikely that all of the identified manganese in the soil at the five AOCs exists as manganese dioxide. The exact composition of the manganese in the soil at the AOCs is unknown, but it is known that of the source of manganese at the five AOCs is natural soil.

Lastly, it is important to note that the inhalation reference dose used in this risk assessment is 4000 times lower than the American Conference of Governmental Industrial Hygienists' (ACGIH's) threshold limit value, which is the concentration of a substance to which workers in industrial situations can be exposed without adverse effects. This fact further emphasizes the conservative nature of the RfC used in this risk assessment.

8.3 Groundwater

8.3.1 Analysis of Groundwater

It is uncertain whether or not future occupants at the Depot will ever contact groundwater at any of the AOCs. Three groundwater exposure pathways were analyzed nevertheless, as a conservative approach to ascertaining the potential risk. However, it is unlikely that groundwater would ever be used as a potable water source at the Depot since the aquifer is likely not sufficiently productive and an alternate source of potable water at the Depot already exists (see section 5.2 Receptors, Exposure Pathways, and Exposure profiles). The inclusion of groundwater analysis further emphasizes the conservative nature of this risk assessment.

8.3.2 Sample Methods

Another specific uncertainty associated with this risk assessment is the use or disuse of groundwater sample results that were obtained during the ESI sampling event for SEAD-57. Groundwater sample results collected during all ESI sampling events were obtained using bailers instead of low-flow sampling procedures like all other groundwater samples in this risk assessment. Bailers tend to create more turbidity in samples than do low-flow sampling procedures, and, as such, metal concentrations in samples obtained with bailers tend to be greater than metal concentrations obtained with low-flow sampling procedures. The uncertainty over metal concentrations used in this risk assessment is limited to the calculations for SEAD-57; nevertheless, Parsons evaluated both bailer-obtained and low-flow-obtained samples as a conservative approach.

9. Conclusion

The evaluation of potential cancer risks at the AOCs suggests that there is a potential risk to the lifetime resident at SEAD-46; there are no carcinogenic risks estimated for the adult or child resident, or conservation/recreational receptors (park worker, construction worker, recreational child visitor) at SEAD-46. Further examination of the lifetime residents' cancer risk indicates that it is derived from the ingestion of groundwater containing arsenic at a concentration that is below the federal MCL for drinking water and is thus suspected to be an overly conservative number. Additionally, groundwater at SEAD-46 and at all of the other Munitions Response AOCs is unlikely to be used as a potable water source since available information indicates that the shallow aquifer that underlies the Depot yields poorly and groundwater levels frequently drop due to inaccessible levels seasonal fluctuations. Furthermore, an alternative municipal potable water supply exists at the Depot that is derived from a non-groundwater source (Lake Seneca). There are no unacceptable levels of cancer risk determined for conservation/recreational or residential receptors at any of the other AOCs evaluated.

The evaluation of non-carcinogenic hazard levels suggests that there are a number of instances where non-carcinogenic hazard levels in excess of the USAEAP preferred limit of 1 are estimated for the construction worker, the adult resident, and the child resident. In many cases, the evaluation of potential effects to target organs or systems of the body indicate that such risks for the construction worker and adult resident are reduced to below 1, but the child resident levels remain at levels in excess of 1. However, in each of these instances, the non-carcinogenic hazard indices are caused by concentrations of metal COPCs in the soil which are below USEPA residential soil RSLs and where available, below New

York SCOs for unrestricted use. Furthermore, in all cases the EPC concentrations are consistent with background soil concentrations. Therefore potential adverse impacts from the Army's historic use of the land can not be separated from natural sources.

Based on the information presented above it is the Army's contention that none of the Munitions Response sites (SEAD-46, SEAD-57, SEAD-002-R-01 [EOD Area 2 or EOD Area 3], SEAD-07-R-001, or SEAD-70) contain residual contamination at levels that pose unacceptable risk or level of hazard to potential conservation/recreational or residential receptors.

10. References

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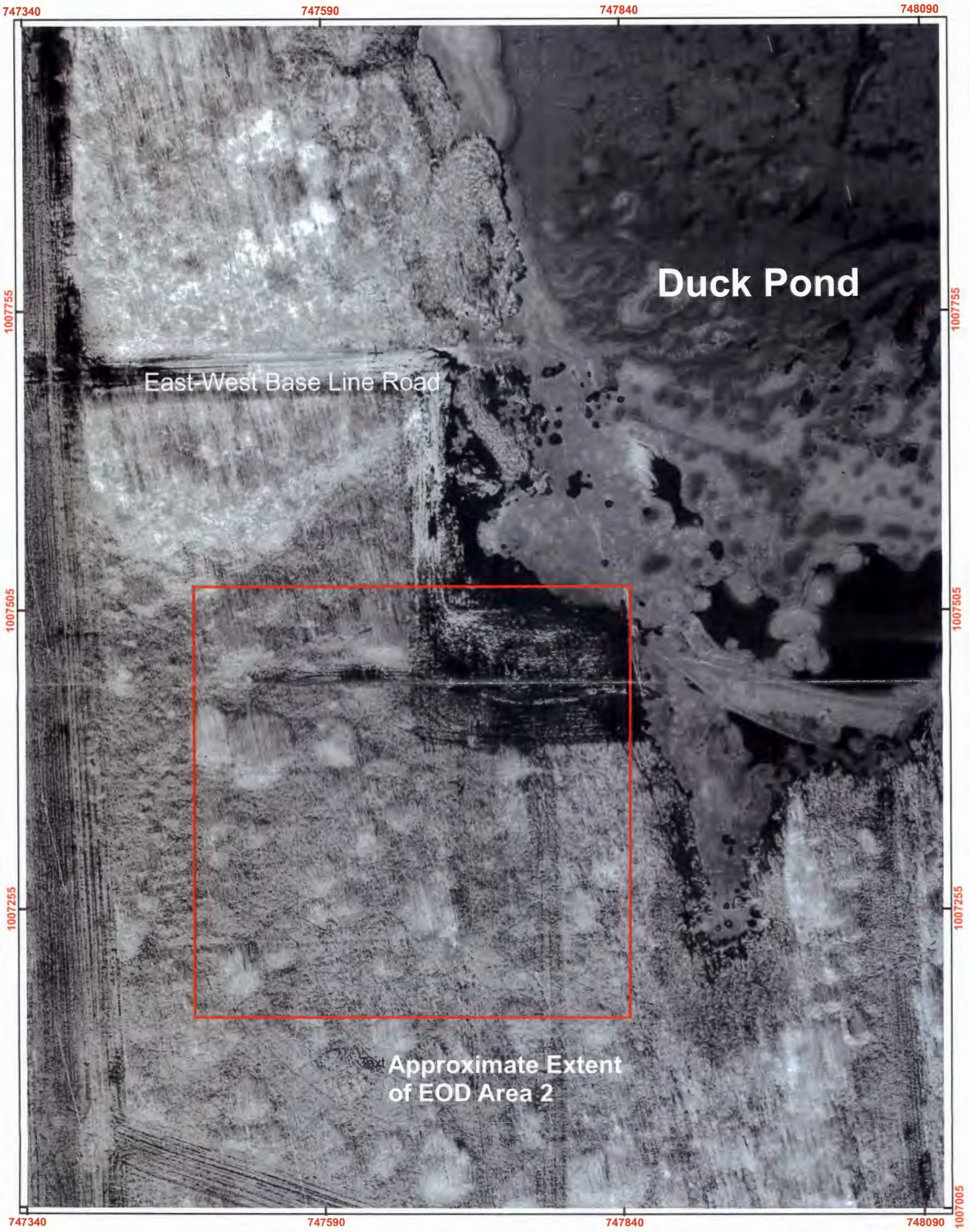
Figures



EOD Area 2 Limit of Work

997750
748750
Grid Coordinates
(New York State Plane, Central)

N
W
E
S

80 40 0 80 Feet

PARSONS

SENECA ARMY DEPOT ACTIVITY
Munitions Response and CERCLA Closure

FIGURE 4
SEAD-002-R-01, Explosive Ordnance
Detonation Area 2

749123 749373 749623 749873

1008005

East West Base Line Road

1007755

EOD Area 3

1007505

Approximate Extent
of EOD Area 3

1007255

SEAD 46
Backstop
Berm

1007005

1007250

749123 749373 749623 749873

1006755

EOD Area 3 Limit of Work

997750
748750 Grid Coordinates
(New York State Plane, Central)

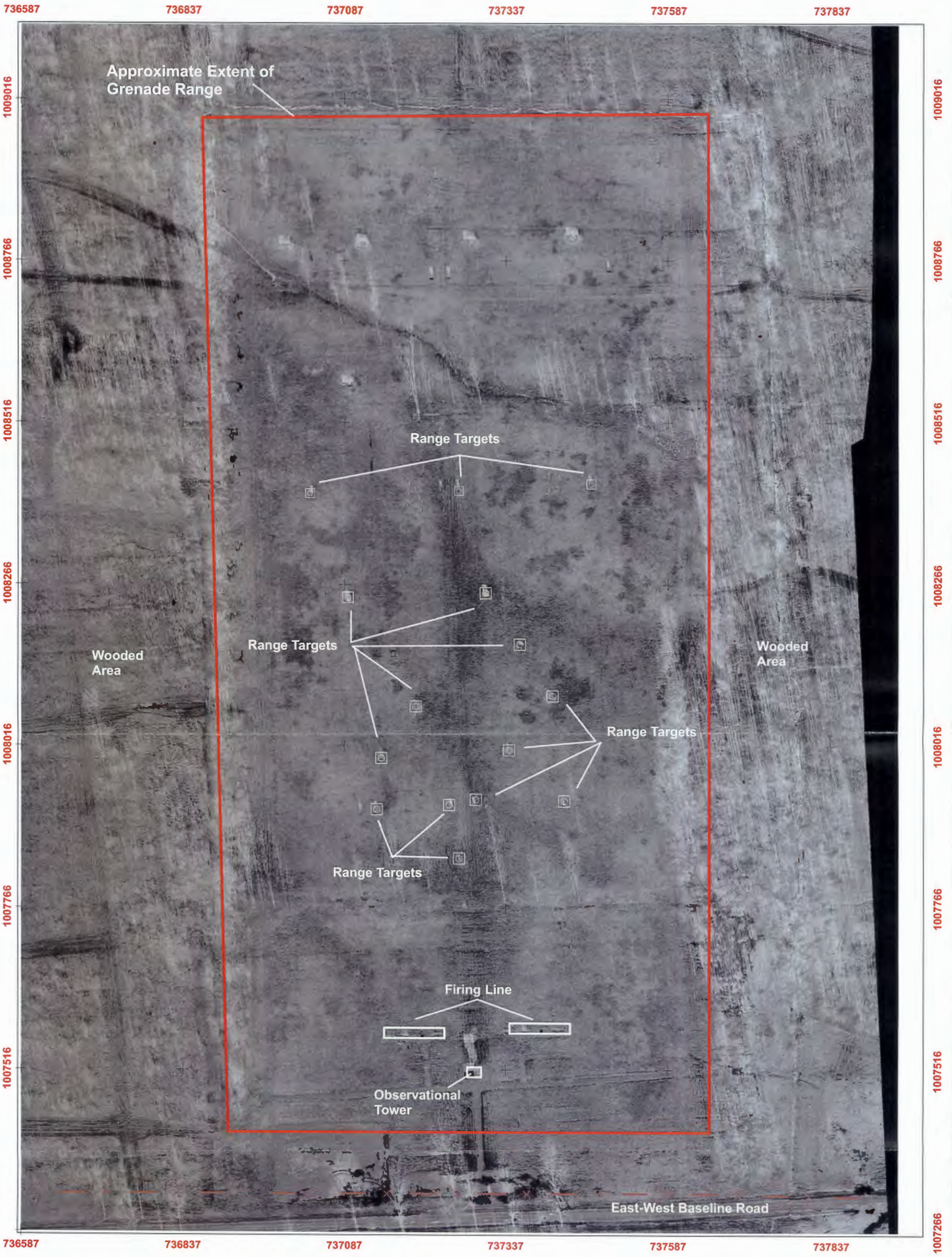
N
W E
S

50 25 0 50 100 150 Feet

PARSONS

SENECA ARMY DEPOT ACTIVITY
Munitions Response and CERCLA Closure

FIGURE 5
SEAD-002-R-01, Explosive Ordnance
Detonation Area 3



Grenade Range Limit of Work

Location of Target

Firing Point and Observation Tower

997750 + Grid Coordinates (New York State Plane, Central)
748750

N
W E
S

110 55 0 110 220 Feet

PARSONS

SENECA ARMY DEPOT ACTIVITY
Munitions Response and CERCLA Closure

FIGURE 6
SEAD-007-R-01, Grenade Range

Attachment A

SEAD-46 – 3.5-inch Rocket Range

TABLE 1
3.5" ROCKET RANGE (SEAD-46) SOIL SAMPLE RESULTS
SENECA ARMY DEPOT ACTIVITY

Parameter	Units	Maximum Value	Frequency of Detection	Criteria Value [1]	Number of Exceedances	Number of Times Detected	Number of Samples Analyzed [2]	SEAD-46 BE46-1 SOIL 464001 1.8 2.2 36507 SA P1S1 RI Value (Q)	SEAD-46 BE46-2 SOIL 464002 1.8 2.2 36507 SA P1S1 RI Value (Q)	SEAD-46 BE46-3 SOIL 464003 1.8 2.2 36507 SA P1S1 RI Value (Q)	SEAD-46 BE46-4 SOIL 464004 1.8 2.2 36507 SA P1S1 RI Value (Q)	SEAD-46 BE46-5 SOIL 464005 1.8 2.2 36507 SA P1S1 RI Value (Q)	SEAD-46 BE46-6 SOIL 464006 1.8 2.2 36508 SA P1S1 RI Value (Q)	SEAD-46 BE46-7 SOIL 464007 1.8 2.2 36508 SA P1S1 RI Value (Q)	SEAD-46 BE46-8 SOIL 464008 1.8 2.2 36508 SA P1S1 RI Value (Q)	SEAD-46 SS46-1 SOIL 464023 0 0.5 36509 SA P1S1 RI Value (Q)
Volatile Organic Compounds																
1,1,1-Trichloroethane	UG/KG	0	0%	680	0	0	31	11 U	10 U	10 U	9 U	9 U	9 U	9 U	10 U	14 U
1,1,2,2-Tetrachloroethane	UG/KG	0	0%		0	0	31	11 U	10 U	10 U	9 U	9 U	9 U	9 U	10 U	14 U
1,1,2-Trichloroethane	UG/KG	0	0%		0	0	31	11 U	10 U	10 U	9 U	9 U	9 U	9 U	10 U	14 U
1,1-Dichloroethane	UG/KG	0	0%	270	0	0	31	11 U	10 U	10 U	9 U	9 U	9 U	9 U	10 U	14 U
1,1-Dichloroethene	UG/KG	0	0%	330	0	0	31	11 U	10 U	10 U	9 U	9 U	9 U	9 U	10 U	14 U
1,2-Dichloroethane	UG/KG	0	0%	20	0	0	31	11 U	10 U	10 U	9 U	9 U	9 U	9 U	10 U	14 U
1,2-Dichloroethene (total)	UG/KG	0	0%	19	0	0	31	11 U	10 U	10 U	9 U	9 U	9 U	9 U	10 U	14 U
1,2-Dichloropropane	UG/KG	0	0%		0	0	31	11 U	10 U	10 U	9 U	9 U	9 U	9 U	10 U	14 U
Acetone	UG/KG	410	100%	50	27	30	30	**200 J**	**110 J**	**200 J**	**150 J**	**160 J**	32 J	48 J		**140 J**
Benzene	UG/KG	12	23%	60	0	7	31	1 J	10 U	1 J	9 U	9 U	12	1 J	2 J	14 U
Bromodichloromethane	UG/KG	0	0%		0	0	31	11 U	10 U	10 U	9 U	9 U	9 U	9 U	10 U	14 U
Bromoform	UG/KG	0	0%		0	0	31	11 U	10 U	10 U	9 U	9 U	9 U	9 U	10 U	14 U
Carbon disulfide	UG/KG	20	39%		0	12	31	6 J	10 U	10	9 U	3 J	8 J	6 J	2 J	14 U
Carbon tetrachloride	UG/KG	0	0%	760	0	0	31	11 U	10 U	10 U	9 U	9 U	9 U	9 U	10 U	14 U
Chlorobenzene	UG/KG	0	0%	1100	0	0	31	11 U	10 U	10 U	9 U	9 U	9 U	9 U	10 U	14 U
Chlorodibromomethane	UG/KG	0	0%		0	0	31	11 U	10 U	10 U	9 U	9 U	9 U	9 U	10 U	14 U
Chloroethane	UG/KG	0	0%		0	0	31	11 U	10 U	10 U	9 U	9 U	9 U	9 U	10 U	14 UJ
Chloroform	UG/KG	0	0%	370	0	0	31	11 U	10 U	10 U	9 U	9 U	9 U	9 U	10 U	14 U
Cis-1,3-Dichloropropene	UG/KG	0	0%		0	0	31	11 U	10 U	10 U	9 U	9 U	9 U	9 U	10 U	14 U
Ethyl benzene	UG/KG	1	3%	1000	0	1	31	11 U	10 U	10 U	9 U	9 U	1 J	9 U	10 U	14 U
Methyl bromide	UG/KG	0	0%		0	0	31	11 U	10 U	10 U	9 U	9 U	9 U	9 U	10 U	14 U
Methyl butyl ketone	UG/KG	0	0%		0	0	31	11 U	10 U	10 U	9 U	9 U	9 U	9 U	10 U	14 U
Methyl chloride	UG/KG	0	0%		0	0	31	11 U	10 U	10 U	9 U	9 U	9 U	9 UJ	10 UJ	14 UJ
Methyl ethyl ketone	UG/KG	48	74%	120	0	23	31	11 U	9 J	10 U	15	12	9 U	9 U	10 U	16
Methyl isobutyl ketone	UG/KG	0	0%		0	0	31	11 U	10 U	10 U	9 U	9 U	9 U	9 U	10 U	14 U
Methylene chloride	UG/KG	0	0%	50	0	0	31	11 U	10 U	10 U	9 U	9 U	9 U	9 U	10 U	14 U
Styrene	UG/KG	0	0%		0	0	31	11 U	10 U	10 U	9 U	9 U	9 U	9 U	10 U	14 U
Tetrachloroethene	UG/KG	0	0%	1300	0	0	31	11 U	10 U	10 U	9 U	9 U	9 U	9 U	10 U	14 U
Toluene	UG/KG	13	90%	700	0	28	31	2 J	10 U	2 J	9 U	9 U	12	4 J	3 J	4 J
Total Xylenes	UG/KG	7	23%	260	0	7	31	1 J	10 U	1 J	9 U	9 U	7 J	2 J	2 J	14 U
Trans-1,3-Dichloropropene	UG/KG	0	0%		0	0	31	11 U	10 U	10 U	9 U	9 U	9 U	9 U	10 U	14 U
Trichloroethene	UG/KG	0	0%	470	0	0	31	11 U	10 U	10 U	9 U	9 U	9 U	9 U	10 U	14 U
Vinyl chloride	UG/KG	0	0%	20	0	0	31	11 U	10 U	10 U	9 U	9 U	9 U	9 U	10 U	14 UJ
Semivolatile Organic Compounds																
1,2,4-Trichlorobenzene	UG/KG	0	0%		0	0	31	77 UJ	78 UJ	81 UJ	78 UJ	77 UJ	76 UJ	78 UJ	74 UJ	110 U
1,2-Dichlorobenzene	UG/KG	0	0%	1100	0	0	31	77 UJ	78 UJ	81 UJ	78 UJ	77 UJ	76 UJ	78 UJ	74 UJ	110 UJ
1,3-Dichlorobenzene	UG/KG	0	0%	2400	0	0	31	77 UJ	78 UJ	81 UJ	78 UJ	77 UJ	76 UJ	78 UJ	74 UJ	110 UJ
1,4-Dichlorobenzene	UG/KG	0	0%	1800	0	0	31	77 UJ	78 UJ	81 UJ	78 UJ	77 UJ	76 UJ	78 UJ	74 UJ	110 UJ
2,4,5-Trichlorophenol	UG/KG	0	0%		0	0	31	190 UJ	190 UJ	200 UJ	190 UJ	190 UJ	180 UJ	190 UJ	180 UJ	270 U
2,4,6-Trichlorophenol	UG/KG	0	0%		0	0	31	77 UJ	78 UJ	81 UJ	78 UJ	77 UJ	76 UJ	78 UJ	74 UJ	110 U
2,4-Dichlorophenol	UG/KG	0	0%		0	0	31	77 UJ	78 UJ	81 UJ	78 UJ	77 UJ	76 UJ	78 UJ	74 UJ	110 U
2,4-Dimethylphenol	UG/KG	0	0%		0	0	31	77 UJ	78 UJ	81 UJ	78 UJ	77 UJ	76 UJ	78 UJ	74 UJ	110 U
2,4-Dinitrophenol	UG/KG	0	0%		0	0	31	190 UR	190 UJ	200 UJ	190 UJ	190 UR	180 UJ	190 UR	180 UR	270 UR
2,4-Dinitrotoluene	UG/KG	0	0%		0	0	31	77 UJ	78 UJ	81 UJ	78 UJ	77 UJ	76 UJ	78 UJ	74 UJ	110 U
2,6-Dinitrotoluene	UG/KG	130	3%		0	1	31	77 UJ	78 UJ	81 UJ	78 UJ	77 UJ	76 UJ	78 UJ	74 UJ	110 U
2-Chloronaphthalene	UG/KG	0	0%		0	0	31	77 UJ	78 UJ	81 UJ	78 UJ	77 UJ	76 UJ	78 UJ	74 UJ	110 UJ
2-Chlorophenol	UG/KG	0	0%		0	0	31	77 UJ	78 UJ	81 UJ	78 UJ	77 UJ	76 UJ	78 UJ	74 UJ	110 U
2-Methylnaphthalene	UG/KG	0	0%		0	0	31	77 UJ	78 UJ	81 UJ	78 UJ	77 UJ	76 UJ	78 UJ	74 UJ	110 U
2-Methylphenol	UG/KG	0	0%		0	0	31	77 UJ	78 UJ	81 UJ	78 UJ	77 UJ	76 UJ	78 UJ	74 UJ	110 UJ
2-Nitroaniline	UG/KG	0	0%		0	0	31	190 UJ	190 UJ	200 UJ	190 UJ	190 UJ	180 UJ	190 UJ	180 UJ	270 U
2-Nitrophenol	UG/KG	0	0%		0	0	31	77 UJ	78 UJ	81 UJ	78 UJ	77 UJ	76 UJ	78 UJ	74 UJ	110 U

TABLE 1
3.5" ROCKET RANGE (SEAD-46) SOIL SAMPLE RESULTS
SENECA ARMY DEPOT ACTIVITY

Parameter	Units	Maximum Value	Frequency of Detection	Criteria Value [1]	Number of Exceedances	Number of Times Detected	Number of Samples Analyzed [2]	SEAD-46 BE46-1 SOIL 464001 1.8 2.2 36507 SA PISI RI Value (Q)	SEAD-46 BE46-2 SOIL 464002 1.8 2.2 36507 SA PISI RI Value (Q)	SEAD-46 BE46-3 SOIL 464003 1.8 2.2 36507 SA PISI RI Value (Q)	SEAD-46 BE46-4 SOIL 464004 1.8 2.2 36507 SA PISI RI Value (Q)	SEAD-46 BE46-5 SOIL 464005 1.8 2.2 36507 SA PISI RI Value (Q)	SEAD-46 BE46-6 SOIL 464006 1.8 2.2 36508 SA PISI RI Value (Q)	SEAD-46 BE46-7 SOIL 464007 1.8 2.2 36508 SA PISI RI Value (Q)	SEAD-46 BE46-8 SOIL 464000 1.8 2.2 36508 SA PISI RI Value (Q)	SEAD-46 SS46-1 SOIL 464023 0 0.5 36509 SA PISI RI Value (Q)
2-Nitrotoluene	UG/KG	0	0%		0	0	31	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U
2-amino-4,6-Dinitrotoluene	UG/KG	0	0%		0	0	31	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U
3-Nitrotoluene	UG/KG	0	0%		0	0	31	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U
4-Nitrotoluene	UG/KG	0	0%		0	0	31	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U
4-amino-2,6-Dinitrotoluene	UG/KG	0	0%		0	0	31	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U
HMX	UG/KG	0	0%		0	0	31	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U
Nitrobenzene	UG/KG	0	0%		0	0	31	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U
RDX	UG/KG	0	0%		0	0	31	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U
Tetryl	UG/KG	0	0%		0	0	31	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U
Pesticides and PCBs																
4,4'-DDD	UG/KG	12	3%	3.3	1	1	31	3.8 U	3.9 U	4.1 U	3.9 U	3.8 U	3.8 U	3.9 U	3.7 U	5.6 U
4,4'-DDE	UG/KG	3.7	10%	3.3	1	3	31	3.8 U	3.9 U	4.1 U	3.9 U	3.8 U	3.8 U	3.9 U	3.7 U	5.6 U
4,4'-DDT	UG/KG	0	0%	3.3	0	0	31	3.8 U	3.9 U	4.1 U	3.9 U	3.8 U	3.8 U	3.9 U	3.7 U	5.6 U
Aldrin	UG/KG	0	0%	5	0	0	31	2 U	2 U	2.1 U	2 U	2 U	1.9 U	2 U	1.9 U	2.9 U
Alpha-BHC	UG/KG	0	0%	20	0	0	31	2 U	2 U	2.1 U	2 U	2 U	1.9 U	2 U	1.9 U	2.9 U
Alpha-Chlordane	UG/KG	3.5	6%	94	0	2	31	2 U	2 U	2.1 U	2 U	2 U	1.9 U	2 U	1.9 U	3.5
Aroclor-1016	UG/KG	0	0%	100	0	0	31	38 U	39 U	41 U	39 U	38 U	38 U	39 U	37 U	56 U
Aroclor-1221	UG/KG	0	0%	100	0	0	31	78 U	80 U	83 U	80 U	78 U	76 U	78 U	75 U	110 U
Aroclor-1232	UG/KG	0	0%	100	0	0	31	38 U	39 U	41 U	39 U	38 U	38 U	39 U	37 U	56 U
Aroclor-1242	UG/KG	0	0%	100	0	0	31	38 U	39 U	41 U	39 U	38 U	38 U	39 U	37 U	56 U
Aroclor-1248	UG/KG	0	0%	100	0	0	31	38 U	39 U	41 U	39 U	38 U	38 U	39 U	37 U	56 U
Aroclor-1254	UG/KG	0	0%	100	0	0	31	38 U	39 U	41 U	39 U	38 U	38 U	39 U	37 U	56 U
Aroclor-1260	UG/KG	0	0%	100	0	0	31	38 U	39 U	41 U	39 U	38 U	38 U	39 U	37 U	56 U
Beta-BHC	UG/KG	0	0%	36	0	0	31	2 U	2 U	2.1 U	2 U	2 U	1.9 U	2 U	1.9 U	2.9 U
Delta-BHC	UG/KG	0	0%		0	0	31	2 U	2 U	2.1 U	2 U	2 U	1.9 U	2 U	1.9 U	2.9 U
Dieldrin	UG/KG	46	32%	40	2	10	31	3.8 U	3.9 U	4.1 U	3.9 U	3.8 U	3.8 U	3.9 U	3.7 U	3 J
Endosulfan I	UG/KG	5.8	3%	2400	0	1	31	2 U	2 U	2.1 U	2 U	2 U	1.9 U	2 U	1.9 U	2.9 U
Endosulfan II	UG/KG	2.3	3%	2400	0	1	31	3.8 U	3.9 U	4.1 U	3.9 U	3.8 U	3.8 U	3.9 U	3.7 U	5.6 U
Endosulfan sulfate	UG/KG	0	0%	2400	0	0	31	3.8 U	3.9 U	4.1 U	3.9 U	3.8 U	3.8 U	3.9 U	3.7 U	5.6 U
Endrin	UG/KG	5.1	10%	14	0	3	31	3.8 U	3.9 U	4.1 U	3.9 U	3.8 U	3.8 U	3.9 U	3.7 U	5.6 U
Endrin aldehyde	UG/KG	0	0%		0	0	31	3.8 U	3.9 U	4.1 U	3.9 U	3.8 U	3.8 U	3.9 U	3.7 U	5.6 U
Endrin ketone	UG/KG	3.1	3%		0	1	31	3.8 U	3.9 U	4.1 U	3.9 U	3.8 U	3.8 U	3.9 U	3.7 U	5.6 U
Gamma-BHC Lindane	UG/KG	0	0%	100	0	0	31	2 U	2 U	2.1 U	2 U	2 U	1.9 U	2 U	1.9 U	2.9 U
Gamma-Chlordane	UG/KG	1.9	3%	94	0	1	31	2 U	2 U	2.1 U	2 U	2 U	1.9 U	2 U	1.9 U	2.9 U
Heptachlor	UG/KG	0	0%	42	0	0	31	2 U	2 U	2.1 U	2 U	2 U	1.9 U	2 U	1.9 U	2.9 U
Heptachlor epoxide	UG/KG	0	0%		0	0	31	2 U	2 U	2.1 U	2 U	2 U	1.9 U	2 U	1.9 U	2.9 U
Methoxychlor	UG/KG	0	0%		0	0	31	20 U	20 U	21 U	20 U	20 U	19 U	20 U	19 U	29 U
Toxaphene	UG/KG	0	0%		0	0	31	200 U	200 U	210 U	200 U	200 U	190 U	200 U	190 U	290 U
Metals																
Aluminum	MG/KG	16500	100%		0	31	31	12600	13800	12100	12100	12900	11100	12700	8890	13000
Antimony	MG/KG	0.73	13%		0	4	31	0.42 UJ	0.46 UJ	0.47 UJ	0.47 UJ	0.44 UJ	0.48 UJ	0.51 UJ	0.48 UJ	0.82 UR
Arsenic	MG/KG	7.9	100%	13	0	31	31	3.6	3.9	7.2	4.1	3.8	3.7	4.3	3.8	4.4
Barium	MG/KG	152	100%	350	0	31	31	92.6	113	95.8	92	94.4	80.5	88.2	62.7	67.8
Beryllium	MG/KG	1.2	100%	7.2	0	31	31	0.85 J	0.95 J	0.85 J	0.8 J	0.88 J	0.88 J	0.9 J	0.62 J	0.48 J
Cadmium	MG/KG	0.09	3%	2.5	0	1	31	0.06 U	0.07 U	0.06 U	0.06 U	0.06 U	0.06 U	0.05 U	0.07 U	0.09 U
Calcium	MG/KG	69300	100%		0	31	31	27400	14900	26800	39000	7410	26500	38000	38300	3300 J
Chromium	MG/KG	26.3	100%	30	0	31	31	20.9	20	21.9	18.7	20.1	18.5	19.1	15.6	16 J
Cobalt	MG/KG	20	100%		0	31	31	11.7	9.3 J	10.5 J	10.2 J	9.8 J	10.2 J	13.6	6.8 J	6.6 J
Copper	MG/KG	41.15	100%	50	0	31	31	25.6	17.4	20.7	23.2	19.3	21.8	26.1	17.9	14.2
Cyanide	MG/KG	0	0%	27	0	0	31	0.56 U	0.57 U	0.6 U	0.55 U	0.52 U	0.58 U	0.59 U	0.55 U	0.8 U
Iron	MG/KG	39100	100%		0	31	31	27000 J	26800 J	24900 J	24800 J	25200 J	22900	26700	17900	19600 J
Lead	MG/KG	73	100%	63	1	31	31	15.3 J	14.9 J	13.5 J	15.3 J	13.7 J	22.5 J	55.5 J	10.7 J	20.2

TABLE 1
3.5" ROCKET RANGE (SEAD-46) SOIL SAMPLE RESULTS
SENECA ARMY DEPOT ACTIVITY

Parameter	Units	Maximum Value	Frequency of Detection	Criteria Value [1]	Number of Exceedances	Number of Times Detected	Number of Samples Analyzed [2]	SEAD-46 SS46-11 SOIL 464014 0 0.5 36508 SA P1S1 RI Value (Q)	SEAD-46 SS46-15 SOIL 464024 0 0.5 36509 SA P1S1 RI Value (Q)	SEAD-46 SS46-16 SOIL 464015 0 0.5 36508 SA P1S1 RI Value (Q)	SEAD-46 SS46-17 SOIL 464029 0 0.5 36510 SA P1S1 RI Value (Q)	SEAD-46 SS46-18 SOIL 464030 0 0.5 36510 SA P1S1 RI Value (Q)	SEAD-46 SS46-19 SOIL 464025 0 0.5 36509 SA P1S1 RI Value (Q)	SEAD-46 SS46-2 SOIL 464013 0 0.5 36508 SA P1S1 RI Value (Q)	SEAD-46 SS46-20 SOIL 464022 0 0.5 36509 SA P1S1 RI Value (Q)	SEAD-46 SS46-21 SOIL 464026 0 0.5 36509 SA P1S1 RI Value (Q)
Volatile Organic Compounds																
1,1,1-Trichloroethane	UG/KG	0	0%	680	0	0	31	11 U	12 UJ	12 U	18 U	13 U	12 U	12 U	14 U	14 U
1,1,2,2-Tetrachloroethane	UG/KG	0	0%		0	0	31	11 U	12 UR	12 U	18 U	13 U	12 UJ	12 U	14 U	14 U
1,1,2-Trichloroethane	UG/KG	0	0%		0	0	31	11 U	12 UJ	12 U	18 U	13 U	12 U	12 U	14 U	14 U
1,1-Dichloroethane	UG/KG	0	0%	270	0	0	31	11 U	12 UJ	12 U	18 U	13 U	12 U	12 U	14 U	14 U
1,1-Dichloroethene	UG/KG	0	0%	330	0	0	31	11 U	12 UJ	12 U	18 U	13 U	12 U	12 U	14 U	14 U
1,2-Dichloroethane	UG/KG	0	0%	20	0	0	31	11 U	12 UJ	12 U	18 U	13 U	12 U	12 U	14 U	14 U
1,2-Dichloroethene (total)	UG/KG	0	0%	19	0	0	31	11 U	12 UJ	12 U	18 U	13 U	12 U	12 U	14 U	14 U
1,2-Dichloropropane	UG/KG	0	0%		0	0	31	11 U	12 UJ	12 U	18 U	13 U	12 U	12 U	14 U	14 U
Acetone	UG/KG	410	100%	50	27	30	30	**300** J	**72** J	**210** J	**240** J	**340** J	**220** J	**380** J	**160** J	**220** J
Benzene	UG/KG	12	23%	60	0	7	31	11 U	2 J	12 U	18 U	13 U	12 U	12 U	14 U	14 U
Bromodichloromethane	UG/KG	0	0%		0	0	31	11 U	12 UJ	12 U	18 U	13 U	12 U	12 U	14 U	14 U
Bromoform	UG/KG	0	0%		0	0	31	11 U	12 UR	12 U	18 U	13 U	12 UJ	12 U	14 U	14 U
Carbon disulfide	UG/KG	20	39%		0	12	31	11 U	11 J	12 U	18 UJ	13 UJ	20 J	12 U	14 U	14 U
Carbon tetrachloride	UG/KG	0	0%	760	0	0	31	11 U	12 UJ	12 U	18 U	13 U	12 U	12 U	14 U	14 U
Chlorobenzene	UG/KG	0	0%	1100	0	0	31	11 U	12 UR	12 U	18 U	13 U	12 UJ	12 U	14 U	14 U
Chlorodibromomethane	UG/KG	0	0%		0	0	31	11 U	12 UJ	12 U	18 U	13 U	12 U	12 U	14 U	14 U
Chloroethane	UG/KG	0	0%		0	0	31	11 U	12 UJ	12 U	18 UJ	13 UJ	12 UJ	12 U	14 U	14 UJ
Chloroform	UG/KG	0	0%	370	0	0	31	11 U	12 UJ	12 U	18 U	13 U	12 U	12 U	14 U	14 U
Cis-1,3-Dichloropropene	UG/KG	0	0%		0	0	31	11 U	12 UJ	12 U	18 U	13 U	12 U	12 U	14 U	14 U
Ethyl benzene	UG/KG	1	3%	1000	0	1	31	11 U	12 UR	12 U	18 U	13 U	12 UJ	12 U	14 U	14 U
Methyl bromide	UG/KG	0	0%		0	0	31	11 U	12 UJ	12 U	18 U	13 U	12 U	12 U	14 U	14 U
Methyl butyl ketone	UG/KG	0	0%		0	0	31	11 U	12 UJ	12 U	18 U	13 U	12 U	12 U	14 U	14 U
Methyl chloride	UG/KG	0	0%		0	0	31	11 UJ	12 UJ	12 UJ	18 UJ	13 UJ	12 UJ	12 UJ	14 UJ	14 UJ
Methyl ethyl ketone	UG/KG	48	74%	120	0	23	31	28	12 UJ	27	25 J	29 J	12 U	48	17	23
Methyl isobutyl ketone	UG/KG	0	0%		0	0	31	11 U	12 UJ	12 U	18 U	13 U	12 U	12 U	14 U	14 U
Methylene chloride	UG/KG	0	0%	50	0	0	31	11 U	12 UJ	12 U	18 UJ	13 UJ	12 U	12 U	14 U	14 U
Styrene	UG/KG	0	0%		0	0	31	11 U	12 UR	12 U	18 U	13 U	12 UJ	12 U	14 U	14 U
Tetrachloroethene	UG/KG	0	0%	1300	0	0	31	11 U	12 UJ	12 U	18 U	13 U	12 U	12 U	14 U	14 U
Toluene	UG/KG	13	90%	700	0	28	31	6 J	9 J	8 J	4 J	4 J	4 J	4 J	5 J	2 J
Total Xylenes	UG/KG	7	23%	260	0	7	31	11 U	12 UR	12 U	18 U	13 U	12 UJ	12 U	14 U	14 U
Trans-1,3-Dichloropropene	UG/KG	0	0%		0	0	31	11 U	12 UJ	12 U	18 U	13 U	12 U	12 U	14 U	14 U
Trichloroethene	UG/KG	0	0%	470	0	0	31	11 U	12 UJ	12 U	18 U	13 U	12 U	12 U	14 U	14 U
Vinyl chloride	UG/KG	0	0%	20	0	0	31	11 U	12 UJ	12 U	18 UJ	13 UJ	12 UJ	12 U	14 U	14 UJ
Semivolatile Organic Compounds																
1,2,4-Trichlorobenzene	UG/KG	0	0%		0	0	31	130 UJ	89 U	88 UJ	100 UJ	93 UJ	90 U	450 UJ	110 U	100 U
1,2-Dichlorobenzene	UG/KG	0	0%	1100	0	0	31	130 UJ	89 UJ	88 UJ	100 UJ	93 UJ	90 UJ	450 UJ	110 UJ	100 UJ
1,3-Dichlorobenzene	UG/KG	0	0%	2400	0	0	31	130 UJ	89 UJ	88 UJ	100 UJ	93 UJ	90 UJ	450 UJ	110 UJ	100 UJ
1,4-Dichlorobenzene	UG/KG	0	0%	1800	0	0	31	130 UJ	89 UJ	88 UJ	100 UJ	93 UJ	90 UJ	450 UJ	110 UJ	100 UJ
2,4,5-Trichlorophenol	UG/KG	0	0%		0	0	31	320 UJ	220 U	210 UJ	250 UJ	220 UJ	220 U	1100 UJ	260 U	250 U
2,4,6-Trichlorophenol	UG/KG	0	0%		0	0	31	130 UJ	89 U	88 UJ	100 UJ	93 UJ	90 U	450 UJ	110 U	100 U
2,4-Dichlorophenol	UG/KG	0	0%		0	0	31	130 UJ	89 U	88 UJ	100 UJ	93 UJ	90 U	450 UJ	110 U	100 U
2,4-Dimethylphenol	UG/KG	0	0%		0	0	31	130 UJ	89 U	88 UJ	100 UJ	93 UJ	90 U	450 UJ	110 U	100 U
2,4-Dinitrophenol	UG/KG	0	0%		0	0	31	320 UR	220 UR	210 UJ	250 UR	220 UR	220 UR	1100 UR	260 UR	250 UR
2,4-Dinitrotoluene	UG/KG	0	0%		0	0	31	130 UJ	89 U	88 UJ	100 UJ	93 UJ	90 U	2900 UJ	110 U	100 U
2,6-Dinitrotoluene	UG/KG	130	3%		0	1	31	130 UJ	89 U	88 UJ	100 UJ	93 UJ	90 U	130 J	110 U	100 U
2-Chloronaphthalene	UG/KG	0	0%		0	0	31	130 UJ	89 UJ	88 UJ	100 UJ	93 UJ	90 UJ	450 UJ	110 UJ	100 UJ
2-Chlorophenol	UG/KG	0	0%		0	0	31	130 UJ	89 U	88 UJ	100 UJ	93 UJ	90 U	450 UJ	110 U	100 U
2-Methylnaphthalene	UG/KG	0	0%		0	0	31	130 UJ	89 U	88 UJ	100 UJ	93 UJ	90 U	450 UJ	110 U	100 U
2-Methylphenol	UG/KG	0	0%		0	0	31	130 UJ	89 UJ	88 UJ	100 UJ	93 UJ	90 UJ	450 UJ	110 UJ	100 UJ
2-Nitroaniline	UG/KG	0	0%		0	0	31	320 UJ	220 U	210 UJ	250 UJ	220 UJ	220 U	1100 UJ	260 U	250 U
2-Nitrophenol	UG/KG	0	0%		0	0	31	130 UJ	89 U	88 UJ	100 UJ	93 UJ	90 U	450 UJ	110 U	100 U

TABLE 1
3.5" ROCKET RANGE (SEAD-46) SOIL SAMPLE RESULTS
SENECA ARMY DEPOT ACTIVITY

Parameter	Units	Maximum Value	Frequency of Detection	Criteria Value [1]	Number of Exceedances	Number of Times Detected	Number of Samples Analyzed [2]	SEAD-46 SS46-11 SOIL 464014 0 0.5 36508 SA P1S1 RI Value (Q)	SEAD-46 SS46-15 SOIL 464024 0 0.5 36509 SA P1S1 RI Value (Q)	SEAD-46 SS46-16 SOIL 464015 0 0.5 36508 SA P1S1 RI Value (Q)	SEAD-46 SS46-17 SOIL 464029 0 0.5 36510 SA P1S1 RI Value (Q)	SEAD-46 SS46-18 SOIL 464030 0 0.5 36510 SA P1S1 RI Value (Q)	SEAD-46 SS46-19 SOIL 464025 0 0.5 36509 SA P1S1 RI Value (Q)	SEAD-46 SS46-2 SOIL 464013 0 0.5 36508 SA P1S1 RI Value (Q)	SEAD-46 SS46-20 SOIL 464022 0 0.5 36509 SA P1S1 RI Value (Q)	SEAD-46 SS46-21 SOIL 464026 0 0.5 36509 SA P1S1 RI Value (Q)
2-Nitrotoluene	UG/KG	0	0%		0	0	31	120 U	120 U	120 U	120 UJ	120 UJ	120 U	120 U	120 UJ	120 U
2-amino-4,6-Dinitrotoluene	UG/KG	0	0%		0	0	31	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 UJ	120 U
3-Nitrotoluene	UG/KG	0	0%		0	0	31	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 UJ	120 U
4-Nitrotoluene	UG/KG	0	0%		0	0	31	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 UJ	120 U
4-amino-2,6-Dinitrotoluene	UG/KG	0	0%		0	0	31	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 UJ	120 U
HMX	UG/KG	0	0%		0	0	31	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 UJ	120 U
Nitrobenzene	UG/KG	0	0%		0	0	31	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 UJ	120 U
RDX	UG/KG	0	0%		0	0	31	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 UJ	120 U
Tetryl	UG/KG	0	0%		0	0	31	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 UJ	120 U
Pesticides and PCBs																
4,4'-DDD	UG/KG	12	3%	3.3	1	1	31	4.3 UJ	4.4 U	4.4 U	5.2 U	12	4.5 U	4.5 U	5.4 U	5.2 U
4,4'-DDE	UG/KG	3.7	10%	3.3	1	3	31	4.3 UJ	2 J	4.4 U	5.2 U	4.6 U	1.8 J	4.5 U	5.4 U	5.2 U
4,4'-DDT	UG/KG	0	0%	3.3	0	0	31	4.3 UJ	4.4 U	4.4 U	5.2 U	4.6 U	4.5 U	4.5 U	5.4 U	5.2 U
Aldrin	UG/KG	0	0%	5	0	0	31	2.2 UJ	2.3 U	2.2 U	2.6 U	2.4 U	2.3 U	2.3 U	2.8 U	2.6 U
Alpha-BHC	UG/KG	0	0%	20	0	0	31	2.2 UJ	2.3 U	2.2 U	2.6 U	2.4 U	2.3 U	2.3 U	2.8 U	2.6 U
Alpha-Chlordane	UG/KG	3.5	6%	94	0	2	31	1.3 UJ	2.3 U	1.5 J	2.6 U	2.4 U	2.3 U	2.3 U	2.8 U	2.6 U
Aroclor-1016	UG/KG	0	0%	100	0	0	31	43 UJ	44 U	44 U	52 U	46 U	45 U	45 U	54 U	52 U
Aroclor-1221	UG/KG	0	0%	100	0	0	31	88 UJ	90 U	88 U	100 U	94 U	92 U	91 U	110 U	100 U
Aroclor-1232	UG/KG	0	0%	100	0	0	31	43 UJ	44 U	44 U	52 U	46 U	45 U	45 U	54 U	52 U
Aroclor-1242	UG/KG	0	0%	100	0	0	31	43 UJ	44 U	44 U	52 U	46 U	45 U	45 U	54 U	52 U
Aroclor-1248	UG/KG	0	0%	100	0	0	31	43 UJ	44 U	44 U	52 U	46 U	45 U	45 U	54 U	52 U
Aroclor-1254	UG/KG	0	0%	100	0	0	31	43 UJ	44 U	44 U	52 U	46 U	45 U	45 U	54 U	52 U
Aroclor-1260	UG/KG	0	0%	100	0	0	31	43 UJ	44 U	44 U	52 U	46 U	45 U	45 U	54 U	52 U
Beta-BHC	UG/KG	0	0%	36	0	0	31	2.2 UJ	2.3 U	2.2 U	2.6 U	2.4 U	2.3 U	2.3 U	2.8 U	2.6 U
Delta-BHC	UG/KG	0	0%		0	0	31	2.2 UJ	2.3 U	2.2 U	2.6 U	2.4 U	2.3 U	2.3 U	2.8 U	2.6 U
Dieldrin	UG/KG	46	32%	40	2	10	31	46 J	4.4 U	4.4 U	5.2 U	28 J	4.3 J	4.5 U	5.4 U	5.2 U
Endosulfan I	UG/KG	5.8	3%	2400	0	1	31	2.2 UJ	2.3 U	2.2 U	2.6 U	2.4 U	2.3 U	2.3 U	2.8 U	2.6 U
Endosulfan II	UG/KG	2.3	3%	2400	0	1	31	4.3 UJ	4.4 U	4.4 U	5.2 U	4.6 U	4.5 U	4.5 U	5.4 U	5.2 U
Endosulfan sulfate	UG/KG	0	0%	2400	0	0	31	4.3 UJ	4.4 U	4.4 U	5.2 U	4.6 U	4.5 U	4.5 U	5.4 U	5.2 U
Endrin	UG/KG	5.1	10%	14	0	3	31	4.3 UJ	4.4 U	4.4 U	5.2 U	3.1 J	4.5 U	4.5 U	5.4 U	5.2 U
Endrin aldehyde	UG/KG	0	0%		0	0	31	4.3 UJ	4.4 U	4.4 U	5.2 U	4.6 U	4.5 U	4.5 U	5.4 U	5.2 U
Endrin ketone	UG/KG	3.1	3%		0	1	31	4.3 UJ	4.4 U	4.4 U	5.2 U	4.6 U	4.5 U	4.5 U	5.4 U	5.2 U
Gamma-BHC Lindane	UG/KG	0	0%	100	0	0	31	2.2 UJ	2.3 U	2.2 U	2.6 U	2.4 U	2.3 U	2.3 U	2.8 U	2.6 U
Gamma-Chlordane	UG/KG	1.9	3%	94	0	1	31	2.2 UJ	2.3 U	2.2 U	2.6 U	2.4 U	2.3 U	2.3 U	2.8 U	1.9 J
Heptachlor	UG/KG	0	0%	42	0	0	31	2.2 UJ	2.3 U	2.2 U	2.6 U	2.4 U	2.3 U	2.3 U	2.8 U	2.6 U
Heptachlor epoxide	UG/KG	0	0%		0	0	31	2.2 UJ	2.3 U	2.2 U	2.6 U	2.4 U	2.3 U	2.3 U	2.8 U	2.6 U
Methoxychlor	UG/KG	0	0%		0	0	31	22 UJ	23 U	22 U	26 U	24 U	23 U	23 U	28 U	26 U
Toxaphene	UG/KG	0	0%		0	0	31	220 UJ	230 U	220 U	260 U	240 U	230 U	230 U	280 U	260 U
Metals																
Aluminum	MG/KG	16500	100%		0	31	31	13900	9020	11100	14400	12600	13500	12000	14400	15300
Antimony	MG/KG	0.73	13%		0	4	31	0.53 UJ	0.73 UR	0.57 UJ	0.56 UR	0.51 J	0.72 UR	0.52 UJ	0.85 UR	0.8 UR
Arsenic	MG/KG	7.9	100%	13	0	31	31	6.1	2.9	4.1	4	5.7	5.1	4.8	5.2	7.9
Barium	MG/KG	152	100%	350	0	31	31	96.6	20.5 J	77.5	149	67.4	67.2	95	93.9	134
Beryllium	MG/KG	1.2	100%	7.2	0	31	31	1.1 J	0.31 J	0.79 J	0.82 J	0.73 J	0.56 J	0.93 J	0.51 J	0.58 J
Cadmium	MG/KG	0.09	3%	2.5	0	1	31	0.07 U	0.09 J	0.07 U	0.05 U	0.04 U	0.08 U	0.07 U	0.09 U	0.09 U
Calcium	MG/KG	69300	100%		0	31	31	4060	18400 J	2610	7400 J	2520 J	6660 J	5740	4390 J	6480 J
Chromium	MG/KG	26.3	100%	30	0	31	31	22.7	16.9 J	16	13	14.1 J	26.3 J	19.9	19 J	20.9 J
Cobalt	MG/KG	20	100%		0	31	31	12.3	9.6 J	10.1 J	6.1 J	10.1 J	11.2 J	11 J	11 J	13.5 J
Copper	MG/KG	41.15	100%	50	0	31	31	30.3	37.8	16.5	21.4 J	20.1 J	29.1	24.2	20.3	30.6
Cyanide	MG/KG	0	0%	27	0	0	31	0.65 U	0.59 U	0.65 U	0.75 U	0.68 U	0.65 U	0.62 U	0.69 U	0.76 U
Iron	MG/KG	39100	100%		0	31	31	28600 J	20800 J	19500 J	19200 J	21200 J	25000 J	25000 J	24300 J	30800 J
Lead	MG/KG	73	100%	63	1	31	31	31.6 J	34.8	26.4 J	22.1	24.4	27.9	22.1 J	26.8	28.1

TABLE I
3.5" ROCKET RANGE (SEAD-46) SOIL SAMPLE RESULTS
SENECA ARMY DEPOT ACTIVITY

Parameter	Units	Maximum Value	Frequency of Detection	Criteria Value [1]	Number of Exceedances	Number of Times Detected	Number of Samples Analyzed [2]	SEAD-46 SS46-22 SOIL 464031 0 0.5 36510 SA P1S1 RI Value (Q)	SEAD-46 SS46-23 SOIL 464032 0 0.5 36510 SA P1S1 RI Value (Q)	SEAD-46 SS46-24 SOIL 464033 0 0.5 36510 SA P1S1 RI Value (Q)	SEAD-46 SS46-3 SOIL 464010 0 0.5 36508 SA P1S1 RI Value (Q)	SEAD-46 SS46-4 SOIL 464009 0 0.5 36508 SA P1S1 RI Value (Q)	SEAD-46 SS46-5 SOIL 464008 0 0.5 36508 SA P1S1 RI Value (Q)	SEAD-46 SS46-6 SOIL 464021 0 0.5 36509 SA P1S1 RI Value (Q)	SEAD-46 SS46-7 SOIL 464020 0 0.5 36509 SA P1S1 RI Value (Q)	SEAD-46 SW SD46-1 SEDIMENT 463000 0 0.2 36511 SA P1S1 RI Value (Q)
Volatile Organic Compounds																
1,1,1-Trichloroethane	UG/KG	0	0%	680	0	0	31	13 U	13 U	12 U	12 U	11 U	12 U	17 U	12 U	12 U
1,1,2,2-Tetrachloroethane	UG/KG	0	0%		0	0	31	13 U	13 U	12 U	12 U	11 U	12 U	17 U	12 U	12 U
1,1,2-Trichloroethane	UG/KG	0	0%		0	0	31	13 U	13 U	12 U	12 U	11 U	12 U	17 U	12 U	12 U
1,1-Dichloroethane	UG/KG	0	0%	270	0	0	31	13 U	13 U	12 U	12 U	11 U	12 U	17 U	12 U	12 U
1,1-Dichloroethene	UG/KG	0	0%	330	0	0	31	13 U	13 U	12 U	12 U	11 U	12 U	17 U	12 U	12 U
1,2-Dichloroethane	UG/KG	0	0%	20	0	0	31	13 U	13 U	12 U	12 U	11 U	12 U	17 U	12 U	12 U
1,2-Dichloroethene (total)	UG/KG	0	0%	19	0	0	31	13 U	13 U	12 U	12 U	11 U	12 U	17 U	12 U	12 U
1,2-Dichloropropane	UG/KG	0	0%		0	0	31	13 U	13 U	12 U	12 U	11 U	12 U	17 U	12 U	12 U
Acetone	UG/KG	410	100%	50	27	30	30	410 J	320 J	260 J	210 J	160 J	280 J	380 J	320 J	280 J
Benzene	UG/KG	12	23%	60	0	7	31	13 U	13 U	12 U	12 U	11 U	12 U	17 U	2 J	12 U
Bromodichloromethane	UG/KG	0	0%		0	0	31	13 U	13 U	12 U	12 U	11 U	12 U	17 U	12 U	12 U
Bromoform	UG/KG	0	0%		0	0	31	13 U	13 U	12 U	12 U	11 U	12 U	17 U	12 U	12 U
Carbon disulfide	UG/KG	20	39%		0	12	31	13 UJ	13 UJ	12 UJ	12 U	11 U	12 U	4 J	11 J	2 J
Carbon tetrachloride	UG/KG	0	0%	760	0	0	31	13 U	13 U	12 U	12 U	11 U	12 U	17 U	12 U	12 U
Chlorobenzene	UG/KG	0	0%	1100	0	0	31	13 U	13 U	12 U	12 U	11 U	12 U	17 U	12 U	12 U
Chlorodibromomethane	UG/KG	0	0%		0	0	31	13 U	13 U	12 U	12 U	11 U	12 U	17 U	12 U	12 U
Chloroethane	UG/KG	0	0%		0	0	31	13 UJ	13 UJ	12 UJ	12 U	11 U	12 U	17 U	12 U	12 UJ
Chloroform	UG/KG	0	0%	370	0	0	31	13 U	13 U	12 U	12 U	11 U	12 U	17 U	12 U	12 U
Cis-1,3-Dichloropropene	UG/KG	0	0%		0	0	31	13 U	13 U	12 U	12 U	11 U	12 U	17 U	12 U	12 U
Ethyl benzene	UG/KG	1	3%	1000	0	1	31	13 U	13 U	12 U	12 U	11 U	12 U	17 U	12 U	12 U
Methyl bromide	UG/KG	0	0%		0	0	31	13 U	13 U	12 U	12 U	11 U	12 U	17 U	12 U	12 U
Methyl butyl ketone	UG/KG	0	0%		0	0	31	13 U	13 U	12 U	12 U	11 U	12 U	17 U	12 U	12 U
Methyl chloride	UG/KG	0	0%		0	0	31	13 UJ	13 UJ	12 UJ	12 UJ	11 UJ	12 UJ	17 UJ	12 UJ	12 UJ
Methyl ethyl ketone	UG/KG	48	74%	120	0	23	31	43 J	40 J	26 J	25	18	27	35	35	22 J
Methyl isobutyl ketone	UG/KG	0	0%		0	0	31	13 U	13 U	12 U	12 U	11 U	12 U	17 U	12 U	12 U
Methylene chloride	UG/KG	0	0%	50	0	0	31	13 UJ	13 UJ	12 UJ	12 U	11 U	12 U	17 U	12 U	12 UJ
Styrene	UG/KG	0	0%		0	0	31	13 U	13 U	12 U	12 U	11 U	12 U	17 U	12 U	12 U
Tetrachloroethene	UG/KG	0	0%	1300	0	0	31	13 U	13 U	12 U	12 U	11 U	12 U	17 U	12 U	12 U
Toluene	UG/KG	13	90%	700	0	28	31	10 J	5 J	6 J	7 J	4 J	6 J	9 J	5 J	6 J
Total Xylenes	UG/KG	7	23%	260	0	7	31	13 U	13 U	12 U	12 U	11 U	12 U	17 U	3 J	12 U
Trans-1,3-Dichloropropene	UG/KG	0	0%		0	0	31	13 U	13 U	12 U	12 U	11 U	12 U	17 U	12 U	12 U
Trichloroethene	UG/KG	0	0%	470	0	0	31	13 U	13 U	12 U	12 U	11 U	12 U	17 U	12 U	12 U
Vinyl chloride	UG/KG	0	0%	20	0	0	31	13 UJ	13 UJ	12 UJ	12 U	11 U	12 U	17 U	12 U	12 UJ
Semivolatile Organic Compounds																
1,2,4-Trichlorobenzene	UG/KG	0	0%		0	0	31	94 UJ	98 UJ	90 UJ	93 UJ	87 UJ	90 UJ	100 U	87 U	80 UJ
1,2-Dichlorobenzene	UG/KG	0	0%	1100	0	0	31	94 UJ	98 UJ	90 UJ	93 UJ	87 UJ	90 UJ	100 UJ	87 UJ	80 UJ
1,3-Dichlorobenzene	UG/KG	0	0%	2400	0	0	31	94 UJ	98 UJ	90 UJ	93 UJ	87 UJ	90 UJ	100 UJ	87 UJ	80 UJ
1,4-Dichlorobenzene	UG/KG	0	0%	1800	0	0	31	94 UJ	98 UJ	90 UJ	93 UJ	87 UJ	90 UJ	100 UJ	87 UJ	80 UJ
2,4,5-Trichlorophenol	UG/KG	0	0%		0	0	31	230 UJ	240 UJ	220 UJ	220 UJ	210 UJ	220 UJ	250 U	210 U	200 UJ
2,4,6-Trichlorophenol	UG/KG	0	0%		0	0	31	94 UJ	98 UJ	90 UJ	93 UJ	87 UJ	90 UJ	100 U	87 U	80 UJ
2,4-Dichlorophenol	UG/KG	0	0%		0	0	31	94 UJ	98 UJ	90 UJ	93 UJ	87 UJ	90 UJ	100 U	87 U	80 UJ
2,4-Dimethylphenol	UG/KG	0	0%		0	0	31	94 UJ	98 UJ	90 UJ	93 UJ	87 UJ	90 UJ	100 U	87 U	80 UJ
2,4-Dinitrophenol	UG/KG	0	0%		0	0	31	230 UR	240 UR	220 UR	220 UJ	210 UJ	220 UJ	250 UR	210 UR	200 UR
2,4-Dinitrotoluene	UG/KG	0	0%		0	0	31	94 UJ	98 UJ	90 UJ	93 UJ	87 UJ	90 UJ	100 U	87 U	80 UJ
2,6-Dinitrotoluene	UG/KG	130	3%		0	1	31	94 UJ	98 UJ	90 UJ	93 UJ	87 UJ	90 UJ	100 U	87 U	80 UJ
2-Chloronaphthalene	UG/KG	0	0%		0	0	31	94 UJ	98 UJ	90 UJ	93 UJ	87 UJ	90 UJ	100 UJ	87 UJ	80 UJ
2-Chlorophenol	UG/KG	0	0%		0	0	31	94 UJ	98 UJ	90 UJ	93 UJ	87 UJ	90 UJ	100 U	87 U	80 UJ
2-Methylnaphthalene	UG/KG	0	0%		0	0	31	94 UJ	98 UJ	90 UJ	93 UJ	87 UJ	90 UJ	100 U	87 U	80 UJ
2-Methylphenol	UG/KG	0	0%		0	0	31	94 UJ	98 UJ	90 UJ	93 UJ	87 UJ	90 UJ	100 UJ	87 UJ	80 UJ
2-Nitroaniline	UG/KG	0	0%		0	0	31	230 UJ	240 UJ	220 UJ	220 UJ	210 UJ	220 UJ	250 U	210 U	200 UJ
2-Nitrophenol	UG/KG	0	0%		0	0	31	94 UJ	98 UJ	90 UJ	93 UJ	87 UJ	90 UJ	100 U	87 U	80 UJ

TABLE 1
3.5" ROCKET RANGE (SEAD-46) SOIL SAMPLE RESULTS
SENECA ARMY DEPOT ACTIVITY

Parameter	Units	Maximum Value	Frequency of Detection	Criteria Value [1]	Number of Exceedances	Number of Times Detected	Number of Samples Analyzed [2]	SEAD-46 SS46-22 SOIL 464031 0 0.5 36510 SA P1S1 RI Value (Q)	SEAD-46 SS46-23 SOIL 464032 0 0.5 36510 SA P1S1 RI Value (Q)	SEAD-46 SS46-24 SOIL 464033 0 0.5 36510 SA P1S1 RI Value (Q)	SEAD-46 SS46-3 SOIL 464010 0 0.5 36508 SA P1S1 RI Value (Q)	SEAD-46 SS46-4 SOIL 464009 0 0.5 36508 SA P1S1 RI Value (Q)	SEAD-46 SS46-5 SOIL 464008 0 0.5 36508 SA P1S1 RI Value (Q)	SEAD-46 SS46-6 SOIL 464021 0 0.5 36509 SA P1S1 RI Value (Q)	SEAD-46 SS46-7 SOIL 464020 0 0.5 36509 SA P1S1 RI Value (Q)	SEAD-46 SW SD46-1 SEDIMENT 463000 0 0.2 36511 SA P1S1 RI Value (Q)
2-Nitrotoluene	UG/KG	0	0%		0	0	31	120 UJ	120 UJ	120 UJ	120 U	120 U	120 U	120 U	120 U	120 UJ
2-amino-4,6-Dinitrotoluene	UG/KG	0	0%		0	0	31	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U
3-Nitrotoluene	UG/KG	0	0%		0	0	31	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U
4-Nitrotoluene	UG/KG	0	0%		0	0	31	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U
4-amino-2,6-Dinitrotoluene	UG/KG	0	0%		0	0	31	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U
HMX	UG/KG	0	0%		0	0	31	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U
Nitrobenzene	UG/KG	0	0%		0	0	31	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U
RDX	UG/KG	0	0%		0	0	31	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U
Tetryl	UG/KG	0	0%		0	0	31	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U
Pesticides and PCBs																
4,4'-DDD	UG/KG	12	3%	3.3	1	1	31	4.7 U	4.9 U	4.5 U	4.6 U	4.3 U	4.5 U	5.1 U	4.3 U	4 U
4,4'-DDE	UG/KG	3.7	10%	3.3	1	3	31	4.7 U	4.9 U	4.5 U	4.6 U	4.3 U	4.5 U	5.1 U	3.7 J	4 U
4,4'-DDT	UG/KG	0	0%	3.3	0	0	31	4.7 U	4.9 U	4.5 U	4.6 U	4.3 U	4.5 U	5.1 U	4.3 U	4 U
Aldrin	UG/KG	0	0%	5	0	0	31	2.4 U	2.5 U	2.3 U	2.4 U	2.2 U	2.3 U	2.6 U	2.2 U	2.1 U
Alpha-BHC	UG/KG	0	0%	20	0	0	31	2.4 U	2.5 U	2.3 U	2.4 U	2.2 U	2.3 U	2.6 U	2.2 U	2.1 U
Alpha-Chlordane	UG/KG	3.5	6%	94	0	2	31	2.4 U	2.5 U	2.3 U	2.4 U	2.2 U	2.3 U	2.6 U	2.2 U	2.1 U
Aroclor-1016	UG/KG	0	0%	100	0	0	31	47 U	49 U	45 U	46 U	43 U	45 U	51 U	43 U	40 U
Aroclor-1221	UG/KG	0	0%	100	0	0	31	96 U	100 U	92 U	94 U	88 U	91 U	100 U	88 U	82 U
Aroclor-1232	UG/KG	0	0%	100	0	0	31	47 U	49 U	45 U	46 U	43 U	45 U	51 U	43 U	40 U
Aroclor-1242	UG/KG	0	0%	100	0	0	31	47 U	49 U	45 U	46 U	43 U	45 U	51 U	43 U	40 U
Aroclor-1248	UG/KG	0	0%	100	0	0	31	47 U	49 U	45 U	46 U	43 U	45 U	51 U	43 U	40 U
Aroclor-1254	UG/KG	0	0%	100	0	0	31	47 U	49 U	45 U	46 U	43 U	45 U	51 U	43 U	40 U
Aroclor-1260	UG/KG	0	0%	100	0	0	31	47 U	49 U	45 U	46 U	43 U	45 U	51 U	43 U	40 U
Beta-BHC	UG/KG	0	0%	36	0	0	31	2.4 U	2.5 U	2.3 U	2.4 U	2.2 U	2.3 U	2.6 U	2.2 U	2.1 U
Delta-BHC	UG/KG	0	0%		0	0	31	2.4 U	2.5 U	2.3 U	2.4 U	2.2 U	2.3 U	2.6 U	2.2 U	2.1 U
Dieldrin	UG/KG	46	32%	40	2	10	31	16 J	4.9 U	4.5 U	10 J	4.6	4.5 U	9 J	45 J	4 U
Endosulfan I	UG/KG	5.8	3%	2400	0	1	31	2.4 U	2.5 U	2.3 U	2.4 U	2.2 U	2.3 U	2.6 U	5.8 J	2.1 U
Endosulfan II	UG/KG	2.3	3%	2400	0	1	31	4.7 U	4.9 U	4.5 U	4.6 U	4.3 U	4.5 U	5.1 U	2.3 J	4 U
Endosulfan sulfate	UG/KG	0	0%	2400	0	0	31	4.7 U	4.9 U	4.5 U	4.6 U	4.3 U	4.5 U	5.1 U	4.3 U	4 U
Endrin	UG/KG	5.1	10%	14	0	3	31	4.7 U	4.9 U	4.5 U	2.4 J	4.3 U	4.5 U	5.1 U	5.1 J	4 U
Endrin aldehyde	UG/KG	0	0%		0	0	31	4.7 U	4.9 U	4.5 U	4.6 U	4.3 U	4.5 U	5.1 U	4.3 U	4 U
Endrin ketone	UG/KG	3.1	3%		0	1	31	4.7 U	4.9 U	4.5 U	4.6 U	4.3 U	4.5 U	5.1 U	3.1 J	4 U
Gamma-BHC Lindane	UG/KG	0	0%	100	0	0	31	2.4 U	2.5 U	2.3 U	2.4 U	2.2 U	2.3 U	2.6 U	2.2 U	2.1 U
Gamma-Chlordane	UG/KG	1.9	3%	94	0	1	31	2.4 U	2.5 U	2.3 U	2.4 U	2.2 U	2.3 U	2.6 U	2.2 U	2.1 U
Heptachlor	UG/KG	0	0%	42	0	0	31	2.4 U	2.5 U	2.3 U	2.4 U	2.2 U	2.3 U	2.6 U	2.2 U	2.1 U
Heptachlor epoxide	UG/KG	0	0%		0	0	31	2.4 U	2.5 U	2.3 U	2.4 U	2.2 U	2.3 U	2.6 U	2.2 U	2.1 U
Methoxychlor	UG/KG	0	0%		0	0	31	24 U	25 U	23 U	24 U	22 U	23 U	26 U	22 U	21 U
Toxaphene	UG/KG	0	0%		0	0	31	240 U	250 U	230 U	240 U	220 U	230 U	260 U	220 U	210 U
Metals																
Aluminum	MG/KG	16500	100%		0	31	31	14100	12900	15300	12100	12500	12500	13900	11600	14600
Antimony	MG/KG	0.73	13%		0	4	31	0.52 UR	0.48 UR	0.4 UR	0.55 UJ	0.56 UJ	0.57 UJ	0.81 UR	0.59 UR	0.73 J
Arsenic	MG/KG	7.9	100%	13	0	31	31	5.6	5.5	6.2	4.4	4.5	4.2	4.2	4.7	3.9
Barium	MG/KG	152	100%	350	0	31	31	139	119	109	95.1	99.6	97.2	115	79.1	56.1
Beryllium	MG/KG	1.2	100%	7.2	0	31	31	1 J	0.95 J	1.2	0.84 J	0.84 J	0.94 J	0.64 J	0.46 J	0.88
Cadmium	MG/KG	0.09	3%	2.5	0	1	31	0.05 U	0.04 U	0.04 U	0.06 U	0.07 U	0.06 U	0.09 U	0.07 U	0.03 U
Calcium	MG/KG	69300	100%		0	31	31	4110 J	4330 J	3390 J	7000	3340	5510	8090 J	23200 J	4940 J
Chromium	MG/KG	26.3	100%	30	0	31	31	15.5 J	12.2 J	16.9 J	18.3	19.2	19.7	18.3 J	17.3 J	19.3 J
Cobalt	MG/KG	20	100%		0	31	31	9.3 J	9 J	16.2	9.8 J	9.9 J	10.4 J	8.5 J	11.1	12.1
Copper	MG/KG	41.15	100%	50	0	31	31	22 J	21.8 J	27.6 J	22.9	21.3	22.1	26.5	24.4	21.5 J
Cyanide	MG/KG	0	0%	27	0	0	31	0.71 U	0.75 U	0.61 U	0.7 U	0.63 U	0.66 U	0.74 U	0.61 U	0.54 U
Iron	MG/KG	39100	100%		0	31	31	24200 J	23400 J	32300 J	23700 J	24800	24400	22900 J	22400 J	30300 J
Lead	MG/KG	73	100%	63	1	31	31	21.7	23.9	20.9	22.8 J	73 J	30.1 J	37	49.7	21.3

TABLE 1
3.5" ROCKET RANGE (SEAD-46) SOIL SAMPLE RESULTS
SENECA ARMY DEPOT ACTIVITY

								SEAD-46 SW SD46-2 SEDIMENT 463001 0 0.2 36511 SA P1S1 RI	SEAD-46 SW SD46-3 SEDIMENT 463002 0 0.2 36511 SA P1S1 RI	SEAD-46 SW SD46-4 SEDIMENT 463003 0 0.2 36510 SA P1S1 RI	SEAD-46 SS46-13 SOIL 464027-464028 0 0.5 36510 SADU P1S1 RI
Parameter	Units	Maximum Value	Frequency of Detection	Criteria Value [1]	Number of Exceedances	Number of Times Detected	Number of Samples Analyzed [2]	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Volatile Organic Compounds											
1,1,1-Trichloroethane	UG/KG	0	0%	680	0	0	31	13 U	14 UR	12 U	12.5 U
1,1,2,2-Tetrachloroethane	UG/KG	0	0%		0	0	31	13 U	14 UR	12 U	12.5 U
1,1,2-Trichloroethane	UG/KG	0	0%		0	0	31	13 U	14 UR	12 U	12.5 U
1,1-Dichloroethane	UG/KG	0	0%	270	0	0	31	13 U	14 UR	12 U	12.5 U
1,1-Dichloroethene	UG/KG	0	0%	330	0	0	31	13 U	14 UR	12 U	12.5 U
1,2-Dichloroethane	UG/KG	0	0%	20	0	0	31	13 U	14 UR	12 U	12.5 U
1,2-Dichloroethene (total)	UG/KG	0	0%	19	0	0	31	13 U	14 UR	12 U	12.5 U
1,2-Dichloropropane	UG/KG	0	0%		0	0	31	13 U	14 UR	12 U	12.5 U
Acetone	UG/KG	410	100%	50	27	30	30	**250** J	27 J	**160** J	**210** J
Benzene	UG/KG	12	23%	60	0	7	31	13 U	14 UR	12 U	12.5 U
Bromodichloromethane	UG/KG	0	0%		0	0	31	13 U	14 UR	12 U	12.5 U
Bromoform	UG/KG	0	0%		0	0	31	13 U	14 UR	12 U	12.5 U
Carbon disulfide	UG/KG	20	39%		0	12	31	13 UJ	2 J	12 UJ	12.5 UJ
Carbon tetrachloride	UG/KG	0	0%	760	0	0	31	13 U	14 UR	12 U	12.5 U
Chlorobenzene	UG/KG	0	0%	1100	0	0	31	13 U	14 UR	12 U	12.5 U
Chlorodibromomethane	UG/KG	0	0%		0	0	31	13 U	14 UR	12 U	12.5 U
Chloroethane	UG/KG	0	0%		0	0	31	13 UJ	14 UR	12 UJ	12.5 UJ
Chloroform	UG/KG	0	0%	370	0	0	31	13 U	14 UR	12 U	12.5 U
Cis-1,3-Dichloropropene	UG/KG	0	0%		0	0	31	13 U	14 UR	12 U	12.5 U
Ethyl benzene	UG/KG	1	3%	1000	0	1	31	13 U	14 UR	12 U	12.5 U
Methyl bromide	UG/KG	0	0%		0	0	31	13 U	14 UR	12 U	12.5 U
Methyl butyl ketone	UG/KG	0	0%		0	0	31	13 U	14 UR	12 U	12.5 U
Methyl chloride	UG/KG	0	0%		0	0	31	13 UJ	14 UR	12 UJ	12.5 UJ
Methyl ethyl ketone	UG/KG	48	74%	120	0	23	31	25 J	14 UR	19 J	21.5 J
Methyl isobutyl ketone	UG/KG	0	0%		0	0	31	13 U	14 UR	12 U	12.5 U
Methylene chloride	UG/KG	0	0%	50	0	0	31	13 UJ	14 UR	12 UJ	12.5 UJ
Styrene	UG/KG	0	0%		0	0	31	13 U	14 UR	12 U	12.5 U
Tetrachloroethene	UG/KG	0	0%	1300	0	0	31	13 U	14 UR	12 U	12.5 U
Toluene	UG/KG	13	90%	700	0	28	31	13 J	12 J	13	3.5 J
Total Xylenes	UG/KG	7	23%	260	0	7	31	13 U	3 J	12 U	12.5 U
Trans-1,3-Dichloropropene	UG/KG	0	0%		0	0	31	13 U	14 UR	12 U	12.5 U
Trichloroethene	UG/KG	0	0%	470	0	0	31	13 U	14 UR	12 U	12.5 U
Vinyl chloride	UG/KG	0	0%	20	0	0	31	13 UJ	14 UR	12 UJ	12.5 UJ
Semivolatile Organic Compounds											
1,2,4-Trichlorobenzene	UG/KG	0	0%		0	0	31	97 UJ	100 UJ	92 UJ	91 UJ
1,2-Dichlorobenzene	UG/KG	0	0%	1100	0	0	31	97 UJ	100 UJ	92 UJ	91 UJ
1,3-Dichlorobenzene	UG/KG	0	0%	2400	0	0	31	97 UJ	100 UJ	92 UJ	91 UJ
1,4-Dichlorobenzene	UG/KG	0	0%	1800	0	0	31	97 UJ	100 UJ	92 UJ	91 UJ
2,4,5-Trichlorophenol	UG/KG	0	0%		0	0	31	240 UJ	250 UJ	220 UJ	220 UJ
2,4,6-Trichlorophenol	UG/KG	0	0%		0	0	31	97 UJ	100 UJ	92 UJ	91 UJ
2,4-Dichlorophenol	UG/KG	0	0%		0	0	31	97 UJ	100 UJ	92 UJ	91 UJ
2,4-Dimethylphenol	UG/KG	0	0%		0	0	31	97 UJ	100 UJ	92 UJ	91 UJ
2,4-Dinitrophenol	UG/KG	0	0%		0	0	31	240 UR	250 UR	220 UJ	220 UR
2,4-Dinitrotoluene	UG/KG	0	0%		0	0	31	97 UJ	100 UJ	92 UJ	91 UJ
2,6-Dinitrotoluene	UG/KG	130	3%		0	1	31	97 UJ	100 UJ	92 UJ	91 UJ
2-Chloronaphthalene	UG/KG	0	0%		0	0	31	97 UJ	100 UJ	92 UJ	91 UJ
2-Chlorophenol	UG/KG	0	0%		0	0	31	97 UJ	100 UJ	92 UJ	91 UJ
2-Methylnaphthalene	UG/KG	0	0%		0	0	31	97 UJ	100 UJ	92 UJ	91 UJ
2-Methylphenol	UG/KG	0	0%		0	0	31	97 UJ	100 UJ	92 UJ	91 UJ
2-Nitroaniline	UG/KG	0	0%		0	0	31	240 UJ	250 UJ	220 UJ	220 UJ
2-Nitrophenol	UG/KG	0	0%		0	0	31	97 UJ	100 UJ	92 UJ	91 UJ

TABLE 1
3.5" ROCKET RANGE (SEAD-46) SOIL SAMPLE RESULTS
SENECA ARMY DEPOT ACTIVITY

								SEAD-46 SW/SD46-2 SEDIMENT 463001 0 0.2 36511 SA P1S1 RI	SEAD-46 SW/SD46-3 SEDIMENT 463002 0 0.2 36511 SA P1S1 RI	SEAD-46 SW/SD46-4 SEDIMENT 463003 0 0.2 36510 SA P1S1 RI	SEAD-46 SS46-13 SOIL 464027/464028 0 0.5 36510 SADU P1S1 RI
Parameter	Units	Maximum Value	Frequency of Detection	Criteria Value [1]	Number of Exceedances	Number of Times Detected	Number of Samples Analyzed [2]	Value (Q)	Value (Q)	Value (Q)	Value (Q)
2-Nitrotoluene	UG/KG	0	0%		0	0	31	120 UJ	120 UJ	120 UJ	120 UJ
2-amino-4,6-Dinitrotoluene	UG/KG	0	0%		0	0	31	120 U	120 U	120 U	120 U
3-Nitrotoluene	UG/KG	0	0%		0	0	31	120 U	120 U	120 U	120 U
4-Nitrotoluene	UG/KG	0	0%		0	0	31	120 U	120 U	120 U	120 U
4-amino-2,6-Dinitrotoluene	UG/KG	0	0%		0	0	31	120 U	120 U	120 U	120 U
HMX	UG/KG	0	0%		0	0	31	120 U	120 U	120 U	120 U
Nitrobenzene	UG/KG	0	0%		0	0	31	120 U	120 U	120 U	120 U
RDX	UG/KG	0	0%		0	0	31	120 U	120 U	120 U	120 U
Tetryl	UG/KG	0	0%		0	0	31	120 U	120 U	120 U	120 U
Pesticides and PCBs											
4,4'-DDD	UG/KG	12	3%	3.3	1	1	31	4.8 U	5.1 U	4.5 U	4.55 U
4,4'-DDE	UG/KG	3.7	10%	3.3	1	3	31	4.8 U	5.1 U	4.5 U	4.55 U
4,4'-DDT	UG/KG	0	0%	3.3	0	0	31	4.8 U	5.1 U	4.5 U	4.55 U
Aldrin	UG/KG	0	0%	5	0	0	31	2.5 U	2.6 U	2.3 U	2.35 U
Alpha-BHC	UG/KG	0	0%	20	0	0	31	2.5 U	2.6 U	2.3 U	2.35 U
Alpha-Chlordane	UG/KG	3.5	6%	94	0	2	31	2.5 U	2.6 U	2.3 U	2.35 U
Aroclor-1016	UG/KG	0	0%	100	0	0	31	48 U	51 U	45 U	45.5 U
Aroclor-1221	UG/KG	0	0%	100	0	0	31	98 U	100 U	92 U	92.5 U
Aroclor-1232	UG/KG	0	0%	100	0	0	31	48 U	51 U	45 U	45.5 U
Aroclor-1242	UG/KG	0	0%	100	0	0	31	48 U	51 U	45 U	45.5 U
Aroclor-1248	UG/KG	0	0%	100	0	0	31	48 U	51 U	45 U	45.5 U
Aroclor-1254	UG/KG	0	0%	100	0	0	31	48 U	51 U	45 U	45.5 U
Aroclor-1260	UG/KG	0	0%	100	0	0	31	48 U	51 U	45 U	45.5 U
Beta-BHC	UG/KG	0	0%	36	0	0	31	2.5 U	2.6 U	2.3 U	2.35 U
Delta-BHC	UG/KG	0	0%		0	0	31	2.5 U	2.6 U	2.3 U	2.35 U
Dieldrin	UG/KG	46	32%	40	2	10	31	4.8 U	5.1 U	4.5 U	8.5 J
Endosulfan I	UG/KG	5.8	3%	2400	0	1	31	2.5 U	2.6 U	2.3 U	2.35 U
Endosulfan II	UG/KG	2.3	3%	2400	0	1	31	4.8 U	5.1 U	4.5 U	4.55 U
Endosulfan sulfate	UG/KG	0	0%	2400	0	0	31	4.8 U	5.1 U	4.5 U	4.55 U
Endrin	UG/KG	5.1	10%	14	0	3	31	4.8 U	5.1 U	4.5 U	4.55 U
Endrin aldehyde	UG/KG	0	0%		0	0	31	4.8 U	5.1 U	4.5 U	4.55 U
Endrin ketone	UG/KG	3.1	3%		0	1	31	4.8 U	5.1 U	4.5 U	4.55 U
Gamma-BHC (Lindane	UG/KG	0	0%	100	0	0	31	2.5 U	2.6 U	2.3 U	2.35 U
Gamma-Chlordane	UG/KG	1.9	3%	94	0	1	31	2.5 U	2.6 U	2.3 U	2.35 U
Heptachlor	UG/KG	0	0%	42	0	0	31	2.5 U	2.6 U	2.3 U	2.35 U
Heptachlor epoxide	UG/KG	0	0%		0	0	31	2.5 U	2.6 U	2.3 U	2.35 U
Methoxychlor	UG/KG	0	0%		0	0	31	25 U	26 U	23 U	23.5 U
Toxaphene	UG/KG	0	0%		0	0	31	250 U	260 U	230 U	235 U
Metals											
Aluminum	MG/KG	16500	100%		0	31	31	15200	16500	16000	14250
Antimony	MG/KG	0.73	13%		0	4	31	0.64 UR	0.66 J	0.57 UR	0.56 J
Arsenic	MG/KG	7.9	100%	13	0	31	31	6.1	7.2	6.2	5.2
Barium	MG/KG	152	100%	350	0	31	31	152	127	84.7	81.7
Beryllium	MG/KG	1.2	100%	7.2	0	31	31	1.1 J	1.2	1.1 J	0.835 J
Cadmium	MG/KG	0.09	3%	2.5	0	1	31	0.06 U	0.04 U	0.05 U	0.045 U
Calcium	MG/KG	69300	100%		0	31	31	3470 J	69300 J	2640 J	2970 J
Chromium	MG/KG	26.3	100%	30	0	31	31	15.9 J	23.1 J	22.6 J	16
Cobalt	MG/KG	20	100%		0	31	31	12.8 J	20	13.9	9.65 J
Copper	MG/KG	41.15	100%	50	0	31	31	19.5 J	32.5 J	29.9	41.15 J
Cyanide	MG/KG	0	0%	27	0	0	31	0.73 U	0.77 U	0.67 U	0.675 U
Iron	MG/KG	39100	100%		0	31	31	29700 J	39100 J	30100 J	24450 J
Lead	MG/KG	73	100%	63	1	31	31	15.4	22	20.2	50.75

TABLE 2
3.5" ROCKET RANGE (SEAD-46) GROUNDWATER SAMPLE RESULTS
SENECA ARMY DEPOT ACTIVITY

Parameter	Units	Maximum Value	Frequency of Detection	Criteria Level	Number of Exceedances	Number of Times Detected	Number of Samples Analyzed	SEAD-46 MW46-1 GW 462000 16 16 1/22/2000 SA RI PHASE 1 STEP 1 1 Value (Q)	SEAD-46 MW46-1 GW 462100 16 16 4/25/2000 SA RI PHASE 1 STEP 1 2 Value (Q)	SEAD-46 MW46-2 GW 462004 10.5 10.5 1/22/2000 SA RI PHASE 1 STEP 1 1 Value (Q)	SEAD-46 MW46-2 GW 462101 10.5 10.5 4/25/2000 SA RI PHASE 1 STEP 1 2 Value (Q)	SEAD-46 MW46-3 GW 462005 13 13 1/23/2000 SA RI PHASE 1 STEP 1 1 Value (Q)
Volatile Organic Compounds												
1,1,1,2-Tetrachloroethane	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,1-Trichloroethane	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2,2-Tetrachloroethane	UG/L	0	0%	5	0	0	10	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U
1,1,2-Trichloroethane	UG/L	0	0%	1	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethane	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethene	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloropropene	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,3-Trichlorobenzene	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,3-Trichloropropane	UG/L	0	0%	0.04	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,4-Trichlorobenzene	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,4-Trimethylbenzene	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0.04	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dibromoethane	UG/L	0	0%	0.0006	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichlorobenzene	UG/L	0	0%	3	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethane	UG/L	0	0%	0.6	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloropropane	UG/L	0	0%	1	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3,5-Trimethylbenzene	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3-Dichlorobenzene	UG/L	0	0%	3	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3-Dichloropropane	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,4-Dichlorobenzene	UG/L	0	0%	3	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2,2-Dichloropropane	UG/L	0	0%		0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-Chlorotoluene	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-Nitropropane	UG/L	0	0%		0	0	12	25 U	25 U	25 U	25 U	25 U
Acetone	UG/L	0	0%		0	0	12	5 U	5 U	5 U	5 U	5 U
Acrylonitrile	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Allyl chloride	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Benzene	UG/L	0	0%	1	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromobenzene	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromochloromethane	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromodichloromethane	UG/L	0	0%	80	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromoform	UG/L	0	0%	80	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Butyl chloride	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon disulfide	UG/L	0	0%		0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon tetrachloride	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroacetonitrile	UG/L	0	0%		0	0	12	25 U	25 U	25 U	25 U	25 U
Chlorobenzene	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorodibromomethane	UG/L	0	0%	80	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroethane	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroform	UG/L	0	0%	7	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Cis-1,2-Dichloroethene	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Cis-1,3-Dichloropropene	UG/L	0	0%	0.4	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Dichlorodifluoromethane	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Dichloromethyl methyl ketone	UG/L	0	0%		0	0	11	25 U	25 UJ	25 U	25 UJ	25 U
Ethyl benzene	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Ethyl ether	UG/L	0	0%		0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Ethyl methacrylate	UG/L	0	0%		0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Hexachlorobutadiene	UG/L	0	0%	0.5	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Hexachloroethane	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Isopropylbenzene	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Meta/Para Xylene	UG/L	0	0%		0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methacrylonitrile	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methyl 2-propenoate	UG/L	0	0%		0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methyl Tertbutyl Ether	UG/L	0	0%		0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methyl bromide	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methyl butyl ketone	UG/L	0	0%		0	0	12	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Methyl chloride	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methyl ethyl ketone	UG/L	0	0%		0	0	12	5 U	5 U	5 U	5 U	5 U
Methyl iodide	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

TABLE 2
3.5" ROCKET RANGE (SEAD-46) GROUNDWATER SAMPLE RESULTS
SENECA ARMY DEPOT ACTIVITY

Parameter	Units	Maximum Value	Frequency of Detection	Criteria Level	Number of Exceedances	Number of Times Detected	Number of Samples Analyzed	SEAD-46 MW46-1 GW 462000 16 16 1 22 2000 SA RI PHASE 1 STEP 1 1 Value (Q)	SEAD-46 MW46-1 GW 462100 16 16 4/25/2000 SA RI PHASE 1 STEP 1 2 Value (Q)	SEAD-46 MW46-2 GW 462004 10.5 10.5 1 22/2000 SA RI PHASE 1 STEP 1 1 Value (Q)	SEAD-46 MW46-2 GW 462101 10.5 10.5 4/25/2000 SA RI PHASE 1 STEP 1 2 Value (Q)	SEAD-46 MW46-3 GW 462005 13 13 1 23/2000 SA RI PHASE 1 STEP 1 1 Value (Q)
Benzo(b)fluoranthene	UG/L	0	0%		0	0	12	1.1 U	1 U	1 U	1 U	1 U
Benzo(ghi)perylene	UG/L	0	0%		0	0	12	1.1 U	1 U	1 U	1 U	1 U
Benzo(k)fluoranthene	UG/L	0	0%		0	0	12	1.1 U	1 U	1 U	1 U	1 U
Bis(2-Chloroethoxy)methane	UG/L	0	0%	5	0	0	12	1.1 U	1 U	1 U	1 U	1 U
Bis(2-Chloroethyl)ether	UG/L	0	0%	1	0	0	12	1.1 U	1 U	1 U	1 U	1 U
Bis(2-Chloroisopropyl)ether	UG/L	0	0%	5	0	0	12	1.1 U	1 U	1 U	1 U	1 U
Bis(2-Ethylhexyl)phthalate	UG/L	0	0%	5	0	0	12	1.1 U	1 U	1 U	1 U	1 U
Butylbenzylphthalate	UG/L	0.057	8%		0	1	12	0.057 J	1 U	1 U	1 U	1 U
Carbazole	UG/L	0	0%		0	0	12	1.1 U	1 UJ	1 U	1 UJ	1 U
Chrysene	UG/L	0	0%		0	0	12	1.1 U	1 U	1 U	1 U	1 U
Di-n-butylphthalate	UG/L	0	0%	50	0	0	12	1.1 U	1 U	1 U	1 U	1 U
Di-n-octylphthalate	UG/L	0	0%		0	0	12	1.1 U	1 U	1 U	1 U	1 U
Dibenz(a,h)anthracene	UG/L	0	0%		0	0	12	1.1 U	1 U	1 U	1 U	1 U
Dibenzofuran	UG/L	0	0%		0	0	12	1.1 U	1 U	1 U	1 U	1 U
Diethyl phthalate	UG/L	0	0%		0	0	12	1.1 U	1 U	1 U	1 U	1 U
Dimethylphthalate	UG/L	0	0%		0	0	12	1.1 U	1 U	1 U	1 U	1 U
Fluoranthene	UG/L	0	0%		0	0	12	1.1 U	1 U	1 U	1 U	1 U
Fluorene	UG/L	0	0%		0	0	12	1.1 U	1 U	1 U	1 U	1 U
Hexachlorobenzene	UG/L	0	0%	0.04	0	0	12	1.1 U	1 U	1 U	1 U	1 U
Hexachlorobutadiene	UG/L	0	0%	0.5	0	0	12	1.1 U	1 U	1 U	1 U	1 U
Hexachlorocyclopentadiene	UG/L	0	0%	5	0	0	12	1.1 U	1 U	1 U	1 U	1 U
Hexachloroethane	UG/L	0	0%	5	0	0	12	1.1 U	1 U	1 U	1 U	1 U
Indeno(1,2,3-cd)pyrene	UG/L	0	0%		0	0	12	1.1 U	1 U	1 U	1 U	1 U
Isophorone	UG/L	0	0%		0	0	12	1.1 U	1 U	1 U	1 U	1 U
N-Nitrosodiphenylamine	UG/L	0	0%		0	0	12	1.1 U	1 U	1 U	1 U	1 U
N-Nitrosodipropylamine	UG/L	0	0%		0	0	12	1.1 U	1 U	1 U	1 U	1 U
Naphthalene	UG/L	0	0%		0	0	12	1.1 U	1 U	1 U	1 U	1 U
Nitrobenzene	UG/L	0	0%	0.4	0	0	12	1.1 U	1 U	1 U	1 U	1 U
Pentachlorophenol	UG/L	0	0%	1	0	0	12	2.6 U	2.6 U	2.5 U	2.5 U	2.6 U
Phenanthrene	UG/L	0	0%		0	0	12	1.1 U	1 U	1 U	1 U	1 U
Phenol	UG/L	0	0%	1	0	0	12	1.1 U	1 U	1 U	1 U	1 U
Pyrene	UG/L	0	0%		0	0	12	1.1 U	1 U	1 U	1 U	1 U
Explosives												
1,3,5-Trinitrobenzene	UG/L	0	0%	5	0	0	12	0.25 U	0.25 UJ	0.25 U	0.25 U	0.25 U
1,3-Dinitrobenzene	UG/L	0	0%	5	0	0	12	0.25 U	0.25 UJ	0.25 U	0.25 U	0.25 U
2,4,6-Trinitrotoluene	UG/L	0	0%	5	0	0	12	0.25 U	0.25 UJ	0.25 U	0.25 U	0.25 U
2,4-Dinitrotoluene	UG/L	0	0%	5	0	0	12	0.25 U	0.25 UJ	0.25 U	0.25 U	0.25 U
2,6-Dinitrotoluene	UG/L	0	0%	5	0	0	12	0.25 U	0.25 UJ	0.25 U	0.25 U	0.25 U
2-Nitrotoluene	UG/L	0	0%	5	0	0	12	0.25 U	0.25 UJ	0.25 U	0.25 U	0.25 U
2-amino-4,6-Dinitrotoluene	UG/L	0	0%		0	0	12	0.25 U	0.25 UJ	0.25 U	0.25 U	0.25 U
3-Nitrotoluene	UG/L	0	0%	5	0	0	12	0.25 U	0.25 UJ	0.25 U	0.25 U	0.25 U
4-Nitrotoluene	UG/L	0	0%	5	0	0	12	0.25 U	0.25 UJ	0.25 U	0.25 U	0.25 U
4-amino-2,6-Dinitrotoluene	UG/L	0	0%		0	0	12	0.25 U	0.25 UJ	0.25 U	0.25 U	0.25 U
HMX	UG/L	0	0%		0	0	12	0.25 U	0.25 UJ	0.25 U	0.25 U	0.25 U
Nitrobenzene	UG/L	0	0%	0.4	0	0	12	0.25 U	0.25 UJ	0.25 U	0.25 U	0.25 U
RDX	UG/L	0	0%		0	0	12	0.25 U	0.25 UJ	0.25 U	0.25 U	0.25 U
Tetryl	UG/L	0	0%		0	0	12	0.25 U	0.25 UJ	0.25 U	0.25 U	0.25 U
Pesticides and PCBs												
4,4'-DDD	UG/L	0	0%	0.3	0	0	12	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
4,4'-DDE	UG/L	0	0%	0.2	0	0	12	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
4,4'-DDT	UG/L	0	0%	0.2	0	0	12	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Aldrin	UG/L	0	0%	0	0	0	12	0.0052 U	0.005 U	0.0051 U	0.005 U	0.0052 U
Alpha-BHC	UG/L	0	0%	0.01	0	0	12	0.0052 U	0.005 U	0.0051 U	0.005 U	0.0052 U
Alpha-Chlordane	UG/L	0	0%		0	0	12	0.0052 U	0.005 U	0.0051 U	0.005 U	0.0052 U
Aroclor-1016	UG/L	0	0%	0.09	0	0	12	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Aroclor-1221	UG/L	0	0%	0.09	0	0	12	0.21 U	0.2 U	0.2 U	0.2 U	0.21 U
Aroclor-1232	UG/L	0	0%	0.09	0	0	12	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Aroclor-1242	UG/L	0	0%	0.09	0	0	12	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Aroclor-1248	UG/L	0	0%	0.09	0	0	12	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U

TABLE 2
3.5" ROCKET RANGE (SEAD-46) GROUNDWATER SAMPLE RESULTS
SENECA ARMY DEPOT ACTIVITY

Parameter	Units	Maximum Value	Frequency of Detection	Criteria Level	Number of Exceedances	Number of Times Detected	Number of Samples Analyzed	SEAD-46 MW46-3 GW 462102 13 13 4.25 2000 SA RI PHASE 1 STEP 1 2 Value (Q)	SEAD-46 MW46-4 GW 462003 23 23 1.22.2000 SA RI PHASE 1 STEP 1 1 Value (Q)	SEAD-46 MW46-4 GW 462103 23 23 4/25/2000 SA RI PHASE 1 STEP 1 2 Value (Q)	SEAD-46 MW46-5 GW 462002 10 10 1/22/2000 SA RI PHASE 1 STEP 1 1 Value (Q)	SEAD-46 MW46-5 GW 462104 10 10 4/25/2000 SA RI PHASE 1 STEP 1 2 Value (Q)
Volatile Organic Compounds												
1,1,1,2-Tetrachloroethane	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,1-Trichloroethane	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2,2-Tetrachloroethane	UG/L	0	0%	5	0	0	10	0.5 UR	0.5 U	0.5 UJ	0.5 U	0.5 UJ
1,1,2-Trichloroethane	UG/L	0	0%	1	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethane	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethene	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloropropene	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,3-Trichlorobenzene	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,3-Trichloropropane	UG/L	0	0%	0.04	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,4-Trichlorobenzene	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,4-Trimethylbenzene	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0.04	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dibromoethane	UG/L	0	0%	0.0006	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichlorobenzene	UG/L	0	0%	3	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethane	UG/L	0	0%	0.6	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloropropane	UG/L	0	0%	1	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3,5-Trimethylbenzene	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3-Dichlorobenzene	UG/L	0	0%	3	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3-Dichloropropane	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,4-Dichlorobenzene	UG/L	0	0%	3	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2,2-Dichloropropane	UG/L	0	0%		0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-Chlorotoluene	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-Nitropropane	UG/L	0	0%		0	0	12	25 UJ	25 U	25 U	25 U	25 U
Acetone	UG/L	0	0%		0	0	12	5 U	5 U	5 U	5 U	5 U
Acrylonitrile	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Allyl chloride	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Benzene	UG/L	0	0%	1	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromobenzene	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromochloromethane	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromodichloromethane	UG/L	0	0%	80	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromoform	UG/L	0	0%	80	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Butyl chloride	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon disulfide	UG/L	0	0%		0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon tetrachloride	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroacetonitrile	UG/L	0	0%		0	0	12	25 U	25 U	25 U	25 U	25 U
Chlorobenzene	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorodibromomethane	UG/L	0	0%	80	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroethane	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroform	UG/L	0	0%	7	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Cis-1,2-Dichloroethene	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Cis-1,3-Dichloropropene	UG/L	0	0%	0.4	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Dichlorodifluoromethane	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Dichloromethyl methyl ketone	UG/L	0	0%		0	0	11	25 UJ	25 U	25 UJ	25 U	25 UJ
Ethyl benzene	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Ethyl ether	UG/L	0	0%		0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Ethyl methacrylate	UG/L	0	0%		0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Hexachlorobutadiene	UG/L	0	0%	0.5	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Hexachloroethane	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Isopropylbenzene	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Meta Para Xylene	UG/L	0	0%		0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methacrylonitrile	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methyl 2-propenoate	UG/L	0	0%		0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methyl Tertbutyl Ether	UG/L	0	0%		0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methyl bromide	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methyl butyl ketone	UG/L	0	0%		0	0	12	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Methyl chloride	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methyl ethyl ketone	UG/L	0	0%		0	0	12	5 U	5 U	5 U	5 U	5 U
Methyl iodide	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

TABLE 2
3.5" ROCKET RANGE (SEAD-46) GROUNDWATER SAMPLE RESULTS
SENECA ARMY DEPOT ACTIVITY

Parameter	Units	Maximum Value	Frequency of Detection	Criteria Level	Number of Exceedances	Number of Times Detected	Number of Samples Analyzed	SEAD-46 MW46-3 GW 462102 13 13 4/25/2000 SA RI PHASE 1 STEP 1 2 Value (Q)	SEAD-46 MW46-4 GW 462003 23 23 1/22/2000 SA RI PHASE 1 STEP 1 1 Value (Q)	SEAD-46 MW46-4 GW 462103 23 23 4/25/2000 SA RI PHASE 1 STEP 1 2 Value (Q)	SEAD-46 MW46-5 GW 462002 10 10 1/22/2000 SA RI PHASE 1 STEP 1 1 Value (Q)	SEAD-46 MW46-5 GW 462104 10 10 4/25/2000 SA RI PHASE 1 STEP 1 2 Value (Q)
Benzo(b)fluoranthene	UG/L	0	0%		0	0	12	1 U	1 U	1 U	1 U	1 U
Benzo(ghi)perylene	UG/L	0	0%		0	0	12	1 U	1 U	1 U	1 U	1 U
Benzo(k)fluoranthene	UG/L	0	0%		0	0	12	1 U	1 U	1 U	1 U	1 U
Bis(2-Chloroethoxy)methane	UG/L	0	0%	5	0	0	12	1 U	1 U	1 U	1 U	1 U
Bis(2-Chloroethyl)ether	UG/L	0	0%	1	0	0	12	1 U	1 U	1 U	1 U	1 U
Bis(2-Chloroisopropyl)ether	UG/L	0	0%	5	0	0	12	1 U	1 U	1 U	1 U	1 U
Bis(2-Ethylhexyl)phthalate	UG/L	0	0%	5	0	0	12	1 U	1 U	1 U	1 U	1 U
Butylbenzylphthalate	UG/L	0.057	8%		0	1	12	1 U	1 U	1 U	1 U	1 U
Carbazole	UG/L	0	0%		0	0	12	1 UJ	1 U	1 UJ	1 U	1 UJ
Chrysene	UG/L	0	0%		0	0	12	1 U	1 U	1 U	1 U	1 U
Di-n-butylphthalate	UG/L	0	0%	50	0	0	12	1 U	1 U	1 U	1 U	1 U
Di-n-octylphthalate	UG/L	0	0%		0	0	12	1 U	1 U	1 U	1 U	1 U
Dibenz(a,h)anthracene	UG/L	0	0%		0	0	12	1 U	1 U	1 U	1 U	1 U
Dibenzofuran	UG/L	0	0%		0	0	12	1 U	1 U	1 U	1 U	1 U
Diethyl phthalate	UG/L	0	0%		0	0	12	1 U	1 U	1 U	1 U	1 U
Dimethylphthalate	UG/L	0	0%		0	0	12	1 U	1 U	1 U	1 U	1 U
Fluoranthene	UG/L	0	0%		0	0	12	1 U	1 U	1 U	1 U	1 U
Fluorene	UG/L	0	0%		0	0	12	1 U	1 U	1 U	1 U	1 U
Hexachlorobenzene	UG/L	0	0%	0.04	0	0	12	1 U	1 U	1 U	1 U	1 U
Hexachlorobutadiene	UG/L	0	0%	0.5	0	0	12	1 U	1 U	1 U	1 U	1 U
Hexachlorocyclopentadiene	UG/L	0	0%	5	0	0	12	1 U	1 U	1 U	1 U	1 U
Hexachloroethane	UG/L	0	0%	5	0	0	12	1 U	1 U	1 U	1 U	1 U
Indeno(1,2,3-cd)pyrene	UG/L	0	0%		0	0	12	1 U	1 U	1 U	1 U	1 U
Isophorone	UG/L	0	0%		0	0	12	1 U	1 U	1 U	1 U	1 U
N-Nitrosodiphenylamine	UG/L	0	0%		0	0	12	1 U	1 U	1 U	1 U	1 U
N-Nitrosodipropylamine	UG/L	0	0%		0	0	12	1 U	1 U	1 U	1 U	1 U
Naphthalene	UG/L	0	0%		0	0	12	1 U	1 U	1 U	1 U	1 U
Nitrobenzene	UG/L	0	0%	0.4	0	0	12	1 U	1 U	1 U	1 U	1 U
Pentachlorophenol	UG/L	0	0%	1	0	0	12	2.5 U	2.5 U	2.5 U	2.6 U	2.5 U
Phenanthrene	UG/L	0	0%		0	0	12	1 U	1 U	1 U	1 U	1 U
Phenol	UG/L	0	0%	1	0	0	12	1 U	1 U	1 U	1 U	1 U
Pyrene	UG/L	0	0%		0	0	12	1 U	1 U	1 U	1 U	1 U
Explosives												
1,3,5-Trinitrobenzene	UG/L	0	0%	5	0	0	12	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,3-Dinitrobenzene	UG/L	0	0%	5	0	0	12	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
2,4,6-Trinitrotoluene	UG/L	0	0%	5	0	0	12	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
2,4-Dinitrotoluene	UG/L	0	0%	5	0	0	12	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
2,6-Dinitrotoluene	UG/L	0	0%	5	0	0	12	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
2-Nitrotoluene	UG/L	0	0%	5	0	0	12	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
2-amino-4,6-Dinitrotoluene	UG/L	0	0%		0	0	12	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
3-Nitrotoluene	UG/L	0	0%	5	0	0	12	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
4-Nitrotoluene	UG/L	0	0%	5	0	0	12	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
4-amino-2,6-Dinitrotoluene	UG/L	0	0%		0	0	12	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
HMX	UG/L	0	0%		0	0	12	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Nitrobenzene	UG/L	0	0%	0.4	0	0	12	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
RDX	UG/L	0	0%		0	0	12	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Tetryl	UG/L	0	0%		0	0	12	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Pesticides and PCBs												
4,4'-DDD	UG/L	0	0%	0.3	0	0	12	0.01 U	0.01 U	0.011 U	0.01 U	0.012 U
4,4'-DDE	UG/L	0	0%	0.2	0	0	12	0.01 U	0.01 U	0.011 U	0.01 U	0.012 U
4,4'-DDT	UG/L	0	0%	0.2	0	0	12	0.01 U	0.01 U	0.011 U	0.01 U	0.012 U
Aldrin	UG/L	0	0%	0	0	0	12	0.0052 U	0.0052 U	0.0054 U	0.0053 U	0.0058 U
Alpha-BHC	UG/L	0	0%	0.01	0	0	12	0.0052 U	0.0052 U	0.0054 U	0.0053 U	0.0058 U
Alpha-Chlordane	UG/L	0	0%		0	0	12	0.0052 U	0.0052 U	0.0054 U	0.0053 U	0.0058 U
Aroclor-1016	UG/L	0	0%	0.09	0	0	12	0.1 U	0.1 U	0.11 U	0.1 U	0.12 U
Aroclor-1221	UG/L	0	0%	0.09	0	0	12	0.21 U	0.21 U	0.22 U	0.21 U	0.23 U
Aroclor-1232	UG/L	0	0%	0.09	0	0	12	0.1 U	0.1 U	0.11 U	0.1 U	0.12 U
Aroclor-1242	UG/L	0	0%	0.09	0	0	12	0.1 U	0.1 U	0.11 U	0.1 U	0.12 U
Aroclor-1248	UG/L	0	0%	0.09	0	0	12	0.1 U	0.1 U	0.11 U	0.1 U	0.12 U

TABLE 2
3.5" ROCKET RANGE (SEAD-46) GROUNDWATER SAMPLE RESULTS
SENECA ARMY DEPOT ACTIVITY

Parameter	Units	Maximum Value	Frequency of Detection	Criteria Level	Number of Exceedances	Number of Times Detected	Number of Samples Analyzed	SEAD-46 MW46-6 GW 462001 13 13 1/22/2000 SA RI PHASE 1 STEP 1 1 Value (Q)	SEAD-46 MW46-6 GW 462105 13 13 4/26/2000 SA RI PHASE 1 STEP 1 2 Value (Q)
Volatile Organic Compounds									
1,1,1,2-Tetrachloroethane	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U
1,1,1-Trichloroethane	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U
1,1,2,2-Tetrachloroethane	UG/L	0	0%	5	0	0	10	0.5 U	0.5 UR
1,1,2-Trichloroethane	UG/L	0	0%	1	0	0	12	0.5 U	0.5 U
1,1-Dichloroethane	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U
1,1-Dichloroethene	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U
1,1-Dichloropropene	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U
1,2,3-Trichlorobenzene	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U
1,2,3-Trichloropropane	UG/L	0	0%	0.04	0	0	12	0.5 U	0.5 U
1,2,4-Trichlorobenzene	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U
1,2,4-Trimethylbenzene	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0.04	0	0	12	0.5 U	0.5 UJ
1,2-Dibromoethane	UG/L	0	0%	0.0006	0	0	12	0.5 U	0.5 U
1,2-Dichlorobenzene	UG/L	0	0%	3	0	0	12	0.5 U	0.5 U
1,2-Dichloroethane	UG/L	0	0%	0.6	0	0	12	0.5 U	0.5 U
1,2-Dichloropropane	UG/L	0	0%	1	0	0	12	0.5 U	0.5 U
1,3,5-Trimethylbenzene	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U
1,3-Dichlorobenzene	UG/L	0	0%	3	0	0	12	0.5 U	0.5 U
1,3-Dichloropropane	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U
1,4-Dichlorobenzene	UG/L	0	0%	3	0	0	12	0.5 U	0.5 U
2,2-Dichloropropane	UG/L	0	0%		0	0	12	0.5 U	0.5 U
2-Chlorotoluene	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U
2-Nitropropane	UG/L	0	0%		0	0	12	25 U	25 UJ
Acetone	UG/L	0	0%		0	0	12	5 U	5 U
Acrylonitrile	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U
Allyl chloride	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U
Benzene	UG/L	0	0%	1	0	0	12	0.5 U	0.5 U
Bromobenzene	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U
Bromochloromethane	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U
Bromodichloromethane	UG/L	0	0%	80	0	0	12	0.5 U	0.5 U
Bromoform	UG/L	0	0%	80	0	0	12	0.5 U	0.5 U
Butyl chloride	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U
Carbon disulfide	UG/L	0	0%		0	0	12	0.5 U	0.5 U
Carbon tetrachloride	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U
Chloroacetonitrile	UG/L	0	0%		0	0	12	25 U	25 U
Chlorobenzene	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U
Chlorodibromomethane	UG/L	0	0%	80	0	0	12	0.5 U	0.5 U
Chloroethane	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U
Chloroform	UG/L	0	0%	7	0	0	12	0.5 U	0.5 U
Cis-1,2-Dichloroethene	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U
Cis-1,3-Dichloropropene	UG/L	0	0%	0.4	0	0	12	0.5 U	0.5 U
Dichlorodifluoromethane	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U
Dichloromethyl methyl ketone	UG/L	0	0%		0	0	11	25 U	25 UR
Ethyl benzene	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U
Ethyl ether	UG/L	0	0%		0	0	12	0.5 U	0.5 U
Ethyl methacrylate	UG/L	0	0%		0	0	12	0.5 U	0.5 U
Hexachlorobutadiene	UG/L	0	0%	0.5	0	0	12	0.5 U	0.5 U
Hexachloroethane	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U
Isopropylbenzene	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U
Meta Para Xylene	UG/L	0	0%		0	0	12	0.5 U	0.5 U
Methacrylonitrile	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U
Methyl 2-propenoate	UG/L	0	0%		0	0	12	0.5 U	0.5 U
Methyl Tertbutyl Ether	UG/L	0	0%		0	0	12	0.5 U	0.5 U
Methyl bromide	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U
Methyl butyl ketone	UG/L	0	0%		0	0	12	2.5 U	2.5 U
Methyl chloride	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U
Methyl ethyl ketone	UG/L	0	0%		0	0	12	5 U	5 U
Methyl iodide	UG/L	0	0%	5	0	0	12	0.5 U	0.5 U

TABLE 2
3.5" ROCKET RANGE (SEAD-46) GROUNDWATER SAMPLE RESULTS
SENECA ARMY DEPOT ACTIVITY

Parameter	Units	Maximum Value	Frequency of Detection	Criteria Level	Number of Exceedances	Number of Times Detected	Number of Samples Analyzed	SEAD-46 MW46-6 GW 462001 13 13 1-22-2000 SA RI PHASE 1 STEP 1 1 Value (Q)	SEAD-46 MW46-6 GW 462105 13 13 4-26-2000 SA RI PHASE 1 STEP 1 2 Value (Q)
Benzo(b)fluoranthene	UG/L	0	0%		0	0	12	1 U	1.1 U
Benzo(ghi)perylene	UG/L	0	0%		0	0	12	1 U	1.1 U
Benzo(k)fluoranthene	UG/L	0	0%		0	0	12	1 U	1.1 U
Bis(2-Chloroethoxy)methane	UG/L	0	0%	5	0	0	12	1 U	1.1 U
Bis(2-Chloroethyl)ether	UG/L	0	0%	1	0	0	12	1 U	1.1 U
Bis(2-Chloroisopropyl)ether	UG/L	0	0%	5	0	0	12	1 U	1.1 U
Bis(2-Ethylhexyl)phthalate	UG/L	0	0%	5	0	0	12	1 U	1.1 U
Butylbenzylphthalate	UG/L	0.057	8%		0	1	12	1 U	1.1 U
Carbazole	UG/L	0	0%		0	0	12	1 U	1.1 UJ
Chrysene	UG/L	0	0%		0	0	12	1 U	1.1 U
Di-n-butylphthalate	UG/L	0	0%	50	0	0	12	1 U	1.1 U
Di-n-octylphthalate	UG/L	0	0%		0	0	12	1 U	1.1 U
Dibenz(a,h)anthracene	UG/L	0	0%		0	0	12	1 U	1.1 U
Dibenzofuran	UG/L	0	0%		0	0	12	1 U	1.1 U
Diethyl phthalate	UG/L	0	0%		0	0	12	1 U	1.1 U
Dimethylphthalate	UG/L	0	0%		0	0	12	1 U	1.1 U
Fluoranthene	UG/L	0	0%		0	0	12	1 U	1.1 U
Fluorene	UG/L	0	0%		0	0	12	1 U	1.1 U
Hexachlorobenzene	UG/L	0	0%	0.04	0	0	12	1 U	1.1 U
Hexachlorobutadiene	UG/L	0	0%	0.5	0	0	12	1 U	1.1 U
Hexachlorocyclopentadiene	UG/L	0	0%	5	0	0	12	1 U	1.1 U
Hexachloroethane	UG/L	0	0%	5	0	0	12	1 U	1.1 U
Indeno(1,2,3-cd)pyrene	UG/L	0	0%		0	0	12	1 U	1.1 U
Isophorone	UG/L	0	0%		0	0	12	1 U	1.1 U
N-Nitrosodiphenylamine	UG/L	0	0%		0	0	12	1 U	1.1 U
N-Nitrosodipropylamine	UG/L	0	0%		0	0	12	1 U	1.1 U
Naphthalene	UG/L	0	0%		0	0	12	1 U	1.1 U
Nitrobenzene	UG/L	0	0%	0.4	0	0	12	1 U	1.1 U
Pentachlorophenol	UG/L	0	0%	1	0	0	12	2.6 U	2.7 U
Phenanthrene	UG/L	0	0%		0	0	12	1 U	1.1 U
Phenol	UG/L	0	0%	1	0	0	12	1 U	1.1 U
Pyrene	UG/L	0	0%		0	0	12	1 U	1.1 U
Explosives									
1,3,5-Trinitrobenzene	UG/L	0	0%	5	0	0	12	0.25 U	0.25 U
1,3-Dinitrobenzene	UG/L	0	0%	5	0	0	12	0.25 U	0.25 U
2,4,6-Trinitrotoluene	UG/L	0	0%	5	0	0	12	0.25 U	0.25 U
2,4-Dinitrotoluene	UG/L	0	0%	5	0	0	12	0.25 U	0.25 U
2,6-Dinitrotoluene	UG/L	0	0%	5	0	0	12	0.25 U	0.25 U
2-Nitrotoluene	UG/L	0	0%	5	0	0	12	0.25 U	0.25 U
2-amino-4,6-Dinitrotoluene	UG/L	0	0%		0	0	12	0.25 U	0.25 U
3-Nitrotoluene	UG/L	0	0%	5	0	0	12	0.25 U	0.25 U
4-Nitrotoluene	UG/L	0	0%	5	0	0	12	0.25 U	0.25 U
4-amino-2,6-Dinitrotoluene	UG/L	0	0%		0	0	12	0.25 U	0.25 U
HMX	UG/L	0	0%		0	0	12	0.25 U	0.25 U
Nitrobenzene	UG/L	0	0%	0.4	0	0	12	0.25 U	0.25 U
RDX	UG/L	0	0%		0	0	12	0.25 U	0.25 U
Tetryl	UG/L	0	0%		0	0	12	0.25 U	0.25 U
Pesticides and PCBs									
4,4'-DDD	UG/L	0	0%	0.3	0	0	12	0.01 U	0.01 U
4,4'-DDE	UG/L	0	0%	0.2	0	0	12	0.01 U	0.01 U
4,4'-DDT	UG/L	0	0%	0.2	0	0	12	0.01 U	0.01 U
Aldrin	UG/L	0	0%	0	0	0	12	0.0052 U	0.0053 U
Alpha-BHC	UG/L	0	0%	0.01	0	0	12	0.0052 U	0.0053 U
Alpha-Chlordane	UG/L	0	0%		0	0	12	0.0052 U	0.0053 U
Aroclor-1016	UG/L	0	0%	0.09	0	0	12	0.1 U	0.1 U
Aroclor-1221	UG/L	0	0%	0.09	0	0	12	0.21 U	0.21 U
Aroclor-1232	UG/L	0	0%	0.09	0	0	12	0.1 U	0.1 U
Aroclor-1242	UG/L	0	0%	0.09	0	0	12	0.1 U	0.1 U
Aroclor-1248	UG/L	0	0%	0.09	0	0	12	0.1 U	0.1 U

TABLE 3A

OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN IN SEAD-46 SOIL

SENECA ARMY DEPOT ACTIVITY

Scenario Time frame:	Cuurent/Future
Medium:	Soil
Exposure Medium:	Soil
Exposure Point:	SEAD-46

CAS Number	Chemical	Minimum Detected Concentration [1] (mg/kg)	Q	Maximum Detected Concentration [1] (mg/kg)	Q	Location of Maximum Concentration	Detection Frequency [1]	Range of Reporting Limits [1] (mg/kg)	Concentration Used for Screening [2] (mg/kg)	Background Value [3] (mg/kg)	Screening Value [4] (mg/kg)	Potential ARAR/TBC Source	ARAR / TBC Value [5] (mg/kg)	COPC Flag	Rationale for Contaminant Deletion or Selection [6]
VOC															
67-64-1	Acetone	0.027	J	0.41	J	SS46-22	30 / 30	0 - 0	0.41		6100	NYSDEC Subpart 375-6	0.05	NO	BSL
71-43-2	Benzene	0.001	J	0.012		BE46-6	7 / 30	0.009 - 0.018	0.012		1.1	NYSDEC Subpart 375-6	0.06	NO	BSL
75-15-0	Carbon disulfide	0.002	J	0.02	J	SS46-19	12 / 31	0.009 - 0.018	0.02		67			NO	BSL
100-41-4	Ethyl benzene	0.001	J	0.001	J	BE46-6	1 / 29	0.009 - 0.018	0.001		5.7	NYSDEC Subpart 375-6	1	NO	BSL
78-93-3	Methyl ethyl ketone	0.009	J	0.048		SS46-2	23 / 30	0.009 - 0.012	0.048		2800	NYSDEC Subpart 375-6	0.12	NO	BSL
108-88-3	Toluene	0.002	J	0.013	J	SW/SD46-2	28 / 31	0.009 - 0.01	0.013		500	NYSDEC Subpart 375-6	0.7	NO	BSL
1330-20-7	Total Xylenes	0.001	J	0.007	J	BE46-6	7 / 30	0.009 - 0.018	0.007		60	NYSDEC Subpart 375-6	0.26	NO	BSL
SVOC															
606-20-2	2,6-Dinitrotoluene	0.13	J	0.13	J	SS46-2	1 / 31	0.074 - 0.13	0.13		6.1			NO	BSL
106-44-5	4-Methylphenol	0.0062	J	0.013	J	SS46-2	2 / 31	0.074 - 0.13	0.013		31	NYSDEC Subpart 375-6	0.33	NO	BSL
56-55-3	Benzo(a)anthracene	0.0033	J	0.034	J	SS46-15	7 / 31	0.074 - 0.45	0.034		0.15	NYSDEC Subpart 375-6	1	NO	CSG
50-32-8	Benzo(a)pyrene	0.0059	J	0.03	J	SS46-15	14 / 31	0.019 - 0.45	0.03		0.015	NYSDEC Subpart 375-6	1	YES	ASL
205-99-2	Benzo(b)fluoranthene	0.0055	J	0.047	J	SS46-15	15 / 31	0.074 - 0.45	0.047		0.15	NYSDEC Subpart 375-6	1	NO	CSG
191-24-2	Benzo(ghi)perylene	0.017	J	0.017	J	SS46-15	1 / 31	0.074 - 0.45	0.017			NYSDEC Subpart 375-6	100		NSV
207-08-9	Benzo(k)fluoranthene	0.0044	J	0.033	J	SS46-15	15 / 31	0.074 - 0.45	0.033		1.5	NYSDEC Subpart 375-6	0.8	NO	CSG
117-81-7	Bis(2-Ethylhexyl)phthalate	0.028	J	0.78	J	SS46-11	3 / 31	0.052 - 0.45	0.78		35			NO	BSL
218-01-9	Chrysene	0.0053	J	0.04	J	SS46-15	10 / 31	0.074 - 0.45	0.04		15	NYSDEC Subpart 375-6	1	NO	CSG
84-74-2	Di-n-butylphthalate	0.0057	J	1.1	J	SS46-2	6 / 31	0.074 - 0.13	1.1		610			NO	BSL
84-66-2	Diethyl phthalate	0.011	J	0.011	J	SS46-11	1 / 31	0.0036 - 0.45	0.011		4900			NO	BSL
206-44-0	Fluoranthene	0.0062	J	0.036	J	SS46-15	16 / 31	0.074 - 0.45	0.036		230	NYSDEC Subpart 375-6	100	NO	BSL
118-74-1	Hexachlorobenzene	0.011	J	0.011	J	BE46-8	1 / 31	0.076 - 0.45	0.011		0.3	NYSDEC Subpart 375-6	0.33	NO	BSL
67-72-1	Hexachloroethane	0.0099	J	0.0099	J	BE46-8	1 / 31	0.076 - 0.45	0.0099		35			NO	BSL
67-72-1	Indeno(1,2,3-cd)pyrene	0.012	J	0.019	J	SS46-15	2 / 31	0.076 - 0.45	0.019		35	NYSDEC Subpart 375-6	0.5	NO	CSG
86-30-6	N-Nitrosodiphenylamine	0.015	J	0.059	J	SS46-2	2 / 31	0.074 - 0.13	0.059		99			NO	BSL
91-20-3	Naphthalene	0.0035	J	0.0035	J	SS46-15	1 / 31	0.074 - 0.45	0.0035		3.9	NYSDEC Subpart 375-6	12	NO	BSL
85-01-8	Phenanthrene	0.0049	J	0.0251	J	SS46-13	14 / 31	0.074 - 0.45	0.0251			NYSDEC Subpart 375-6	100		NSV
108-95-2	Phenol	0.0042	J	0.033	J	SW/SD46-4	10 / 31	0.074 - 0.45	0.033		1800	NYSDEC Subpart 375-6	0.33	NO	BSL
129-00-0	Pyrene	0.005	J	0.032	J	SS46-15	17 / 31	0.076 - 0.45	0.032		170	NYSDEC Subpart 375-6	100	NO	BSL
Pesticides/PCBS															
72-54-8	4,4'-DDD	0.012		0.012		SS46-18	1 / 31	0.0037 - 0.0056	0.012		2	NYSDEC Subpart 375-6	0.0033	NO	BSL
72-55-9	4,4'-DDE	0.0018	J	0.0037	J	SS46-7	3 / 31	0.0037 - 0.0056	0.0037		1.4	NYSDEC Subpart 375-6	0.0033	NO	BSL
12789-03-6	Alpha-Chlordane	0.0015	J	0.0035		SS46-1	2 / 31	0.0013 - 0.0028	0.0035		1.6	NYSDEC Subpart 375-6	0.094	NO	BSL
60-57-1	Dieldrin	0.003	J	0.046	J	SS46-11	10 / 31	0.0037 - 0.0054	0.046		0.03	NYSDEC Subpart 375-6	0.04	YES	ASL
115-29-7	Endosulfan I	0.0058	J	0.0058	J	SS46-7	1 / 31	0.0019 - 0.0029	0.0058		37	NYSDEC Subpart 375-6	2.4	NO	BSL
115-29-7	Endosulfan II	0.0023	J	0.0023	J	SS46-7	1 / 31	0.0037 - 0.0056	0.0023		37	NYSDEC Subpart 375-6	2.4	NO	BSL
72-20-8	Endrin	0.0024	J	0.0051	J	SS46-7	3 / 31	0.0037 - 0.0056	0.0051		1.8	NYSDEC Subpart 375-6	0.014	NO	BSL
53494-70-5	Endrin ketone	0.0031	J	0.0031	J	SS46-7	1 / 31	0.0037 - 0.0056	0.0031						NSV
12789-03-6	Gamma-Chlordane	0.0019	J	0.0019	J	SS46-21	1 / 31	0.0019 - 0.0029	0.0019		1.6	NYSDEC Subpart 375-6	0.094	NO	BSL
Metals															
7429-90-5	Aluminum	8890		16500		SW/SD46-3	31 / 31	0 - 0	16500	20,500	7700			YES	ASL
7440-36-0	Antimony	0.51	J	0.73	J	SW/SD46-1	4 / 18	0.42 - 0.57	0.73	6.55	3.1			NO	BSL
7440-38-2	Arsenic	2.9		7.9		SS46-21	31 / 31	0 - 0	7.9	21.5	0.39	NYSDEC Subpart 375-6	13	YES	ASL
7440-39-3	Barium	20.5	J	152		SW/SD46-2	31 / 31	0 - 0	152	159	1500	NYSDEC Subpart 375-6	350	NO	BSL
7440-41-7	Beryllium	0.31	J	1.2		SS46-24	31 / 31	0 - 0	1.2	1.4	16	NYSDEC Subpart 375-6	7.2	NO	BSL
7440-43-9	Cadmium	0.09	J	0.09	J	SS46-15	1 / 31	0.03 - 0.09	0.09	2.9	7	NYSDEC Subpart 375-6	2.5	NO	BSL
7440-70-2	Calcium	2520	J	69300	J	SW/SD46-3	31 / 31	0 - 0	69300	293,000					NUT
7440-47-3	Chromium	12.2	J	26.3	J	SS46-19	31 / 31	0 - 0	26.3	32.7	280	NYSDEC Subpart 375-6	30	NO	BSL
7440-48-4	Cobalt	6.1	J	20		SW/SD46-3	31 / 31	0 - 0	20	29.1	2.3			YES	ASL
7440-50-8	Copper	14.2		41.15	J	SS46-13	31 / 31	0 - 0	41.15	62.8	310	NYSDEC Subpart 375-6	50	NO	BSL

TABLE 3B
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN IN SEAD-46 GROUNDWATER
SENECA ARMY DEPOT ACTIVITY

Scenario Time frame:	Current/Future
Medium:	Groundwater
Exposure Medium:	Groundwater
Exposure Point:	Aquifer -- Tap Water

CAS Number	Chemical	Minimum Detected Concentration [1] (ug/L)	Q	Maximum Detected Concentration [1] (ug/L)	Q	Location of Maximum Concentration	Detection Frequency [1]	Range of Reporting Limits [1] (ug/L)	Concentration Used for Screening [2] (ug/L)	Background Value [3] (ug/L)	Screening Value [4] (ug/L)	Potential ARAR /TBC Value (ug/L)	Potential ARAR/TBC Source	COPC Flag	Rationale for Contaminant Deletion or Selection [5]
SVOC															
85-68-7	Butylbenzylphthalate	0.057	J	0.057	J	MW46-1	1 / 12	1 - 1.1	0.057		35			NO	BSL
Metals															
7429-90-5	Aluminum	73.9	J	500		MW46-3	12 / 12	0 - 0	500	2,730	37,000			NO	BSL
7440-36-0	Antimony	5.5	J	5.5	J	MW46-1	1 / 12	4.6 - 5.4	6	8	15	3	GA	NO	BSL
7440-38-2	Arsenic	2.6	J	4	J	MW46-5	3 / 12	2.4 - 2.5	4	2	0.05	10	MCL	YES	ASL
7440-39-3	Barium	37.8	J	79.5	J	MW46-1	12 / 12	0 - 0	80	78.2	7,300	1,000	GA	NO	BSL
7440-70-2	Calcium	77900	J	98400		MW46-5	12 / 12	0 - 0	98,400	116,000				YES	NUT
7440-47-3	Chromium	1.1	J	2.5	J	MW46-3	6 / 12	2.2 - 2.2	3	4.7		50	GA	NO	NSV
7440-50-8	Copper	7	J	7	J	MW46-6	1 / 12	1.6 - 2.1	7	3.3	1,500	200	GA	NO	BSL
7439-89-6	Iron	88.9	J	568	J	MW46-3	12 / 12	0 - 0	568	4,480	26,000	300	GA	NO	BSL
	Iron+Manganese	93	J	641.4	J	MW46-3	12 / 12	0 - 0	641			500	GA	YES	NA
7439-95-4	Magnesium	14500		24600		MW46-1	12 / 12	0 - 0	24,600	28,600				YES	NSV
7439-96-5	Manganese	4.1	J	104		MW46-1	12 / 12	0 - 0	104	224	880			NO	BSL
7440-09-7	Potassium	615	J	5890		MW46-1	12 / 12	0 - 0	5,890	3,830				YES	NUT
7782-49-2	Selenium	2.4	J	2.4	J	MW46-4	1 / 12	2.2 - 4	2	2	180	10	GA	NO	BSL
7440-22-4	Silver	2.1	J	2.2	J	MW46-6	2 / 12	1 - 1.9	2	1	180	50	GA	NO	BSL
122-34-9	Sodium	688	J	4980	J	MW46-1	12 / 12	0 - 0	4,980	14,600	1	20,000	GA	YES	NUT
7440-28-0	Thallium	4	J	4	J	MW46-6	1 / 12	3.6 - 3.9	4	2	2	2	MCL	YES	ASL
7440-62-2	Vanadium	3.5	J	3.7	J	MW46-2	2 / 12	2.8 - 2.9	3.7	5.2	260			NO	BSL
7440-66-6	Zinc	1.8	J	3.9	J	MW46-6	8 / 12	1.5 - 2.1	3.9	23.1	11,000			NO	BSL
Other Analytes															
14797-55-8	Nitrate/Nitrite Nitrogen	20		250		MW46-5	12 / 12	0 - 0	250	23.1	58,000	10,000	GA	NO	BSL

Notes:

1. Analytical results are from the 2000 RI sampling rounds.
   Laboratory duplicates were not included in the assessment. Range of reporting limits were presented for nondetects only.
2. The maximum detected concentration was used for screening.
3. Background values are average concentrations of background sample results.
4. EPA Regional Screening Levels for tap water. On-line resources available at
   http://www.epa.gov/region09/superfund/prg/index.html. Last updated April 2009.
   Target Cancer Risk = 1E-6; Target Hazard Quotient =0.1. Ingestion from drinking and inhalation of volatiles during showering are evaluated to derive the PRGs.
   Screening values for calcium, magnesium, potassium, and sodium were calculated based on an assumption of 2L/day water intake
   and recommended dietary allowances and adequate intakes for 1-3 yr children (500 mg/day and 80 mg/day for calcium and magnesium) and
   minimum requirements for 2-5 yr children (1400 mg/day for potassium) from Marilyn Wright (2001) Dietary Reference Intakes.
   For sodium, an upper limit intake of 2,400 mg/day (http://www.mealformation.com/dailyval.html) was used.
   PRG for chromium (VI) was used as screening value for chromium.
5. Rationale codes

Selection Reason:	Above Screening Levels (ASL)	No Screening Value (NSV)
Deletion Reason:	Essential Nutrient (NUT)	
	Below Screening Level (BSL)	

Definitions:

COPC = Chemical of Potential Concern
ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered
MCL = Federal Maximum Contaminant Level
GA = New York State Class GA Groundwater Standard (TOGS 1.1.1, June 1998 with updates)
NA = Not Applicable
Q = Qualifier
J = Estimated Value

TABLE 4A
SURFACE SOIL EXPOSURE POINT CONCENTRATION SUMMARY FOR SEAD-46
SENECA ARMY DEPOT ACTIVITY

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Soil
Exposure Point:	SEAD-46

CAS #	Chemical of Potential Concern	Units	Arithmetic Mean (1)	EPA ProUCL Student-t 95th UCL Value (1, 2, 4)	Maximum Detected Concentration (1)	Q	EPC Units	Reasonable Maximum Exposure (2)		
								EPA ProUCL Recommended UCL Value	Medium EPC Statistic	Medium EPC Rationale
56-55-3	Benzo(a)anthracene	mg/kg	0.010	0.017	0.034	J	mg/kg	0.017	95% KM Student-t	Non-parametric
50-32-8	Benzo(a)pyrene	mg/kg	0.010	0.013	0.030	J	mg/kg	0.013	95% KM Student-t	Non-parametric
205-99-2	Benzo(b)fluoranthene	mg/kg	0.012	0.018	0.047	J	mg/kg	0.018	95% KM Student-t	Non-parametric
191-24-2	Benzo(ghi)perylene	mg/kg	-(3)	-(3)	0.017	J	mg/kg	0.017	-	-
207-08-9	Benzo(k)fluoranthene	mg/kg	0.011	0.015	0.033	J	mg/kg	0.015	95% KM Student-t	Non-parametric
218-01-9	Chrysene	mg/kg	12.3	0.019	0.040	J	mg/kg	0.019	95% KM Student-t	Non-parametric
67-72-1	Indeno(1,2,3-cd)pyrene	mg/kg	-(3)	-(3)	0.019	J	mg/kg	0.019	95% KM Student-t [5]	Non-parametric
85-01-8	Phenanthrene	mg/kg	0.008	0.011	0.025	J	mg/kg	0.011	95% KM Student-t	Non-parametric
60-57-1	Dieldrin	mg/kg	0.017	0.014	0.046	J	mg/kg	0.014	95% KM Student-t	Non-parametric
53494-70-5	Endrin ketone	mg/kg	-(3)	-(3)	0.003	J	mg/kg	0.003	-	-
7429-90-5	Aluminum	mg/kg	13507	14126	16,500		mg/kg	14126	95% Student's-t UCL	Normal
7440-38-2	Arsenic	mg/kg	5.1	5.5	7.90		mg/kg	5.547	95% Student's-t UCL	Normal
7440-48-4	Cobalt	mg/kg	11.1	12.2	20		mg/kg	12.150	95% Student's-t UCL	Normal
7439-89-6	Iron	mg/kg	25467	27,224	39,100	J	mg/kg	27224	95% Student's-t UCL	Normal
7439-92-1	Lead	mg/kg	29.3	33.9	73	J	mg/kg	33.910	95% Approximate Gamma	Gamma
7439-96-5	Manganese	mg/kg	595.7	670.8	1,170	J	mg/kg	670.8	95% KM Student-t	Non-parametric
7440-28-0	Thallium	mg/kg	1.9	2.1	3.70		mg/kg	2.114	95% KM (BCA) UCL	Non-parametric

Notes:

1. Field duplicates were not averaged and presented as discreet samples. Laboratory duplicates were not included in the assessment. Non-detectes were included in the dataset and 95% UCL analysis was performed as 'With ND' in ProUCL.
2. The EPCs were calculated using the ProUCL (Version 4.00.02) and the EPCs were selected in accordance with the ProUCL Version 4.0 User Guide (USEPA, 2004) and the Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites (USEPA, 2002).

   Q - qualifier

   J = Estimated Value

   KM = Kaplan-Meier statistical method
3. Insufficient number of detects in the dataset to perform 95th UCL analysis in ProUCL. This typical means there was a single detect in the dataset for this compound.
4. Bold values represent ProUCL recommened values that are greater than maximum detected value for a compound.
5. Insufficient number of detects in dataset to get meaningful results from ProUCL. Warning message from ProUCL regarding dataset:

"This may not be adequate enough to compute meaningful and reliable test statistics and estimates."

"The number of detected data may not be adequate enough to perform GOF tests, bootstrap, and ROS methods."

TABLE 4C
GROUNDWATER EXPOSURE POINT CONCENTRATION SUMMARY SEAD-46
SENECA ARMY DEPOT ACTIVITY

Scenario Timeframe:	Current/Future
Medium:	Groundwater
Exposure Medium:	Groundwater
Exposure Point:	Aquifer--Tap Water

CAS #	Chemical of Potential Concern	Units	Arithmetic Mean	Maximum Detected Concentration mg/L	Q	Reasonable Maximum Exposure (2)		
						Medium EPC Value (mg/L)	Medium EPC Statistic	Medium EPC Rationale
7440-38-2	Arsenic	mg/L	3.1E-03	0.004	J	0.004	MDC	See note
7440-28-0	Thallium	mg/L	4.0E-03	0.004	J	0.004	MDC	See note

Notes:

1. Laboratory duplicates were not included in the assessment.
   Non-detectes were included in the dataset and 95% UCL analysis was performed as 'With ND' in ProUCL.
2. The maximum detected concentration was used as EPC for the RME scenario.
   As residential use of groundwater has been based on the assumption that a single private well can be placed anywhere in the contaminated plume, the MDC across several rounds of monitoring was used as the EPC for groundwater as a conservative step for both the RME scenario.
   EPC = Exposure Point Concentration
   MDC = Maximum Detected Concentration
   RME = Reasonable Maximum Exposure
3. Insufficient number of detects in dataset to get meaningful results from ProUCL. Warning message from ProUCL regarding dataset:
"This may not be adequate enough to compute meaningful and reliable test statistics and estimates."
"The number of detected data may not be adequate enough to perform GOF tests, bootstrap, and ROS methods."

TABLE 4E

AMBIENT AIR EXPOSURE POINT CONCENTRATIONS FOR
CONSTRUCTION WORKER AT SEAD-46
SENECA ARMY DEPOT ACTIVITY

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Air
Exposure Point:	SEAD-46

Equation for Air EPC from Total Soils (mg/m^3) = CStot x PM10 x CF

Variables:
CStot = Chemical Concentration in Total Soils, from EPC data (mg/kg)
PM10 = PM10 Concentration Calculated for Construction Worker= 373 ug/m^3
CF = Conversion Factor = 1E-9 kg/ug

Analyte	Reasonable Maximum Exposure	
	EPC Data for Surface and Subsurface Soil (mg/kg)	**Calculated Air EPC Surface and Subsurface Soil** (mg/m^3)
Benzo(a)anthracene	1.7E-02	7.1E-10
Benzo(a)pyrene	1.2E-02	5.3E-10
Benzo(b)fluoranthene	1.8E-02	7.6E-10
Benzo(ghi)perylene	1.7E-02	7.3E-10
Benzo(k)fluoranthene	1.5E-02	6.5E-10
Chrysene	1.9E-02	8.0E-10
Indeno(1,2,3-cd)pyrene	2.1E-02	9.2E-10
Phenanthrene	1.0E-02	4.5E-10
Dieldrin	1.1E-02	4.9E-10
Endrin ketone	3.1E-03	1.3E-10
Aluminum	1.4E+04	5.9E-04
Arsenic	5.3E+00	2.3E-07
Cobalt	1.2E+01	5.0E-07
Iron	2.7E+04	1.1E-03
Lead	3.1E+01	1.3E-06
Manganese	6.5E+02	2.8E-05
Thallium	2.1E+00	8.9E-08

TABLE 5
CALCULATION OF INTAKE AND RISK FROM THE INGESTION OF SOIL
REASONABLE MAXIMUM EXPOSURE (RME) SEAD-46
SENECA ARMY DEPOT ACTIVITY

Equation for Intake (mg/kg-day) = $\frac{EPC \times IR \times CF \times FI \times EF \times ED \times B}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):

EPC = Exposure Point Concentration in Soil, mg/kg		EF = Exposure Frequency
IR = Ingestion Rate		ED = Exposure Duration
CF = Conversion Factor	B = Bioavailability	BW = Bodyweight
FI = Fraction Ingested		AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Oral RfD	Carc. Slope Oral	Bioavailability	EPC Surface Soil	Park Worker				Construction Worker				Recreational Child Visitor			
					Intake (mg/kg-day)		Hazard Quotient	Cancer Risk	Intake (mg/kg-day)		Hazard Quotient	Cancer Risk	Intake (mg/kg-day)		Hazard Quotient	Cancer Risk
	(mg/kg-day)	(mg/kg-day)-1	(unitless)	(mg/kg)	(Nc)	(Car)			(Nc)	(Car)			(Nc)	(Car)		
Benzo(a)anthracene	N/A	7.3E-01	1	1.7E-02		4.07E-09		3E-09		7.67E-10		6E-10		6.07E-10		4E-10
Benzo(a)pyrene	N/A	7.3E+00	1	1.3E-02		3.07E-09		2E-08		5.80E-10		4E-09		4.59E-10		3E-09
Benzo(b)fluoranthene	N/A	7.3E-01	1	1.8E-02		4.40E-09		3E-09		8.29E-10		6E-10		6.57E-10		5E-10
Benzo(ghi)perylene	N/A	N/A	1	1.7E-02												
Benzo(k)fluoranthene	N/A	7.3E-02	1	1.5E-02		3.66E-09		3E-10		6.91E-10		5E-11		5.47E-10		4E-11
Chrysene	3.00E-04	7.3E-03	1	1.9E-02	1.28E-08	4.55E-09	4E-05	3E-11	6.01E-08	8.59E-10	2E-04	6E-12	9.52E-09	6.80E-10	3E-05	5E-12
Indeno(1,2,3-cd)pyrene	N/A	7.3E-01	1	1.9E-02		4.65E-09		3E-09		8.76E-10		6E-10		6.94E-10		5E-10
Phenanthrene	N/A	N/A	1	1.1E-02												
Dieldrin	5.00E-05	1.6E+01	1	1.4E-02	9.75E-09	3.48E-09	2E-04	6E-08	4.60E-08	6.57E-10	9E-04	1E-08	7.28E-09	5.20E-10	1E-04	8E-09
Endrin ketone	N/A	N/A	1	3.1E-03												
Aluminum	1.00E+00	N/A	1	1.4E+04	9.68E-03		1E-02		4.56E-02		5E-02		7.22E-03		7E-03	
Arsenic	3.00E-04	1.5E+00	1	5.5E+00	3.80E-06	1.36E-06	1E-02	2E-06	1.79E-05	2.56E-07	6E-02	4E-07	2.84E-06	2.03E-07	9E-03	3E-07
Cobalt	3.00E-04	N/A	1	1.2E+01	8.32E-06		3E-02		3.92E-05		1E-01		6.21E-06		2E-02	
Iron	3.00E-01	N/A	1	2.7E+04	1.86E-02		6E-02		8.79E-02		3E-01		1.39E-02		5E-02	
Lead	NA	N/A	1	3.4E+01												
Manganese	2.40E-02	N/A	1	6.7E+02	4.59E-04		2E-02		2.17E-03		9E-02		3.43E-04		1E-02	
Thallium	6.47E-04	N/A	1	2.1E+00	1.45E-06		2E-03		6.83E-06		1E-02		1.08E-06		2E-03	
Total Hazard Quotient and Cancer Risk:							**1E-01**	**2E-06**			**6E-01**	**4E-07**			**1E-01**	**3E-07**

Assumptions for Park Worker		Assumptions for Construction Worker		Assumptions for Recreational Child Visitor	
CF =	1E-06 kg/mg	CF =	1E-06 kg/mg	CF =	1E-06 kg/mg
EPC=	EPC Surface Only	EPC=	EPC Surface and Subsurface	EPC=	EPC Surface Only
BW =	70 kg	BW =	70 kg	BW =	15 kg
IR =	100 mg/day	IR =	330 mg/day	IR =	200 mg/day
FI =	1 unitless	FI =	1 unitless	FI =	1 unitless
EF =	175 days/year	EF =	250 days/year	EF =	14 days/year
ED =	25 years	ED =	1 years	ED =	5 years
AT (Nc) =	9,125 days	AT (Nc) =	365 days	AT (Nc) =	1,825 days
AT (Car) =	25,550 days	AT (Car) =	25,550 days	AT (Car) =	25,550 days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.

TABLE 6
CALCULATION OF INTAKE AND RISK FROM THE INTAKE OF GROUNDWATER
REASONABLE MAXIMUM EXPOSURE (RME) SEAD-46
SENECA ARMY DEPOT ACTIVITY

Equation for Intake (mg/kg-day) = $\frac{EPC \times IR \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):

EPC = Exposure Point Concentration in Groundwater (mg/L)
IR = Intake Rate
EF = Exposure Frequency
ED=Exposure Duration
BW=Bodyweight
AT=Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Oral RfD	Carc. Slope Oral	EPC Groundwater	Park Worker				Construction Worker				Recreational Child Vistor			
				Intake (mg/kg-day)		Hazard Quotient	Cancer Risk	Intake (mg/kg-day)		Hazard Quotient	Cancer Risk	Intake (mg/kg-day)		Hazard Quotient	Cancer Risk
	(mg/kg-day)	(mg/kg-day)-1	(mg/liter)	(Nc)	(Car)			(Nc)	(Car)			(Nc)	(Car)		
Arsenic	3.E-04	1.5E+00	0.004	2.7E-05	9.8E-06	9E-02	1E-05	3.9E-05	5.6E-07	1E-01	8E-07	1.5E-05	1.1E-06	5E-02	2E-06
Thallium	6.E-04	N/A	0.004	2.7E-05	9.8E-06	4E-02		3.9E-05	5.6E-07	6E-02		1.5E-05	1.1E-06	2E-02	
Total Hazard Quotient and Cancer Risk:						**1E-01**	**1E-05**			**2E-01**	**8E-07**			**7E-02**	**2E-06**

Assumptions for Park Worker		Assumptions for Construction Worker		Assumptions for Recreational Child Visitor	
BW =	70 kg	BW =	70 kg	BW =	15 kg
IR =	1 liters/day	IR =	1 liters/day	IR =	1.5 liters/day
EF =	175 days/year	EF =	250 days/year	EF =	14 days/year
ED =	25 years	ED =	1 years	ED =	5 years
AT (Nc) =	9,125 days	AT (Nc) =	365 days	AT (Nc) =	1,825 days
AT (Car) =	25,550 days	AT (Car) =	25,550 days	AT (Car) =	25,550 days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
N/A= Information not available.

TABLE 7
CALCULATION OF ABSORBED DOSE AND RISK FROM DERMAL CONTACT TO SOIL
REASONABLE MAXIMUM EXPOSURE (RME) SEAD-46 SOIL
SENECA ARMY DEPOT ACTIVITY

Equation for Intake (mg/kg-day) = $\frac{EPC \times CF \times SA \times AF \times ABS \times EV \times EF \times ED}{B\ W \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):

EPC = Chemical Concentration in Soil, mg/kg
CF = Conversion Factor
SA = Surface Area Contact
AF = Adherence Factor
ABS = Absorption Factor
EV = Event Frequency
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Dermal RfD	Carc. Slope Dermal	Absorption Fraction*	EPC Surface Soil	EPC from Total Soils	Park Worker				Construction Worker				Recreational Child Visitor			
						Absorbed Dose (mg/kg-day)		Hazard Quotient	Cancer Risk	Absorbed Dose (mg/kg-day)		Hazard Quotient	Cancer Risk	Absorbed Dose (mg/kg-day)		Hazard Quotient	Cancer Risk
	(mg/kg-day)	(mg/kg-day)-1	(unitless)	(mg/kg)	(mg/kg)	(Nc)	(Car)			(Nc)	(Car)			(Nc)	(Car)		
Benzo(a)anthracene	N/A	7.3E-01	1.3E-01	1.7E-02	1.7E-02		3.49E-09		3E-09		2.98E-10		2E-10		2.21E-10		1.61E-10
Benzo(a)pyrene	N/A	7.3E+00	1.3E-01	1.3E-02	1.2E-02		2.64E-09		2E-08		2.20E-10		2E-09		1.67E-10		1.22E-09
Benzo(b)fluoranthene	N/A	7.3E-01	1.3E-01	1.8E-02	1.8E-02		3.77E-09		3E-09		3.17E-10		2E-10		2.39E-10		1.75E-10
Benzo(ghi)perylene	N/A	N/A	1.3E-01	1.7E-02	1.7E-02												
Benzo(k)fluoranthene	N/A	7.3E-02	1.3E-01	1.5E-02	1.5E-02		3.14E-09		2E-10		2.72E-10		2E-11		1.99E-10		1.45E-11
Chrysene	3.00E-04	7.3E-03	1.3E-01	1.9E-02	1.9E-02	1.09E-08	3.91E-09	4E-05	3E-11	2.34E-08	3.34E-10	8E-05	2E-12	3.47E-09	2.48E-10	1.16E-05	1.81E-12
Indeno(1,2,3-cd)pyrene	N/A	7.3E-01	1.3E-01	1.9E-02	2.1E-02		3.99E-09		3E-09		3.86E-10		3E-10		2.53E-10		1.84E-10
Phenanthrene	N/A	N/A	1.3E-01	1.1E-02	1.0E-02												
Dieldrin	5.00E-05	1.6E+01	1E-01	1.4E-02	1.1E-02	6.44E-09	2.30E-09	1E-04	4E-08	1.09E-08	1.56E-10	2E-04	3E-09	2.04E-09	1.46E-10	4.08E-05	2.33E-09
Endrin ketone	N/A	N/A	4E-02	3.1E-03	3.1E-03												
Aluminum	1.00E+00	N/A	1E-03	1.4E+04	1.4E+04	6.39E-05		6E-05		1.32E-04		1E-04		2.02E-05		2.02E-05	
Arsenic	3.00E-04	1.5E+00	3E-02	5.5E+00	5.3E+00	7.52E-07	2.69E-07	3E-03	4E-07	1.54E-06	2.19E-08	5E-03	3E-08	2.38E-07	1.70E-08	7.94E-04	2.55E-08
Cobalt	3.00E-04	N/A	1E-03	1.2E+01	1.2E+01	5.49E-08		2E-04		1.13E-07		4E-04		1.74E-08		5.80E-05	
Iron	3.00E-01	N/A	1E-03	2.7E+04	2.7E+04	1.23E-04		4E-04		2.57E-04		9E-04		3.90E-05		1.30E-04	
Lead	N/A	N/A	1E-03	3.4E+01	3.1E+01												
Manganese	9.60E-04	N/A	1E-03	6.7E+02	6.5E+02	3.03E-06		3E-03		6.26E-06		7E-03		9.61E-07		1.00E-03	
Thallium	6.47E-04	N/A	1E-03	2.1E+00	2.1E+00	9.56E-09		1E-05		1.99E-08		3E-05		3.03E-09		4.68E-06	
Total Hazard Quotient and Cancer Risk:								**7E-03**	**5E-07**			**1E-02**	**4E-08**			**2E-03**	**3E-08**

Assumptions for Park Worker		Assumptions for Construction Worker		Assumptions for Recreational Child Visitor	
CF =	1E-06 kg/mg	CF =	1E-06 kg/mg	CF =	1E-06 kg/mg
CS =	EPC Surface Only	EPC =	EPC Surface and Subsurface	EPC =	EPC Surface Only
BW =	70 kg	BW =	70 kg	BW =	15 kg
SA =	3,300 cm^2	SA =	3,300 cm^2	SA =	2,800 cm^2
AF =	0.2 mg/cm^2-event	AF =	0.3 mg/cm^2-event	AF =	0.2 mg/cm^2-event
EV =	1 event/day	EV =	1 event/day	EV =	1 event/day
EF =	175 days/year	EF =	250 days/year	EF =	14 days/year
ED =	25 years	ED =	1 years	ED =	5 years
AT (Nc) =	9,125 days	AT (Nc) =	365 days	AT (Nc) =	1,825 days
AT (Car) =	25,550 days	AT (Car) =	25,550 days	AT (Car) =	25,550 days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.
* Absorption factors from Exhibit 3-4 of USEPA (2004) Supplemental Guidance for Dermal Risk Assessment, Part E of Risk Assessment Guidance for Superfund, Human Health Evaluation Manual (Volume I).
Absorption factor for VOC was assumed to be 0.01 and metals not presented in the EPA (2004) document, assumed to be 0.001 in accordance with the USEPA Region 4 (2000)
Supplemental Guidance to RAGS: Region 4 Bulletins, Human Health Risk Assessment Bulletins (http://www.epa.gov/region4/waste/ots/healtbul.htm).
Absorption factor for pesticides was assumed to be 0.037 in accordance with the average absorption factor of chlordane (0.03), DDT (0.04), and lindane (0.04) in accordance with USEPA Region 4 (2000).

TABLE 8
CALCULATION OF ABSORBED DOSE AND RISK FROM DERMAL CONTACT TO GROUNDWATER
REASONABLE MAXIMUM EXPOSURE (RME) - SEAD-46
SENECA ARMY DEPOT ACTIVITY

Equation for Dermal (mg/kg-day) = $\frac{DA \times SA \times EF \times ED \times EV}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):

DA = Absorbed Dose per Event, mg/cm^2-event
SA = Surface Area Contact
EF = Exposure Frequency
EV = Event Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Absorbed Dose per Event (DA):

For inorgan: $DA = Kp \times EPC \times t_{event} \times C$

For organic: if $t_{event} < t^*$, then: $DA_{event} = 2\ FA \times K_p \times EPC \times C \left((6\ t_{event} \times t_{event}) / p \right)^{1/2}$

if $t_{event} > t^*$, then: $DA_{event} = FA \times K_p \times EPC \times C \left[(t_{event} / 1 + B) + 2\ t_{event} \{ (1 + 3\ B + 3\ B^2) / (1 + B)^2 \} \right]$

K_p = Permeability Coefficient, cm/hr
EPC = EPC in Groundwater, mg/L
C = Conversion Factor, 10^{-3} L/cm^3

B = Dimensionless ratio of the permeability coefficient of a compound through the stratum corneum relative to its permeability coefficient across the viable epidermis (ve) (dimensionless)
FA = Fraction absorbed water (dimensionless)

$B = Kp\ (MW)^{1/2} / 2.6$

If $B < 0.6$, then $t^* = 2.4\ t_{event}$

t_{event} is Lag Time per event (hr/event) = $0.105 \times 10^{(0.0056 \times MW)}$

If $B > 0.6$, then $t^* = 6 t_{event} (b\text{-}SQRT(b^2\text{-}c^2))$

t^* is time to reach steady-state (hr)

$b = ((2(1+B)^2)/p) - c$

t_{event} = duration of event, hr/event

$c = (1+3B+3B^2)/3(1+B)$

Equation for Hazard Quotient = $\frac{\text{Chronic Daily Intake (Nc)}}{\text{Reference Dose}}$

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Dermal RfD (mg/kg-day)	Carc. Slope Dermal (mg/kg-day)-1	Permeability Coefficient K_p (cm/hr)	t_{event} (hr/event)	Fraction Absorbed Water	B	t* (hour)	EPC Ground Water (mg/L)	Absorbed Dose/Event (mg/cm^2-event)	Park Worker Intake (mg/kg-day) (Nc)	Park Worker Intake (mg/kg-day) (Car)	Park Worker Hazard Quotient	Park Worker Cancer Risk	Construction Worker Intake (mg/kg-day) (Nc)	Construction Worker Intake (mg/kg-day) (Car)	Construction Worker Hazard Quotient	Construction Worker Cancer Risk	Recreational Child Visitor Intake (mg/kg-day) (Nc)	Recreational Child Visitor Intake (mg/kg-day) (Car)	Recreational Child Visitor Hazard Quotient	Recreational Child Visitor Cancer Risk
Arsenic	3.E-04	1.5E+00	1.00E-03	8.9.E-01	1.00E+00	5.0.E-03	2.1.E+00	4.E-03	7.4.E-09					7E-08	1E-09	2E-04	2E-09				
Thallium	6.E-04	N/A	1.00E-03	1.1.E-01	1.00E+00	0.0.E+00	2.5.E-01	4.E-03	2.5.E-09					2E-08		4E-05					
Total Hazard Quotient and Cancer Risk:																**3E-04**	**2E-09**				

Assumptions for Construction Worker

BW =	70	kg
SA =	2,490	cm2
EV=	1	event/day
EF =	100	days/year
ED =	1	years
t_{event} =	0.5	hr/event
AT (Nc) =	365	days
AT (Car) =	25,550	days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA = Information not available.
Kp value from Exhibit B1 or B-2 of "Supplemental Guidance for Dermal Risk Assessment", Part E of Risk Assessment Guidance for Superfund, Human Health Evaluation Manual (Volume 1), August 16, 2004. For chemicals that did not have a Kp value listed in Exibit B-1 or B-2, Kp was calculated using:
$Kp = 10^{(-2.80+0.66(\log Kow)-0.0056(MW))}$

TABLE 9
CALCULATION OF INTAKE AND RISK FROM INHALATION OF GROUNDWATER (WHILE SHOWERING)
REASONABLE MAXIMUM EXPOSURE (RME) SEAD-46
SENECA ARMY DEPOT ACTIVITY

Equation for Intake (mg/kg-day) = $\frac{EPC \times IR \times t_{event} \times EV \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):

EPC =Exposure Point Concentration in Air (mg/m^3)
t_{event} = Event Duration
IR = Inhalation Rate
EF = Exposure Frequency
ED=Exposure Duration
EV = Event Frequency
BW=Body Weight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Inhalation RfD (mg/kg-day)	Carc. Slope Inhalation (mg/kg-day)-1	EPC* Air Adult (mg/m^3)	EPC* Air Child (mg/m^3)	Resident Adult Intake (mg/kg-day) (Nc)	Resident Adult Intake (mg/kg-day) (Car)	Resident Adult Hazard Quotient	Resident Adult Contribution to Lifetime Cancer Risk	Resident Child Intake (mg/kg-day) (Nc)	Resident Child Intake (mg/kg-day) (Car)	Resident Child Hazard Quotient	Resident Child Contribution to Lifetime Cancer Risk	Resident Total Lifetime Cancer Risk
Arsenic	N/A	4.30E-03	1.89E-02	1.89E-02									
Thallium	N/A	N/A	NA	NA									
Total Hazard Quotient and Cancer Risk:													

Assumptions for Future Resident (Adult)		Assumptions for Future Resident (Child)	
BW =	70 kg	BW =	15 kg
IR =	1.0 m^3/hr	IR =	1.0 m^3/hr
t_{event} =	0.58 hr/event	t_{event} =	1.0 hr/event
EV =	1 event/day	EV =	1 event/day
EF =	350 days/year	EF =	350 days/year
ED =	24 years	ED =	6 years
AT (Nc) =	8,760 days	AT (Nc) =	2,190 days
AT (Car) =	25,550 days	AT (Car) =	25,550 days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.
* EPC air is the concentration of chemical available for inhalation after accounting for partitioning between the air and water in the shower.

TABLE 10
CALCULATION OF INTAKE AND RISK FROM INHALATION OF DUST IN AMBIENT AIR
REASONABLE MAXIMUM EXPOSURE (RME) SEAD-46 SOIL
SENECA ARMY DEPOT ACTIVITY

Equation for Intake (mg/kg-day) = $\frac{EPC \times IR \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):

EPC = EPC in Air, mg/m3
IR = Inhalation Rate
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Inhalation RfD	Carc. Slope Inhalation	Air EPC from Surface Soil	Air EPC from Total Soils	Park Worker				Construction Worker				Recreational Child Visitor			
					Intake (mg/kg-day)		Hazard Quotient	Cancer Risk	Intake (mg/kg-day)		Hazard Quotient	Cancer Risk	Intake (mg/kg-day)		Hazard Quotient	Cancer Risk
	(mg/kg-day)	(mg/kg-day)-1	(mg/m3)	(mg/m3)	(Nc)	(Car)			(Nc)	(Car)			(Nc)	(Car)		
Benzo(a)anthracene	N/A	N/A	7.1E-10	7.1E-10												
Benzo(a)pyrene	N/A	3.85E+00	5.4E-10	5.3E-10		1.06E-11		4E-11		7.64E-13		3E-12		8.59E-13		3E-12
Benzo(b)fluoranthene	N/A	3.85E-01	7.7E-10	7.6E-10		1.51E-11		6E-12		1.10E-12		4E-13		1.23E-12		5E-13
Benzo(ghi)perylene	N/A	N/A	7.3E-10	7.3E-10												
Benzo(k)fluoranthene	N/A	3.85E-01	6.4E-10	6.5E-10		1.26E-11		5E-12		9.44E-13		4E-13		1.02E-12		4E-13
Chrysene	N/A	3.85E-02	8.0E-10	8.0E-10		1.57E-11		6E-13		1.16E-12		4E-14		1.27E-12		5E-14
Indeno(1,2,3-cd)pyrene	N/A	3.85E-01	8.2E-10	9.2E-10		1.60E-11		6E-12		1.34E-12		5E-13		1.30E-12		5E-13
Phenanthrene	N/A	N/A	4.7E-10	4.5E-10												
Dieldrin	N/A	1.61E+01	6.1E-10	4.9E-10		1.20E-11		2E-10		7.07E-13		1E-11		9.73E-13		2E-11
Endrin ketone	N/A	N/A	1.3E-10	1.3E-10												
Aluminum	1.43E-03	N/A	6.1E-04	5.9E-04	3.33E-05		2E-02		5.98E-05		4E-02		1.35E-05		9E-03	
Arsenic	N/A	1.51E+01	2.4E-07	2.3E-07		4.67E-09		7E-08		3.31E-10		5E-09		3.79E-10		6E-09
Cobalt	1.71E-06	3.15E+01	5.2E-07	5.0E-07	2.86E-08	1.02E-08	2E-02	3E-07	5.12E-08	7.32E-10	3E-02	2E-08	1.16E-08	8.31E-10	7E-03	3E-08
Iron	N/A	N/A	1.2E-03	1.1E-03												
Lead	N/A	N/A	1.5E-06	1.3E-06												
Manganese	1.43E-05	N/A	2.9E-05	2.8E-05	1.58E-06		1E-01		2.83E-06		2E-01		6.42E-07		4E-02	
Thallium	N/A	N/A	9.1E-08	8.9E-08												
Total Hazard Quotient and Cancer Risk:							**2E-01**	**4E-07**			**3E-01**	**3E-08**			**6E-02**	**3E-08**

Assumptions for Park Worker		Assumptions for Construction Worker		Assumptions for Recreational Child Visitor	
CA =	EPC Surface Only	CA =	EPC Surface and Sub-Surface	CA =	EPC Surface Only
BW =	70 kg	BW =	70 kg	BW =	15 kg
IR =	8 m3/day	IR =	10.4 m3/day	IR =	8.7 m3/day
EF =	175 days/year	EF =	250 days/year	EF =	14 days/year
ED =	25 years	ED =	1 year	ED =	5 years
AT (Nc) =	9,125 days	AT (Nc) =	365 days	AT (Nc) =	1,825 days
AT (Car) =	25,550 days	AT (Car) =	25,550 days	AT (Car) =	25,550 days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.

TABLE 11
CALCULATION OF TOTAL NONCARCINOGENIC AND CARCINOGENIC RISKS SEAD-46
REASONABLE MAXIMUM EXPOSURE (RME)
SENECA ARMY DEPOT ACTIVITY

RECEPTOR	EXPOSURE ROUTE	REASONABLE MAXIMUM EXPOSURE (RME)			
		HAZARD INDEX		CANCER RISK	
		Hazard Index	Percent	Cancer Risk	Percent
PARK WORKER	Inhalation of Dust in Ambient Air	2E-01	35%	4E-07	2%
	Ingestion of Soil	1E-01	32%	2E-06	12%
	Intake of Groundwater	1E-01	31%	1E-05	83%
	Dermal Contact to Soil	7E-03	2%	5E-07	3%
	Dermal Contact to Groundwater	NA		NA	
	TOTAL RECEPTOR RISK (Nc & Car)	*4E-01*	100%	*2E-05*	100%
CONSTRUCTION WORKER	Inhalation of Dust in Ambient Air	3E-01	24%	3E-08	2%
	Ingestion of Soil	6E-01	57%	4E-07	31%
	Intake of Groundwater	2.E-01	17%	8E-07	64%
	Dermal Contact to Soil	1E-02	1%	4E-08	3%
	Dermal Contact to Groundwater	3E-04	0%	2E-09	0%
	TOTAL RECEPTOR RISK (Nc & Car)	*1E+00*	100%	*1E-06*	100%
RECREATIONAL CHILD VISITOR	Inhalation of Dust in Ambient Air	6E-02	26%	3E-08	2%
	Ingestion of Soil	1E-01	42%	3E-07	16%
	Intake of Groundwater	7E-02	31%	2E-06	81%
	Dermal Contact to Soil	2E-03	1%	3E-08	1%
	Dermal Contact to Groundwater	NA		NA	
	TOTAL RECEPTOR RISK (Nc & Car)	*2E-01*	100%	*2E-06*	100%
RESIDENT (ADULT)	Inhalation of Dust in Ambient Air	8E-01	48%	2E-06	3%
	Inhalation of Groundwater	NA		NA	
	Ingestion of Soil	3E-01	17%	4E-06	6%
	Intake of Groundwater	5E-01	34%	6E-05	88%
	Dermal Contact to Soil	8E-03	0%	5E-07	1%
	Dermal Contact to Groundwater	1E-02	1%	1E-06	2%
	TOTAL RECEPTOR RISK (Nc & Car)	*2E+00*	100%	*6E-05*	100%
RESIDENT (CHILD)	Inhalation of Dnst in Ambient Air	2E+00	26%	1E-06	2%
	Inhalation of Groundwater	NA		NA	
	Ingestion of Soil	2E+00	42%	1E-05	16%
	Intake of Groundwater	2E+00	31%	5E-05	81%
	Dermal Contact to Soil	5E-02	1%	9E-07	1%
	Dermal Contact to Groundwater	2E-02	0%	6E-07	1%
	TOTAL RECEPTOR RISK (Nc & Car)	*6E+00*	100%	*6E-05*	100%
RESIDENT (TOTAL)	Inhalation of Dust in Ambient Air			3E-06	2%
	Inhalation of Groundwater			0E+00	0%
	Ingestion of Soil			1E-05	11%
	Intake Groundwater			1E-04	84%
	Dermal Contact to Soil			1E-06	1%
	Dermal Contact to Groundwater			2E-06	2%
	TOTAL RECEPTOR CANCER RISK			*1E-04*	100%

NA - Not Applicable

TABLE 12
SEAD-57 RESIDENT ADULT LEAD BLOOD CALCULATION
SENECA ARMY DEPOT ACTIVITY

Calculations of Blood Lead Concentrations (PbBs)

U.S. EPA Technical Review Workgroup for Lead, Adult Lead Committee

Version date 6/21/09

Variable	Description of Variable	Units	GSDi and PbBo from Analysis of NHANES 1999-2004	GSDi and PbBo from Analysis of NHANES III (Phases 1&2)
PbS	Soil lead concentration	ug/g or ppm	31.0	31.0
$R_{fetal/maternal}$	Fetal/maternal PbB ratio	--	0.9	0.9
BKSF	Biokinetic Slope Factor	ug/dL per ug/day	0.4	0.4
GSD_i	Geometric standard deviation PbB	--	1.8	2.1
PbB_0	Baseline PbB	ug/dL	1.0	1.5
IR_S	Soil ingestion rate (including soil-derived indoor dust)	g/day	0.050	0.050
IR_{S+D}	Total ingestion rate of outdoor soil and indoor dust	g/day	--	--
W_S	Weighting factor; fraction of IR_{S+D} ingested as outdoor soil	--	--	--
K_{SD}	Mass fraction of soil in dust	--	--	--
$AF_{S,D}$	Absorption fraction (same for soil and dust)	--	0.12	0.12
$EF_{S,D}$	Exposure frequency (same for soil and dust)	days/yr	219	219
$AT_{S,D}$	Averaging time (same for soil and dust)	days/yr	365	365
PbB_{adult}	**PbB of adult worker, geometric mean**	**ug/dL**	**1.0**	**1.5**
$PbB_{fetal,0.95}$	95th percentile PbB among fetuses of adult workers	ug/dL	2.5	4.7
PbB_t	Target PbB level of concern (e.g., 10 ug/dL)	ug/dL	10.0	10.0
$P(PbB_{fetal} > PbB_t)$	**Probability that fetal PbB > PbB_t, assuming lognormal distribution**	**%**	**0.0%**	**0.4%**

Source: U.S. EPA (1996). Recommendations of the Technical Review Workgroup for Lead for an Interim Approach to Assessing Risks Associated with Adult Exposures to Lead in Soil

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Age	Soil (µg Pb/g)	House Dust (µg Pb/g)
.5-1	33.900	33.730
1-2	33.900	33.730
2-3	33.900	33.730
3-4	33.900	33.730
4-5	33.900	33.730
5-6	33.900	33.730
6-7	33.900	33.730

****** Alternate Intake ******

Age	Alternate (µg Pb/day)
.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

****** Maternal Contribution: Infant Model ******

Maternal Blood Concentration: 1.000 µg Pb/dL

****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:
****

Year	Air (µg/day)	Diet (µg/day)	Alternate (µg/day)	Water (µg/day)
.5-1	0.021	1.101	0.000	0.390
1-2	0.034	0.953	0.000	0.972
2-3	0.062	1.039	0.000	1.014
3-4	0.067	0.999	0.000	1.038
4-5	0.067	0.959	0.000	1.082
5-6	0.093	1.010	0.000	1.143
6-7	0.093	1.095	0.000	1.164

Year	Soil+Dust (µg/day)	Total (µg/day)	Blood (µg/dL)
.5-1	0.840	2.351	1.3
1-2	1.331	3.290	1.4
2-3	1.335	3.450	1.3
3-4	1.340	3.443	1.2
4-5	0.998	3.105	1.1
5-6	0.899	3.146	1.0
6-7	0.850	3.202	0.9

Attachment B

SEAD-57 – Explosive Ordinance Detonation Area

TABLE 1
SEAD-57 SOIL SAMPLE RESULTS
SENECA ARMY DEPOT ACTIVITY

Parameter	Units	Maximum Concentration	Frequency of Detection	Criteria Value [1]	Number of Exceedances	Number of Times Detected	Number of Samples Analyzed [2]	SEAD-57 SD57-11 Ditchsoil 573008 0 0.2 01/05/00 DU P1S1 RI Value (Q)	SEAD-57 SD57-10 Ditchsoil 573031 0 0.2 01/10/00 DU P1S1 RI Value (Q)	SEAD-57 SD57-16 Ditchsoil 573000 0 0.2 01/04/00 SA P1S1 RI Value (Q)	SEAD-57 SD57-13 Ditchsoil 573001 0 0.2 01/04/00 SA P1S1 RI Value (Q)	SEAD-57 SD57-24 Ditchsoil 573002 0 0.2 01/04/00 SA P1S1 RI Value (Q)	SEAD-57 SD57-14 Ditchsoil 573003 0 0.2 01/05/00 SA P1S1 RI Value (Q)	SEAD-57 SD57-17 Ditchsoil 573004 0 0.2 01/05/00 SA P1S1 RI Value (Q)	SEAD-57 SD57-18 Ditchsoil 573005 0 0.2 01/05/00 SA P1S1 RI Value (Q)	SEAD-57 SD57-26 Ditchsoil 573006 0 0.2 01/05/00 SA P1S1 RI Value (Q)	SEAD-57 SD57-11 Ditchsoil 573007 0 0.2 01/05/00 SA P1S1 RI Value (Q)
Volatile Organic Compounds																	
1,1,1-Trichloroethane	UG/KG	0	0%	680	0	0	127	14 U	11 U	13 U	13 U	13 U	13 U	12 U	17 U	16 U	15 U
1,1,2,2-Tetrachloroethane	UG/KG	0	0%	0	0	0	127	14 U	11 U	13 U	13 U	13 U	13 U	12 U	17 U	16 U	15 U
1,1,2-Trichloroethane	UG/KG	0	0%	0	0	0	127	14 U	11 U	13 U	13 U	13 U	13 U	12 U	17 U	16 U	15 U
1,1-Dichloroethane	UG/KG	0	0%	270	0	0	127	14 U	11 U	13 U	13 U	13 U	13 U	12 U	17 U	16 U	15 U
1,1-Dichloroethene	UG/KG	0	0%	330	0	0	127	14 U	11 U	13 U	13 U	13 U	13 U	12 U	17 U	16 U	15 U
1,2-Dichloroethane	UG/KG	0	0%	20	0	0	127	14 U	11 U	13 U	13 U	13 U	13 U	12 U	17 U	16 U	15 U
1,2-Dichloroethene (total)	UG/KG	0	0%	190	0	0	127	14 U	11 U	13 U	13 U	13 U	13 U	12 U	17 U	16 U	15 U
1,2-Dichloropropane	UG/KG	0	0%	0	0	0	127	14 U	11 U	13 U	13 U	13 U	13 U	12 U	17 U	16 U	15 U
Acetone	UG/KG	700	74%	50	87	94	127	110 J	110	300 J	210 J	220 J	220 J	100 J	260 J	330 J	100 J
Benzene	UG/KG	1	2%	60	0	2	127	14 U	11 U	13 U	13 U	13 U	13 U	12 U	17 U	16 U	15 U
Bromodichloromethane	UG/KG	0	0%	0	0	0	127	14 U	11 U	13 U	13 U	13 U	13 U	12 U	17 U	16 U	15 U
Bromoform	UG/KG	0	0%	0	0	0	127	14 U	11 U	13 U	13 U	13 U	13 U	12 U	17 U	16 U	15 U
Carbon disulfide	UG/KG	22	11%	0	0	14	127	14 U	11 U	3 J	2 J	2 J	2 J	12 U	17 U	2 J	15 U
Carbon tetrachloride	UG/KG	0	0%	760	0	0	127	14 U	11 U	13 U	13 U	13 U	13 U	12 U	17 U	16 U	15 U
Chlorobenzene	UG/KG	0	0%	1100	0	0	127	14 U	11 U	13 U	13 U	13 U	13 U	12 U	17 U	16 U	15 U
Chlorodibromomethane	UG/KG	0	0%	0	0	0	127	14 U	11 U	13 U	13 U	13 U	13 U	12 U	17 U	16 U	15 U
Chloroethane	UG/KG	0	0%	0	0	0	127	14 U	11 U	13 U	13 U	13 U	13 U	12 U	17 U	16 U	15 U
Chloroform	UG/KG	7	1%	370	0	1	127	14 U	11 U	13 U	13 U	13 U	13 U	12 U	17 U	16 U	15 U
Cis-1,3-Dichloropropene	UG/KG	0	0%	0	0	0	127	14 U	11 U	13 U	13 U	13 U	13 U	12 U	17 U	16 U	15 U
Ethyl benzene	UG/KG	0	0%	1000	0	0	127	14 U	11 U	13 U	13 U	13 U	13 U	12 U	17 U	16 U	15 U
Methyl bromide	UG/KG	0	0%	0	0	0	127	14 U	11 U	13 U	13 U	13 U	13 U	12 U	17 U	16 U	15 U
Methyl butyl ketone	UG/KG	0	0%	0	0	0	127	14 U	11 U	13 U	13 U	13 U	13 U	12 U	17 U	16 U	15 U
Methyl chloride	UG/KG	0	0%	0	0	0	127	14 U	11 U	13 U	13 U	13 U	13 U	12 U	17 U	16 U	15 U
Methyl ethyl ketone	UG/KG	64	62%	120	0	79	127	14	12	36 J	20 J	19 J	25 J	13	26 J	49 J	13 J
Methyl isobutyl ketone	UG/KG	0	0%	0	0	0	127	14 U	11 U	13 U	13 U	13 U	13 U	12 U	17 U	16 U	15 U
Methylene chloride	UG/KG	1	2%	50	0	2	127	14 U	11 U	13 U	13 U	13 U	13 U	12 U	17 U	16 U	15 U
Styrene	UG/KG	0	0%	0	0	0	127	14 U	11 U	13 U	13 U	13 U	13 U	12 U	17 U	16 U	15 U
Tetrachloroethene	UG/KG	6	6%	1300	0	7	127	14 U	11 U	13 U	13 U	13 U	13 U	12 U	17 U	16 U	15 U
Toluene	UG/KG	33	65%	700	0	82	127	2 J	6 J	10 J	8 J	7 J	3 J	4 J	8 J	6 J	5 J
Total Xylenes	UG/KG	2	2%	260	0	3	127	14 U	11 U	13 U	13 U	13 U	13 U	12 U	17 U	16 U	15 U
Trans-1,3-Dichloropropene	UG/KG	0	0%	0	0	0	127	14 U	11 U	13 U	13 U	13 U	13 U	12 U	17 U	16 U	15 U
Trichloroethene	UG/KG	0	0%	470	0	0	127	14 U	11 U	13 U	13 U	13 U	13 U	12 U	17 U	16 U	15 U
Vinyl chloride	UG/KG	0	0%	20	0	0	127	14 U	11 U	13 U	13 U	13 U	13 U	12 U	17 U	16 U	15 UJ
Semivolatile Organic Compounds																	
1,2,4-Trichlorobenzene	UG/KG	0	0%	0	0	0	119	97 U	94 UJ	90 U	91 U	89 U	97 U	90 U	92 U	95 U	91 U
1,2-Dichlorobenzene	UG/KG	0	0%	1100	0	0	119	97 U	94 UJ	90 U	91 U	89 U	97 U	90 U	92 U	95 U	91 U
1,3-Dichlorobenzene	UG/KG	0	0%	2400	0	0	119	97 U	94 UJ	90 U	91 U	89 U	97 U	90 U	92 U	95 U	91 U
1,4-Dichlorobenzene	UG/KG	0	0%	1800	0	0	119	97 U	94 UJ	90 U	91 U	89 U	97 U	90 U	92 U	95 U	91 U
2,2'-oxybis(1-Chloropropane)	UG/KG	0	0%	0	0	0	18										
2,4,5-Trichlorophenol	UG/KG	0	0%	0	0	0	119	240 U	240 UJ	220 U	230 U	220 U	240 U	220 U	230 U	240 U	230 U
2,4,6-Trichlorophenol	UG/KG	0	0%	0	0	0	119	97 U	94 UJ	90 U	91 U	89 U	97 U	90 U	92 U	95 U	91 U
2,4-Dichlorophenol	UG/KG	0	0%	0	0	0	119	97 U	94 UJ	90 U	91 U	89 U	97 U	90 U	92 U	95 U	91 U
2,4-Dimethylphenol	UG/KG	0	0%	0	0	0	119	97 U	94 UJ	90 U	91 U	89 U	97 U	90 U	92 U	95 U	91 U
2,4-Dinitrophenol	UG/KG	0	0%	0	0	0	119	240 UJ	240 UR	220 UR	230 UR	220 UR	240 UR	220 UR	230 UR	240 UR	230 UJ
2,4-Dinitrotoluene	UG/KG	0	0%	0	0	0	119	97 U	94 UJ	90 U	91 U	89 U	97 U	90 U	92 U	95 U	91 U
2,6-Dinitrotoluene	UG/KG	0	0%	0	0	0	119	97 U	94 UJ	90 U	91 U	89 U	97 U	90 U	92 U	95 U	91 U
2-Chloronaphthalene	UG/KG	0	0%	0	0	0	119	97 U	94 UJ	90 U	91 U	89 U	97 U	90 U	92 U	95 U	91 U
2-Chlorophenol	UG/KG	0	0%	0	0	0	119	97 U	94 UJ	90 U	91 U	89 U	97 U	90 U	92 U	95 U	91 U
2-Methylnaphthalene	UG/KG	750	3%	0	0	3	119	97 U	94 UJ	90 U	91 U	89 U	97 U	90 U	92 U	95 U	91 U
2-Methylphenol	UG/KG	0	0%	330	0	0	119	97 U	94 UJ	90 U	91 U	89 U	97 U	90 U	92 U	95 U	91 U
2-Nitroaniline	UG/KG	0	0%	0	0	0	119	240 U	240 UJ	220 U	230 U	220 U	240 U	220 U	230 U	240 U	230 U
2-Nitrophenol	UG/KG	0	0%	0	0	0	119	97 U	94 UJ	90 U	91 U	89 U	97 U	90 U	92 U	95 U	91 U
3,3'-Dichlorobenzidine	UG/KG	0	0%	0	0	0	119	97 UJ	94 UJ	90 UJ	91 UJ	89 UJ	97 UJ	90 UJ	92 UJ	95 UJ	91 UJ
3-Nitroaniline	UG/KG	0	0%	0	0	0	119	240 UJ	240 UJ	220 UJ	230 UJ	220 UJ	240 UJ	220 UJ	230 UJ	240 UJ	230 UJ
4,6-Dinitro-2 methylphenol	UG/KG	0	0%	0	0	0	119	240 U	240 UJ	220 UJ	230 UJ	220 UJ	240 UJ	220 UJ	230 UJ	240 UJ	230 U
4-Bromophenyl phenyl ether	UG/KG	0	0%	0	0	0	119	97 U	94 UJ	90 U	91 U	89 U	97 U	90 U	92 U	95 U	91 U
4-Chloro-3-methylphenol	UG/KG	0	0%	0	0	0	119	97 U	94 UJ	90 U	91 U	89 U	97 U	90 U	92 U	95 U	91 U
4-Chloroaniline	UG/KG	0	0%	0	0	0	119	97 UJ	94 UJ	90 UJ	91 UJ	89 UJ	97 UJ	90 UJ	92 UJ	95 UJ	91 UJ
4-Chlorophenyl phenyl ether	UG/KG	0	0%	0	0	0	119	97 U	94 UJ	90 U	91 U	89 U	97 U	90 U	92 U	95 U	91 U
4-Methylphenol	UG/KG	13	3%	330	0	3	119	97 U	94 UJ	90 U	91 U	89 U	97 U	90 U	92 U	95 U	91 U
4-Nitroaniline	UG/KG	0	0%	0	0	0	119	240 U	240 UJ	220 U	230 U	220 U	240 U	220 U	230 U	240 U	230 U
4-Nitrophenol	UG/KG	0	0%	0	0	0	119	240 UJ	240 UJ	220 UJ	230 UJ	220 UJ	240 UJ	220 UJ	230 UJ	240 UJ	230 UJ
Acenaphthene	UG/KG	0	0%	20000	0	0	119	97 U	94 UJ	90 U	91 U	89 U	97 U	90 U	92 U	95 U	91 U
Acenaphthylene	UG/KG	0	0%	100000	0	0	119	97 U	94 UJ	90 U	91 U	89 U	97 U	90 U	92 U	95 U	91 U

TABLE 1
SEAD-57 SOIL SAMPLE RESULTS
SENECA ARMY DEPOT ACTIVITY

Parameter	Units	Maximum Concentration	Frequency of Detection	Criteria Value [1]	Number of Exceedances	Number of Times Detected	Number of Samples Analyzed [2]	SEAD-57 SD57-11 Ditchsoil 573008 0 0.2 01/05/00 DU P1S1 RI Value (Q)	SEAD-57 SD57-10 Ditchsoil 573031 0 0.2 01/10/00 DU P1S1 RI Value (Q)	SEAD-57 SD57-16 Ditchsoil 573000 0 0.2 01/04/00 SA P1S1 RI Value (Q)	SEAD-57 SD57-13 Ditchsoil 573001 0 0.2 01/04/00 SA P1S1 RI Value (Q)	SEAD-57 SD57-24 Ditchsoil 573002 0 0.2 01/04/00 SA P1S1 RI Value (Q)	SEAD-57 SD57-14 Ditchsoil 573003 0 0.2 01/05/00 SA P1S1 RI Value (Q)	SEAD-57 SD57-17 Ditchsoil 573004 0 0.2 01/05/00 SA P1S1 RI Value (Q)	SEAD-57 SD57-18 Ditchsoil 573005 0 0.2 01/05/00 SA P1S1 RI Value (Q)	SEAD-57 SD57-26 Ditchsoil 573006 0 0.2 01/05/00 SA P1S1 RI Value (Q)	SEAD-57 SD57-11 Ditchsoil 573007 0 0.2 01/05/00 SA P1S1 RI Value (Q)
Endosulfan I	UG/KG	5.2	1%	2400	0	1	119	2.5 U	2.4 U	2.3 U	2.4 U	2.3 U	2.5 U	2.3 U	2.4 U	2.5 U	2.3 U
Endosulfan II	UG/KG	3.1	1%	2400	0	1	119	4.8 U	4.7 U	4.5 U	4.6 U	4.4 U	4.8 U	4.5 U	4.6 U	4.8 U	4.6 U
Endosulfan sulfate	UG/KG	0	0%	2400	0	0	119	4.8 U	4.7 U	4.5 U	4.6 U	4.4 U	4.8 U	4.5 U	4.6 U	4.8 U	4.6 U
Endrin	UG/KG	0	0%	14	0	0	119	4.8 U	4.7 U	4.5 U	4.6 U	4.4 U	4.8 U	4.5 U	4.6 U	4.8 U	4.6 U
Endrin aldehyde	UG/KG	3.8	1%	0	0	1	119	4.8 U	4.7 U	4.5 U	4.6 U	4.4 U	4.8 U	4.5 U	3.8 J	4.8 U	4.6 U
Endrin ketone	UG/KG	4	1%	0	0	1	119	4.8 U	4.7 U	4.5 U	4.6 U	4.4 U	4.8 U	4.5 U	4 J	4.8 U	4.6 U
Gamma-BHC Lindane	UG/KG	0	0%	100	0	0	119	2.5 U	2.4 U	2.3 U	2.4 U	2.3 U	2.5 U	2.3 U	2.4 U	2.5 U	2.3 U
Gamma-Chlordane	UG/KG	0	0%	0	0	0	119	2.5 U	2.4 U	2.3 U	2.4 U	2.3 U	2.5 U	2.3 U	2.4 U	2.5 U	2.3 U
Heptachlor	UG/KG	1.6	1%	42	0	1	119	2.5 U	2.4 U	2.3 U	2.4 U	2.3 U	1.6 J	2.3 U	2.4 U	2.5 U	2.3 U
Heptachlor epoxide	UG/KG	2	1%	0	0	1	119	2.5 U	2.4 U	2.3 U	2.4 U	2.3 U	2.5 U	2.3 U	2.4 U	2.5 U	2.3 U
Methoxychlor	UG/KG	0	0%	0	0	0	119	25 U	24 U	23 U	24 U	23 U	25 UJ	23 U	24 U	25 U	23 U
Toxaphene	UG/KG	0	0%	0	0	0	119	250 U	240 U	230 U	240 U	230 U	250 U	230 U	240 U	250 U	230 U
Herbicides																	
2,4,5-T	UG/KG	0	0%	0	0	0	18										
2,4,5-TP Silvex	UG/KG	0	0%	3800	0	0	18										
2,4-D	UG/KG	0	0%	0	0	0	18										
2,4-DB	UG/KG	0	0%	0	0	0	18										
Dalapon	UG/KG	0	0%	0	0	0	18										
Dicamba	UG/KG	0	0%	0	0	0	18										
Dichloroprop	UG/KG	0	0%	0	0	0	18										
Dinoseb	UG/KG	0	0%	0	0	0	18										
MCPA	UG/KG	0	0%	0	0	0	18										
MCPP	UG/KG	0	0%	0	0	0	18										
Metals and Cyanide																	
Aluminum	MG/KG	22900	100%	0	0	119	119	16500	12900 J	16200	17700	16000	17000	14100	16800	12400	15100
Antimony	MG/KG	6.5	49%	0	0	58	119	0.63 UR	0.99 J	0.7 J	0.54 UR	0.36 J	0.86 J	0.96 J	0.61 UR	0.75 J	0.46 UR
Arsenic	MG/KG	17.8	92%	13	1	110	119	4.7	4.6	7	5.9	5	5.7	4.8	4.1	**17.8**	4.8
Barium	MG/KG	237	100%	350	0	119	119	237	209	119	217	107	131	93.6	139	85.6	158
Beryllium	MG/KG	1.8	100%	7.2	0	119	119	0.98 J	0.81 J	1.2 J	1.8	0.87 J	1.1	0.87 J	1 J	0.73 J	0.94 J
Cadmium	MG/KG	28.6	22%	2.5	6	26	119	**13.5** J	**3.3**	0.42 J	0.22 J	0.19 U	0.17 U	0.17 U	2 J	0.19 U	**28.6** J
Calcium	MG/KG	213000	100%	0	0	119	119	3860	2590	4440	10800	5330	7090	5830	3890	7610	3580
Chromium	MG/KG	32.1	100%	30	2	119	119	22.9	19.5 J	24.1	26	23.5	24.4	22.4	25.5	17.7	21
Cobalt	MG/KG	29.7	100%	0	0	119	119	10.1 J	11.5	13.2	19.7	10 J	10.6	10.1 J	9.6 J	9.1 J	9.3 J
Copper	MG/KG	2930	92%	50	2	109	119	21.8 U	19.5	26.5 U	29.7 U	25.4 U	28.2 U	31.6 U	29.6 U	31.5 U	19.9 U
Cyanide	MG/KG	0	0%	27	0	0	119	0.66 U	0.63 U	0.65 U	0.68 U	0.62 U	0.72 U	0.62 U	0.63 U	0.71 U	0.65 U
Iron	MG/KG	39800	100%	0	0	119	119	27100 J	27100 J	31600	33700	28200	28900	26800	27300	20600	25600 J
Lead	MG/KG	1860	100%	63	2	119	119	21.8 J	19.1 J	29.4 J	28.2 J	25.7 J	27.9 J	27 J	31.8 J	35 J	18.4 J
Magnesium	MG/KG	27600	100%	0	0	119	119	4370	3920	4900	5710	5000	5130	5470	5140	4210	4110
Manganese	MG/KG	2580	100%	1600	5	119	119	338 J	513 J	701 J	**2580** J	330 J	460 J	275 J	256 J	269 J	334 J
Mercury	MG/KG	0.15	75%	0.18	0	89	119	0.07 U	0.09 J	0.07 U	0.07 U	0.06 U	0.07 J	0.07 U	0.06 U	0.07 U	0.07 U
Nickel	MG/KG	54.1	100%	30	37	119	119	25.7 J	24.2	**30.5** J	**36.2** J	**30.4** J	**30.1** J	**33.7** J	**33.3** J	25 J	23.5 J
Potassium	MG/KG	3250	100%	0	0	119	119	1370 J	1160	1810	1620	1190	1500	1310	1420	1250	1280
Selenium	MG/KG	2.7	63%	3.9	0	75	119	0.63 U	1.4	1.1 J	1.8 J	0.51 U	0.58 J	0.59 J	0.69 UJ	0.84 J	0.69 J
Silver	MG/KG	1.7	38%	2	0	45	119	0.49 J	0.31 J	0.44 J	0.63 J	0.3 UJ	0.28 UJ	0.33 J	0.36 UJ	0.31 UJ	0.49 J
Sodium	MG/KG	270	34%	0	0	41	119	183 J	61.8 J	148 J	71.5 U	67.6 U	61.3 U	61.5 U	79.9 U	68.3 U	60 U
Thallium	MG/KG	6.7	82%	0	0	98	119	1.6 J	1.8	1.7 J	4.4	1.8 J	3.8	1.8 J	1.5 J	1.9 J	2.3
Vanadium	MG/KG	104	99%	0	0	118	119	30.1	26.7	31.4	37.4	30.3	32.4	26.3	29	26	28.1
Zinc	MG/KG	1250	93%	109	11	111	119	67.5 J	70.8	**487** J	**150** J	84.4 J	90.7 J	108 J	105 J	75.7 J	61.5 J
Other Analyses																	
Cation exchange capacity	MEQ/100G	31.4	100%	0	0	32	32			24.1	22.4	6.5	22.2	11.3	16	26.2	26.9
Nitrate Nitrite Nitrogen	MG/KG	4.4	98%	0	0	99	101	0.09 J	0.09	3.1 J	0.29 J	0.03 J	0.06 J	0.2 J	0.47 J	0.17 J	0.03 J
Percent Solids	% WW	94	100%	0	0	101	101	68	70.2	73.3	71.5	74.4	67.8	73.4	71.6	69.4	71.9
Soil pH (std. units)	pH units	7.83	100%	0	0	33	33	6.95		7.48	7.65	7.83	7.53	7.56	7.2	7.64	7.08
Total Organic Carbon	MG/KG	70500	100%	0	0	32	32			26200	31300	26500	33300	38400	29900	40500	20800

Notes
(1) Criteria based on NYSDEC Brownfield Unrestricted Use Soil Cleanup Objectives,
http www dec state ny us website/regs subpart375_6 html
(2) Sample-duplicate pairs were treated as discreet samples
(3) A bolded and outlined cell indicates a concentration that exceeded the criteria

U – compound was not detected
J the reported value is an estimated concentration
UJ – the compound was not detected, the associated reporting limit is approximate
R – the analytical result was rejected during data validation

TABLE 1
SEAD-57 SOIL SAMPLE RESULTS
SENECA ARMY DEPOT ACTIVITY

Parameter	Units	Maximum Concentration	Frequency of Detection	Criteria Value [1]	Number of Exceedances	Number of Times Detected	Number of Samples Analyzed [2]	SEAD-57 SD57-8 Ditchsoil 573009 0 0.2 01/06/00 SA P1S1 RI	SEAD-57 SD57-7 Ditchsoil 573010 0 0.2 01/06/00 SA P1S1 RI	SEAD-57 SD57-4 Ditchsoil 573011 0 0.2 01/06/00 SA P1S1 RI	SEAD-57 SD57-3 Ditchsoil 573012 0 0.2 01/07/00 SA P1S1 RI	SEAD-57 SD57-2 Ditchsoil 573013 0 0.2 01/07/00 SA P1S1 RI	SEAD-57 SD57-21 Ditchsoil 573014 0 0.2 01/07/00 SA P1S1 RI	SEAD-57 SD57-22 Ditchsoil 573015 0 0.2 01/07/00 SA P1S1 RI	SEAD-57 SD57-5 Ditchsoil 573016 0 0.2 01/07/00 SA P1S1 RI	SEAD-57 SD57-15 Ditchsoil 573017 0 0.2 01/08/00 SA P1S1 RI	SEAD-57 SD57-12 Ditchsoil 573018 0 0.2 01/08/00 SA P1S1 RI	SEAD-57 SD57-23 Ditchsoil 573019 0 0.2 01/08/00 SA P1S1 RI
Anthracene	UG/KG	8.2	3%	100000	0	3	119	83 U	84 U	91 U	87 U	86 U	89 U	87 U	94 U	84 UJ	82 UJ	98 UJ
Benzo(a)anthracene	UG/KG	62	21%	1000	0	25	119	83 U	84 U	91 U	87 U	86 U	7.5 J	8.4 J	94 U	17 J	82 UJ	98 UJ
Benzo(a)pyrene	UG/KG	76	17%	1000	0	20	119	83 U	84 U	91 U	87 U	86 U	14 J	12 J	94 U	18 J	82 UJ	98 UJ
Benzo(b)fluoranthene	UG/KG	67	24%	1000	0	29	119	83 UJ	84 UJ	91 UJ	87 U	86 U	10 J	12 J	94 U	13 J	82 UJ	98 UJ
Benzo(ghi)perylene	UG/KG	54	13%	100000	0	15	119	83 U	84 U	91 U	87 UJ	86 UJ	89 UJ	87 UJ	94 UJ	28 J	82 UJ	98 UJ
Benzo(k)fluoranthene	UG/KG	50	24%	800	0	29	119	83 UJ	84 U	91 U	87 UJ	86 UJ	10 J	7.8 J	94 UJ	14 J	82 UJ	98 UJ
Bis(2-Chloroethoxy)methane	UG/KG	0	0%	0	0	0	119	83 U	84 UJ	91 UJ	87 U	86 U	89 U	87 U	94 U	84 UJ	82 UJ	98 UJ
Bis(2-Chloroethyl)ether	UG/KG	0	0%	0	0	0	119	83 U	84 U	91 U	87 U	86 U	89 U	87 U	94 U	84 UJ	82 UJ	98 UJ
Bis(2-Chloroisopropyl)ether	UG/KG	0	0%	0	0	0	101	83 U	84 U	91 U	87 U	86 U	89 U	87 U	94 U	84 UJ	82 UJ	98 UJ
Bis(2-Ethylhexyl)phthalate	UG/KG	3400	15%	0	0	18	119	83 UJ	84 U	91 U	87 U	86 U	89 U	87 U	94 U	84 UJ	82 UJ	98 UJ
Butylbenzylphthalate	UG/KG	0	0%	0	0	0	119	83 U	84 U	91 U	87 U	86 U	89 U	87 U	94 U	84 UJ	82 UJ	98 UJ
Carbazole	UG/KG	0	0%	0	0	0	119	83 U	84 U	91 U	87 U	86 U	89 U	87 U	94 U	84 UJ	82 UJ	98 UJ
Chrysene	UG/KG	110	33%	1000	0	39	119	83 U	84 U	91 U	87 U	86 U	14 J	14 J	94 U	22 J	82 UJ	98 UJ
Di-n-butylphthalate	UG/KG	390	34%	0	0	40	119	9.8 J	84 U	91 U	87 U	86 U	89 U	87 U	94 U	84 UJ	5.2 J	7.6 J
Di-n-octylphthalate	UG/KG	2.6	1%	0	0	1	119	83 UJ	84 UJ	91 UJ	87 UJ	86 UJ	89 UJ	87 UJ	94 UJ	84 UJ	82 UJ	98 UJ
Dibenz(a,h)anthracene	UG/KG	24	6%	330	0	7	119	83 U	84 U	91 U	87 U	86 U	89 U	87 U	94 U	84 UJ	82 UJ	98 UJ
Dibenzofuran	UG/KG	0	0%	7000	0	0	119	83 U	84 U	91 U	87 U	86 U	89 U	87 U	94 U	84 UJ	82 UJ	98 UJ
Diethyl phthalate	UG/KG	8.8	2%	0	0	2	119	83 U	84 U	91 U	87 UJ	86 UJ	89 UJ	87 UJ	94 UJ	84 UJ	82 UJ	98 UJ
Dimethylphthalate	UG/KG	0	0%	0	0	0	119	83 U	84 U	91 U	87 U	86 U	89 U	87 U	94 U	84 UJ	82 UJ	98 UJ
Fluoranthene	UG/KG	150	50%	100000	0	60	119	83 U	84 U	91 U	87 U	86 U	18 J	16 J	94 U	28 J	82 UJ	6 J
Fluorene	UG/KG	120	2%	30000	0	2	119	83 U	84 U	91 U	87 U	86 U	89 U	87 U	94 U	84 UJ	82 UJ	98 UJ
Hexachlorobenzene	UG/KG	0	0%	330	0	0	119	83 U	84 U	91 U	87 U	86 U	89 U	87 U	94 U	84 UJ	82 UJ	98 UJ
Hexachlorobutadiene	UG/KG	0	0%	0	0	0	119	83 U	84 U	91 U	87 U	86 U	89 U	87 U	94 U	84 UJ	82 UJ	98 UJ
Hexachlorocyclopentadiene	UG/KG	0	0%	0	0	0	119	83 U	84 U	91 U	87 U	86 U	89 U	87 U	94 U	84 UJ	82 UJ	98 UJ
Hexachloroethane	UG/KG	0	0%	0	0	0	119	83 U	84 U	91 U	87 U	86 U	89 U	87 U	94 U	84 UJ	82 UJ	98 UJ
Indeno(1,2,3-cd)pyrene	UG/KG	37	13%	500	0	15	119	83 U	84 UJ	91 UJ	87 U	86 U	89 U	87 U	94 U	12 J	82 UJ	98 UJ
Isophorone	UG/KG	0	0%	0	0	0	119	83 U	84 U	91 U	87 U	86 U	89 U	87 U	94 U	84 UJ	82 UJ	98 UJ
N-Nitrosodiphenylamine	UG/KG	75	2%	0	0	2	119	83 U	84 U	91 U	87 U	86 U	89 U	87 U	94 U	84 UJ	82 UJ	98 UJ
N-Nitrosodipropylamine	UG/KG	0	0%	0	0	0	119	83 U	84 U	91 U	87 U	86 U	89 U	87 U	94 U	84 UJ	82 UJ	98 UJ
Naphthalene	UG/KG	180	1%	12000	0	1	119	83 U	84 U	91 U	87 U	86 U	89 U	87 U	94 U	84 UJ	82 UJ	98 UJ
Nitrobenzene	UG/KG	0	0%	0	0	0	119	83 U	84 U	91 U	87 U	86 U	89 U	87 U	94 U	84 UJ	82 UJ	98 UJ
Pentachlorophenol	UG/KG	0	0%	800	0	0	119	210 UJ	210 UJ	230 UJ	220 UJ	210 UJ	220 UJ	220 UJ	240 UJ	210 UJ	210 UJ	250 UJ
Phenanthrene	UG/KG	230	37%	100000	0	44	119	83 U	84 U	91 U	87 U	86 U	11 J	10 J	94 U	12 J	82 UJ	98 UJ
Phenol	UG/KG	51	13%	330	0	16	119	83 U	84 U	17 J	87 U	86 U	18 J	24 J	94 U	84 UJ	82 UJ	98 UJ
Pyrene	UG/KG	230	52%	100000	0	62	119	83 UJ	84 U	91 U	87 U	86 U	21 J	20 J	94 U	36 J	82 UJ	5.2 J
Explosives																		
1,3,5-Trinitrobenzene	UG/KG	0	0%	0	0	0	119	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U
1,3-Dinitrobenzene	UG/KG	0	0%	0	0	0	119	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U
2,4,6-Trinitrotoluene	UG/KG	0	0%	0	0	0	119	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U
2,4-Dinitrotoluene	UG/KG	0	0%	0	0	0	119	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U
2,6-Dinitrotoluene	UG/KG	0	0%	0	0	0	119	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U
2-Nitrotoluene	UG/KG	0	0%	0	0	0	101	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U
2-amino-4,6-Dinitrotoluene	UG/KG	0	0%	0	0	0	119	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U
3-Nitrotoluene	UG/KG	0	0%	0	0	0	101	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U
4-Nitrotoluene	UG/KG	0	0%	0	0	0	101	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U
4-amino-2,6-Dinitrotoluene	UG/KG	0	0%	0	0	0	119	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U
HMX	UG/KG	0	0%	0	0	0	119	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U
Nitrobenzene	UG/KG	0	0%	0	0	0	101	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U
RDX	UG/KG	0	0%	0	0	0	119	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U
Tetryl	UG/KG	0	0%	0	0	0	119	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U
Pesticides and PCBs																		
4,4'-DDD	UG/KG	54	7%	3.3	5	8	119	4.1 U	4.2 U	4.6 U	4.3 U	4.3 U	4.4 U	4.3 U	4.7 U	4.2 U	4.1 U	4.9 U
4,4'-DDE	UG/KG	32	8%	3.3	7	9	119	4.1 U	4.2 U	4.6 U	4.3 U	4.3 U	4.4 U	4.3 U	4.7 U	4.2 U	4.1 U	4.9 U
4,4'-DDT	UG/KG	23	5%	3.3	5	6	119	4.1 U	4.2 U	4.6 U	4.3 U	4.3 U	4.4 U	4.3 U	4.7 U	4.2 U	4.1 U	4.9 U
Aldrin	UG/KG	0	0%	5	0	0	119	2.1 U	2.2 U	2.3 U	2.2 U	2.2 U	2.3 U	2.2 U	2.4 U	2.2 U	2.1 U	2.5 U
Alpha-BHC	UG/KG	1.4	2%	20	0	2	119	2.1 U	2.2 U	2.3 U	2.2 U	2.2 U	2.3 U	2.2 U	2.4 U	2.2 U	2.1 U	2.5 U
Alpha-Chlordane	UG/KG	16	6%	94	0	7	119	2.1 U	2.2 U	2.3 U	2.2 U	2.2 U	2.3 U	2.2 U	2.4 U	2.2 U	2.1 U	2.5 U
Aroclor-1016	UG/KG	0	0%	100	0	0	119	41 U	42 U	46 U	43 U	43 U	44 U	43 U	47 U	42 U	41 U	49 U
Aroclor-1221	UG/KG	0	0%	100	0	0	119	84 U	85 U	92 U	88 U	87 U	90 U	88 U	96 U	85 U	84 U	100 U
Aroclor-1232	UG/KG	0	0%	100	0	0	119	41 U	42 U	46 U	43 U	43 U	44 U	43 U	47 U	42 U	41 U	49 U
Aroclor-1242	UG/KG	0	0%	100	0	0	119	41 U	42 U	46 U	43 U	43 U	44 U	43 U	47 U	42 U	41 U	49 U
Aroclor-1248	UG/KG	0	0%	100	0	0	119	41 U	42 U	46 U	43 U	43 U	44 U	43 U	47 U	42 U	41 U	49 U
Aroclor-1254	UG/KG	0	0%	100	0	0	119	41 U	42 U	46 U	43 U	43 U	44 U	43 U	47 U	42 U	41 U	49 U
Aroclor-1260	UG/KG	27	2%	100	0	2	119	41 U	42 U	46 U	43 U	43 U	44 U	43 U	47 U	42 U	41 U	49 U
Beta-BHC	UG/KG	4.5	1%	36	0	1	119	2.1 U	2.2 U	2.3 U	2.2 U	2.2 U	2.3 U	2.2 U	2.4 U	2.2 U	2.1 U	2.5 U
Delta-BHC	UG/KG	0	0%	40	0	0	119	2.1 U	2.2 U	2.3 U	2.2 U	2.2 U	2.3 U	2.2 U	2.4 U	2.2 U	2.1 U	2.5 U
Dieldrin	UG/KG	27	6%	5	5	7	119	4.1 U	4.2 U	4.6 U	4.3 U	4.3 U	4.4 U	4.3 U	4.7 U	4.2 U	4.1 U	4.9 U

TABLE 1
SEAD-57 SOIL SAMPLE RESULTS
SENECA ARMY DEPOT ACTIVITY

Parameter	Units	Maximum Concentration	Frequency of Detection	Criteria Value [1]	Number of Exceedances	Number of Times Detected	Number of Samples Analyzed [2]	SEAD-57 SD57-6 Ditchsoil 573020 0 0.2 01/08/00 SA PISI RI Value (Q)	SEAD-57 SD57-31 Ditchsoil 573021 0 0.2 01/08/00 SA PISI RI Value (Q)	SEAD-57 SD57-32 Ditchsoil 573022 0 0.2 01/08/00 SA PISI RI Value (Q)	SEAD-57 SD57-27 Ditchsoil 573023 0 0.2 01/09/00 SA PISI RI Value (Q)	SEAD-57 SD57-28 Ditchsoil 573024 0 0.2 01/09/00 SA PISI RI Value (Q)	SEAD-57 SD57-29 Ditchsoil 573025 0 0.2 01/09/00 SA PISI RI Value (Q)	SEAD-57 SD57-30 Ditchsoil 573026 0 0.2 01/09/00 SA PISI RI Value (Q)	SEAD-57 SD57-10 Ditchsoil 573030 0 0.2 01/10/00 SA PISI RI Value (Q)	SEAD-57 SD57-9 Ditchsoil 573032 0 0.2 01/10/00 SA PISI RI Value (Q)	SEAD-57 SD57-19 Ditchsoil 573033 0 0.2 01/10/00 SA PISI RI Value (Q)	SEAD-57 SD57-20 Ditchsoil 573034 0 0.2 01/10/00 SA PISI RI Value (Q)
Volatile Organic Compounds																		
1,1,1-Trichloroethane	UG/KG	0	0%	680	0	0	127	23 U	12 U	16 U	15 U	12 U	13 U	13 U	11 U	10 U	11 U	11 U
1,1,2,2-Tetrachloroethane	UG/KG	0	0%	0	0	0	127	23 U	12 U	16 U	15 U	12 U	13 U	13 U	11 U	10 U	11 U	11 U
1,1,2-Trichloroethane	UG/KG	0	0%	0	0	0	127	23 U	12 U	16 U	15 U	12 U	13 U	13 U	11 U	10 U	11 U	11 U
1,1-Dichloroethane	UG/KG	0	0%	270	0	0	127	23 U	12 U	16 U	15 U	12 U	13 U	13 U	11 U	10 U	11 U	11 U
1,1-Dichloroethene	UG/KG	0	0%	330	0	0	127	23 U	12 U	16 U	15 U	12 U	13 U	13 U	11 U	10 U	11 U	11 U
1,2-Dichloroethane	UG/KG	0	0%	20	0	0	127	23 U	12 U	16 UJ	15 U	12 U	13 U	13 U	11 U	10 U	11 U	11 U
1,2-Dichloroethene (total)	UG/KG	0	0%	190	0	0	127	23 U	12 U	16 U	15 U	12 U	13 U	13 U	11 U	10 U	11 U	11 U
1,2-Dichloropropane	UG/KG	0	0%	0	0	0	127	23 U	12 U	16 U	15 U	12 U	13 U	13 U	11 U	10 U	11 U	11 U
Acetone	UG/KG	700	74%	50	87	94	127	700 J	250 J	360 J	200 J	250 J	260 J	240 J	130 J	80	83	84
Benzene	UG/KG	1	2%	60	0	2	127	23 U	12 U	16 U	15 U	12 U	13 U	13 U	11 U	10 U	11 U	11 U
Bromodichloromethane	UG/KG	0	0%	0	0	0	127	23 U	12 U	16 U	15 U	12 U	13 U	13 U	11 U	10 U	11 U	11 U
Bromoform	UG/KG	0	0%	0	0	0	127	23 U	12 U	16 U	15 U	12 U	13 U	13 U	11 U	10 U	11 U	11 U
Carbon disulfide	UG/KG	22	11%	0	0	14	127	23 U	12 U	16 U	15 U	12 U	13 U	13 U	2 J	10 U	11 U	11 U
Carbon tetrachloride	UG/KG	0	0%	760	0	0	127	23 U	12 U	16 U	15 U	12 U	13 U	13 U	11 U	10 U	11 U	11 U
Chlorobenzene	UG/KG	0	0%	1100	0	0	127	23 U	12 U	16 U	15 U	12 U	13 U	13 U	11 U	10 U	11 U	11 U
Chlorodibromomethane	UG/KG	0	0%	0	0	0	127	23 U	12 U	16 U	15 U	12 U	13 U	13 U	11 U	10 U	11 U	11 U
Chloroethane	UG/KG	0	0%	0	0	0	127	23 UJ	12 UJ	16 U	15 UJ	12 UJ	13 UJ	13 U	11 U	10 U	11 U	11 U
Chloroform	UG/KG	7	1%	370	0	1	127	23 U	12 U	16 U	15 U	12 U	13 U	13 U	11 U	10 U	11 U	11 U
Cis-1,3-Dichloropropene	UG/KG	0	0%	0	0	0	127	23 U	12 U	16 U	15 U	12 U	13 U	13 U	11 U	10 U	11 U	11 U
Ethyl benzene	UG/KG	0	0%	1000	0	0	127	23 U	12 U	16 U	15 U	12 U	13 U	13 U	11 U	10 U	11 U	11 U
Methyl bromide	UG/KG	0	0%	0	0	0	127	23 U	12 U	16 U	15 U	12 U	13 U	13 U	11 U	10 U	11 U	11 U
Methyl butyl ketone	UG/KG	0	0%	0	0	0	127	23 U	12 U	16 U	15 U	12 U	13 U	13 U	11 U	10 U	11 U	11 U
Methyl chloride	UG/KG	0	0%	0	0	0	127	23 U	12 U	16 U	15 U	12 U	13 U	13 U	11 U	10 U	11 U	11 U
Methyl ethyl ketone	UG/KG	64	62%	120	0	79	127	64	19	31	22	19	25	30	13	9 J	10 J	7 J
Methyl isobutyl ketone	UG/KG	0	0%	0	0	0	127	23 U	12 U	16 U	15 U	12 U	13 U	13 U	11 U	10 U	11 U	11 U
Methylene chloride	UG/KG	1	2%	50	0	2	127	23 U	12 U	16 U	15 U	12 U	13 U	13 U	1 J	1 J	11 U	11 U
Styrene	UG/KG	0	0%	0	0	0	127	23 U	12 U	16 U	15 U	12 U	13 U	13 U	11 U	10 U	11 U	11 U
Tetrachloroethene	UG/KG	6	6%	1300	0	7	127	23 U	12 U	16 U	15 U	12 U	13 U	13 U	11 U	10 U	11 U	11 U
Toluene	UG/KG	33	65%	700	0	82	127	7 J	5 J	9 J	6 J	5 J	6 J	6 J	6 J	7 J	6 J	2 J
Total Xylenes	UG/KG	2	2%	260	0	3	127	23 U	12 U	16 U	15 U	12 U	13 U	13 U	11 U	10 U	11 U	11 U
Trans-1,3-Dichloropropene	UG/KG	0	0%	0	0	0	127	23 U	12 U	16 U	15 U	12 U	13 U	13 U	11 U	10 U	11 U	11 U
Trichloroethene	UG/KG	0	0%	470	0	0	127	23 U	12 U	16 U	15 U	12 U	13 U	13 U	11 U	10 U	11 U	11 U
Vinyl chloride	UG/KG	0	0%	20	0	0	127	23 U	12 U	16 U	15 U	12 U	13 U	13 U	11 U	10 U	11 U	11 U
Semivolatile Organic Compounds																		
1,2,4-Trichlorobenzene	UG/KG	0	0%	0	0	0	119	120 UJ	100 UJ	100 UJ	94 UJ	92 UJ	93 UJ	92 UJ	90 UJ	81 UJ	100 UJ	93 UJ
1,2-Dichlorobenzene	UG/KG	0	0%	1100	0	0	119	120 UJ	100 UJ	100 UJ	94 UJ	92 UJ	93 UJ	92 UJ	90 UJ	81 UJ	100 UJ	93 UJ
1,3-Dichlorobenzene	UG/KG	0	0%	2400	0	0	119	120 UJ	100 UJ	100 UJ	94 UJ	92 UJ	93 UJ	92 UJ	90 UJ	81 UJ	100 UJ	93 UJ
1,4-Dichlorobenzene	UG/KG	0	0%	1800	0	0	119	120 UJ	100 UJ	100 UJ	94 UJ	92 UJ	93 UJ	92 UJ	90 UJ	81 UJ	100 UJ	93 UJ
2,2'-oxybis(1-Chloropropane)	UG/KG	0	0%	0	0	0	18											
2,4,5-Trichlorophenol	UG/KG	0	0%	0	0	0	119	310 UJ	250 UJ	250 UJ	240 UJ	230 UJ	230 UJ	230 UJ	230 UJ	200 UJ	260 UJ	230 UJ
2,4,6-Trichlorophenol	UG/KG	0	0%	0	0	0	119	120 UJ	100 UJ	100 UJ	94 UJ	92 UJ	93 UJ	92 UJ	90 UJ	81 UJ	100 UJ	93 UJ
2,4-Dichlorophenol	UG/KG	0	0%	0	0	0	119	120 UJ	100 UJ	100 UJ	94 UJ	92 UJ	93 UJ	92 UJ	90 UJ	81 UJ	100 UJ	93 UJ
2,4-Dimethylphenol	UG/KG	0	0%	0	0	0	119	120 UJ	100 UJ	100 UJ	94 UJ	92 UJ	93 UJ	92 UJ	90 UJ	81 UJ	100 UJ	93 UJ
2,4-Dinitrophenol	UG/KG	0	0%	0	0	0	119	310 UR	250 UR	250 UR	240 UR	230 UR	230 UR	230 UR	230 UR	200 UR	260 UR	230 UJ
2,4-Dinitrotoluene	UG/KG	0	0%	0	0	0	119	120 UJ	100 UJ	100 UJ	94 UJ	92 UJ	93 UJ	92 UJ	90 UJ	81 UJ	100 UJ	93 UJ
2,6-Dinitrotoluene	UG/KG	0	0%	0	0	0	119	120 UJ	100 UJ	100 UJ	94 UJ	92 UJ	93 UJ	92 UJ	90 UJ	81 UJ	100 UJ	93 UJ
2-Chloronaphthalene	UG/KG	0	0%	0	0	0	119	120 UJ	100 UJ	100 UJ	94 UJ	92 UJ	93 UJ	92 UJ	90 UJ	81 UJ	100 UJ	93 UJ
2-Chlorophenol	UG/KG	0	0%	0	0	0	119	120 UJ	100 UJ	100 UJ	94 UJ	92 UJ	93 UJ	92 UJ	90 UJ	81 UJ	100 UJ	93 UJ
2-Methylnaphthalene	UG/KG	750	3%	0	0	3	119	120 UJ	100 UJ	100 UJ	94 UJ	92 UJ	93 UJ	92 UJ	90 UJ	81 UJ	100 UJ	93 UJ
2 Methylphenol	UG/KG	0	0%	330	0	0	119	120 UJ	100 UJ	100 UJ	94 UJ	92 UJ	93 UJ	92 UJ	90 UJ	81 UJ	100 UJ	93 UJ
2-Nitroaniline	UG/KG	0	0%	0	0	0	119	310 UJ	250 UJ	250 UJ	240 UJ	230 UJ	230 UJ	230 UJ	230 UJ	200 UJ	260 UJ	230 UJ
2-Nitrophenol	UG/KG	0	0%	0	0	0	119	120 UJ	100 UJ	100 UJ	94 UJ	92 UJ	93 UJ	92 UJ	90 UJ	81 UJ	100 UJ	93 UJ
3,3'-Dichlorobenzidine	UG/KG	0	0%	0	0	0	119	120 UJ	100 UJ	100 UJ	94 UJ	92 UJ	93 UJ	92 UJ	90 UJ	81 UJ	100 UJ	93 UJ
3-Nitroaniline	UG/KG	0	0%	0	0	0	119	310 UJ	250 UJ	250 UJ	240 UJ	230 UJ	230 UJ	230 UJ	230 UJ	200 UJ	260 UJ	230 UJ
4,6-Dinitro-2-methylphenol	UG/KG	0	0%	0	0	0	119	310 UJ	250 UJ	250 UJ	240 UJ	230 UJ	230 UJ	230 UJ	230 UJ	200 UJ	260 UJ	230 UJ
4-Bromophenyl phenyl ether	UG/KG	0	0%	0	0	0	119	120 UJ	100 UJ	100 UJ	94 UJ	92 UJ	93 UJ	92 UJ	90 UJ	81 UJ	100 UJ	93 UJ
4-Chloro-3 methylphenol	UG/KG	0	0%	0	0	0	119	120 UJ	100 UJ	100 UJ	94 UJ	92 UJ	93 UJ	92 UJ	90 UJ	81 UJ	100 UJ	93 UJ
4-Chloroaniline	UG/KG	0	0%	0	0	0	119	120 UJ	100 UJ	100 UJ	94 UJ	92 UJ	93 UJ	92 UJ	90 UJ	81 UJ	100 UJ	93 UJ
4-Chlorophenyl phenyl ether	UG/KG	0	0%	0	0	0	119	120 UJ	100 UJ	100 UJ	94 UJ	92 UJ	93 UJ	92 UJ	90 UJ	81 UJ	100 UJ	93 UJ
4-Methylphenol	UG/KG	13	3%	330	0	3	119	120 UJ	100 UJ	100 UJ	94 UJ	92 UJ	93 UJ	92 UJ	90 UJ	81 UJ	100 UJ	6.3 J
4-Nitroaniline	UG/KG	0	0%	0	0	0	119	310 UJ	250 UJ	250 UJ	240 UJ	230 UJ	230 UJ	230 UJ	230 UJ	200 UJ	260 UJ	230 UJ
4-Nitrophenol	UG/KG	0	0%	0	0	0	119	310 UJ	250 UJ	250 UJ	240 UR	230 UR	230 UR	230 UR	230 UJ	200 UJ	260 UJ	230 UJ
Acenaphthene	UG/KG	0	0%	20000	0	0	119	120 UJ	100 UJ	100 UJ	94 UJ	92 UJ	93 UJ	92 UJ	90 UJ	81 UJ	100 UJ	93 UJ
Acenaphthylene	UG/KG	0	0%	100000	0	0	119	120 UJ	100 UJ	100 UJ	94 UJ	92 UJ	93 UJ	92 UJ	90 UJ	81 UJ	100 UJ	93 UJ

TABLE 1
SEAD-57 SOIL SAMPLE RESULTS
SENECA ARMY DEPOT ACTIVITY

Parameter	Units	Maximum Concentration	Frequency of Detection	Criteria Value [1]	Number of Exceedances	Number of Times Detected	Number of Samples Analyzed [2]	SEAD-57 SD57-6 Ditchsoil 573020 0 0.2 01/08/00 SA P1S1 RI Value (Q)	SEAD-57 SD57-31 Ditchsoil 573021 0 0.2 01/08/00 SA P1S1 RI Value (Q)	SEAD-57 SD57-32 Ditchsoil 573022 0 0.2 01/08/00 SA P1S1 RI Value (Q)	SEAD-57 SD57-27 Ditchsoil 573023 0 0.2 01/09/00 SA P1S1 RI Value (Q)	SEAD-57 SD57-28 Ditchsoil 573024 0 0.2 01/09/00 SA P1S1 RI Value (Q)	SEAD-57 SD57-29 Ditchsoil 573025 0 0.2 01/09/00 SA P1S1 RI Value (Q)	SEAD-57 SD57-30 Ditchsoil 573026 0 0.2 01/09/00 SA P1S1 RI Value (Q)	SEAD-57 SD57-10 Ditchsoil 573030 0 0.2 01/10/00 SA P1S1 RI Value (Q)	SEAD-57 SD57-9 Ditchsoil 573032 0 0.2 01/10/00 SA P1S1 RI Value (Q)	SEAD-57 SD57-19 Ditchsoil 573033 0 0.2 01/10/00 SA P1S1 RI Value (Q)	SEAD-57 SD57-20 Ditchsoil 573034 0 0.2 01/10/00 SA P1S1 RI Value (Q)
Endosulfan I	UG/KG	5.2	1%	2400	0	1	119	3.2 U	2.6 U	2.6 U	2.4 U	2.4 UJ	2.4 UJ	2.4 UJ	2.3 U	2.1 U	2.6 U	2.4 U
Endosulfan II	UG/KG	3.1	1%	2400	0	1	119	6.2 U	5.1 U	5.1 U	4.7 U	4.6 UJ	4.6 UJ	4.6 UJ	4.5 U	4.1 U	5.2 U	4.6 U
Endosulfan sulfate	UG/KG	0	0%	2400	0	0	119	6.2 U	5.1 U	5.1 U	4.7 U	4.6 UJ	4.6 UJ	4.6 UJ	4.5 U	4.1 U	5.2 U	4.6 U
Endrin	UG/KG	0	0%	14	0	0	119	6.2 U	5.1 U	5.1 U	4.7 U	4.6 UJ	4.6 UJ	4.6 UJ	4.5 U	4.1 U	5.2 U	4.6 U
Endrin aldehyde	UG/KG	3.8	1%	0	0	1	119	6.2 U	5.1 U	5.1 U	4.7 U	4.6 UJ	4.6 UJ	4.6 UJ	4.5 U	4.1 U	5.2 U	4.6 U
Endrin ketone	UG/KG	4	1%	0	0	1	119	6.2 U	5.1 U	5.1 U	4.7 U	4.6 UJ	4.6 UJ	4.6 UJ	4.5 U	4.1 U	5.2 U	4.6 U
Gamma-BHC/Lindane	UG/KG	0	0%	100	0	0	119	3.2 U	2.6 U	2.6 U	2.4 U	2.4 UJ	2.4 UJ	2.4 UJ	2.3 U	2.1 U	2.6 U	2.4 U
Gamma-Chlordane	UG/KG	0	0%	0	0	0	119	3.2 U	2.6 U	2.6 U	2.4 U	2.4 UJ	2.4 UJ	2.4 UJ	2.3 U	2.1 U	2.6 U	2.4 U
Heptachlor	UG/KG	1.6	1%	42	0	1	119	3.2 U	2.6 U	2.6 U	2.4 U	2.4 UJ	2.4 UJ	2.4 UJ	2.3 U	2.1 U	2.6 U	2.4 U
Heptachlor epoxide	UG/KG	2	1%	0	0	1	119	3.2 U	2.6 U	2.6 U	2.4 U	2.4 UJ	2.4 UJ	2.4 UJ	2.3 U	2.1 U	2.6 U	2.4 U
Methoxychlor	UG/KG	0	0%	0	0	0	119	32 U	26 U	26 U	24 U	24 UJ	24 UJ	24 UJ	23 U	21 U	26 U	24 U
Toxaphene	UG/KG	0	0%	0	0	0	119	320 U	260 U	260 U	240 U	240 UJ	240 UJ	240 UJ	230 U	210 U	260 U	240 U
Herbicides																		
2,4,5-T	UG/KG	0	0%	0	0	0	18											
2,4,5-TP Silvex	UG/KG	0	0%	3800	0	0	18											
2,4-D	UG/KG	0	0%	0	0	0	18											
2,4-DB	UG/KG	0	0%	0	0	0	18											
Dalapon	UG/KG	0	0%	0	0	0	18											
Dicamba	UG/KG	0	0%	0	0	0	18											
Dichloroprop	UG/KG	0	0%	0	0	0	18											
Dinoseb	UG/KG	0	0%	0	0	0	18											
MCPA	UG/KG	0	0%	0	0	0	18											
MCPP	UG/KG	0	0%	0	0	0	18											
Metals and Cyanide																		
Aluminum	MG/KG	22900	100%	0	0	119	119	14500 J	16000 J	13400 J	13800 J	14300 J	16100 J	14700 J	17100 J	9990 J	17800 J	16300 J
Antimony	MG/KG	6.5	49%	0	0	58	119	2.2 J	0.94 J	0.49 UJ	0.56 J	0.49 J	0.76 J	0.5 J	0.76 J	0.52 J	1.1 J	0.75 J
Arsenic	MG/KG	17.8	92%	13	1	110	119	6.3	5.3	3.5	5.5	4.7	4.3	4.1	6.7	3.3	5.6	4.7
Barium	MG/KG	237	100%	350	0	119	119	132	105	92.3	96.2	74.5	118	85.7	162	88.5	169	149
Beryllium	MG/KG	1.8	100%	7.2	0	119	119	0.99 J	1.1 J	0.75 J	0.96 J	0.74 J	1 J	0.82 J	1.3	0.59 J	1 J	0.96 J
Cadmium	MG/KG	28.6	22%	2.5	6	26	119	0.16 J	0.05 U	0.04 U	0.05 U	0.04 U	0.05 U	0.04 U	0.46 J	0.9 J	0.16 J	0.17 J
Calcium	MG/KG	213000	100%	0	0	119	119	7380	3130	3440	2740	1580	3180	2050	2800	2540	3670	3620
Chromium	MG/KG	32.1	100%	30	2	119	119	21.3 J	20 J	16.2 J	17.2 J	18.8 J	19.7 J	18.8 J	24.2 J	14.2 J	25.2 J	24.4 J
Cobalt	MG/KG	29.7	100%	0	0	119	119	9.8 J	13.4 J	7.2 J	9.6 J	7.6 J	12.1	8.8 J	29.7	6.2 J	12	10.7 J
Copper	MG/KG	2930	92%	50	2	109	119	44.4	20.6	17.8	15.3	14.8	20.1	17.5	21.7	16.6	29.6	26.7
Cyanide	MG/KG	0	0%	27	0	0	119	0.94 U	0.73 U	0.68 U	0.72 U	0.68 U	0.64 U	0.65 U	0.69 U	0.59 U	0.61 U	0.68 U
Iron	MG/KG	39800	100%	0	0	119	119	37200	27300	18400	30100 J	25400 J	24600 J	23700 J	34800 J	17500 J	32200 J	29900 J
Lead	MG/KG	1860	100%	63	2	119	119	33.2 J	28.7 J	25.3 J	24.1 J	17.4 J	25.3 J	21.6 J	22.1 J	8.3 J	28.6 J	22.2 J
Magnesium	MG/KG	27600	100%	0	0	119	119	4310	4130	3320	3140	3360	4210	3650	4780	3210	5530	5180
Manganese	MG/KG	2580	100%	1600	5	119	119	292 J	737 J	320 J	619 J	346 J	872 J	426 J	**1620** J	253 J	409 J	601 J
Mercury	MG/KG	0.15	75%	0.18	0	89	119	0.15	0.12 J	0.12 J	0.07 U	0.07 U	0.07 U	0.06 U	0.07 J	0.06 U	0.07 U	0.06 U
Nickel	MG/KG	54.1	100%	30	37	119	119	28.8	24.3	18.3	16.2	17.2	21.6	21	**31.7**	19.5	**36.7**	**41.8**
Potassium	MG/KG	3250	100%	0	0	119	119	1520 J	1280 J	986 J	1170 J	1030 J	1150 J	1150	1500	901 J	1740	1520
Selenium	MG/KG	2.7	63%	3.9	0	75	119	0.9 U	0.68 U	0.79 J	0.62 U	0.54 J	0.59 U	1.4	1.2	0.59 U	1.3	0.84 J
Silver	MG/KG	1.7	38%	2	0	45	119	0.47 UJ	0.36 J	0.3 J	0.37 J	0.28 J	0.51 J	0.28 UJ	0.31 J	0.31 UJ	0.28 UJ	0.31 UJ
Sodium	MG/KG	270	34%	0	0	41	119	104 U	104 J	64.3 U	72 J	61.3 U	68 U	62.1 U	56.9 U	71.3 J	62.3 U	68.8 U
Thallium	MG/KG	6.7	82%	0	0	98	119	1.1 U	1.4 J	1.3 J	1.8 J	1 J	0.75 U	1.2 J	2.7	1.2 J	1.3 J	2.6
Vanadium	MG/KG	104	99%	0	0	118	119	27.1	29.8	25.1	29.3	28.1	30.1	27.5	33.1	20	32.7	27.4
Zinc	MG/KG	1250	93%	109	11	111	119	**144**	69.7	59.7	50.9	47.2	70.8	59	64.2	41.2	91.2	96.1
Other Analyses																		
Cation exchange capacity	MEQ/100G	31.4	100%	0	0	32	32	31.4	26.8	24.4	15.5	13.5	12	11.5	10.8	11.4	11.8	18
Nitrate Nitrite Nitrogen	MG/KG	4.4	98%	0	0	99	101	0.04	0.24	0.11	0.44	0.07	0.25	0.33	0.15	0.04	0.14	0.22
Percent Solids	% WW	94	100%	0	0	101	101	53.1	65.4	64.7	69.7	72	71.4	72.2	72.6	80.9	64	71.2
Soil pH (std. units)	pH units	7.83	100%	0	0	33	33	6.84	6.76	6.23	6.86	6.25	6.79	6.5	7	6.72	7.35	6.99
Total Organic Carbon	MG/KG	70500	100%	0	0	32	32	70500	41900	35900	28000	15000	22000	19200	23400	16400	9580	31000

Notes
(1) Criteria based on NYSDEC Brownfield Unrestricted Use Soil Cleanup Objectives,
http://www.dec.state.ny.us/website/regs/subpart375_6.html
(2) Sample-duplicate pairs were treated as discreet samples
(3) A bolded and outlined cell indicates a concentration that exceeded the criteria.

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected, the associated reporting limit is approximate
R = the analytical result was rejected during data validation

TABLE 1
SEAD-57 SOIL SAMPLE RESULTS
SENECA ARMY DEPOT ACTIVITY

Parameter	Units	Maximum Concentration	Frequency of Detection	Criteria Value [1]	Number of Exceedances	Number of Times Detected	Number of Samples Analyzed [2]	SEAD-57 SD57-1 Ditchsoil 573035 0 0.2 01/11/00 SA P1S1 RI Value (Q)	SEAD-57 SD57-25 Ditchsoil 573036 0 0.2 01/11/00 SA P1S1 RI Value (Q)	SEAD-57 SB57-1 SOIL 574013 0 2 12/03/99 SA P1S1 RI Value (Q)	SEAD-57 SB57-1 SOIL 574014 2 4 12/03/99 SA P1S1 RI Value (Q)	SEAD-57 SB57-1 SOIL 574015 4 6 12/03/99 SA P1S1 RI Value (Q)	SEAD-57 SB57-2 SOIL 574010 0 2 12/03/99 SA P1S1 RI Value (Q)	SEAD-57 SB57-2 SOIL 574011 2 4 12/03/99 SA P1S1 RI Value (Q)	SEAD-57 SB57-2 SOIL 574012 4 6 12/03/99 SA P1S1 RI Value (Q)	SEAD-57 SB57-3 SOIL 574007 0 2 12/02/99 SA P1S1 RI Value (Q)	SEAD-57 SB57-3 SOIL 574008 2 4 12/02/99 SA P1S1 RI Value (Q)	SEAD-57 SB57-3 SOIL 574009 4 6 12/02/99 SA P1S1 RI Value (Q)
Anthracene	UG/KG	8.2	3%	100000	0	3	119	110 UJ	88 UJ	84 U	78 U	74 U	93 U	76 U	74 UJ	98 U	73 U	70 U
Benzo(a)anthracene	UG/KG	62	21%	1000	0	25	119	7.2 J	4.7 J	84 U	78 U	74 U	93 U	76 U	7.9 J	98 U	73 U	70 U
Benzo(a)pyrene	UG/KG	76	17%	1000	0	20	119	8.9 J	5.9 J	84 U	78 U	74 U	93 U	76 U	74 UJ	98 U	73 U	70 U
Benzo(b)fluoranthene	UG/KG	67	24%	1000	0	29	119	9.3 J	5.4 J	84 U	78 U	74 U	93 U	76 U	74 UJ	98 U	73 U	70 U
Benzo(ghi)perylene	UG/KG	54	13%	100000	0	15	119	110 UJ	88 UJ	84 U	78 U	74 U	93 U	76 U	74 UJ	98 U	73 U	70 U
Benzo(k)fluoranthene	UG/KG	50	24%	800	0	29	119	9.2 J	6.7 J	84 U	78 U	74 U	93 U	76 U	74 UJ	98 U	73 U	70 U
Bis(2-Chloroethoxy)methane	UG/KG	0	0%	0	0	0	119	110 UJ	88 UJ	84 UJ	78 UJ	74 UJ	93 UJ	76 UJ	74 UJ	98 U	73 U	70 UJ
Bis(2-Chloroethyl)ether	UG/KG	0	0%	0	0	0	119	110 UJ	88 UJ	84 U	78 U	74 U	93 U	76 U	74 UJ	98 U	73 U	70 U
Bis(2-Chloroisopropyl)ether	UG/KG	0	0%	0	0	0	101	110 UJ	88 UJ	84 U	78 U	74 U	93 U	76 U	74 UJ	98 U	73 U	70 U
Bis(2-Ethylhexyl)phthalate	UG/KG	3400	15%	0	0	18	119	110 UJ	88 UJ	84 U	78 U	74 U	93 U	76 U	170 J	98 U	73 U	70 U
Butylbenzylphthalate	UG/KG	0	0%	0	0	0	119	110 UJ	88 UJ	84 U	78 U	74 U	93 U	76 U	74 UJ	98 U	73 U	70 U
Carbazole	UG/KG	0	0%	0	0	0	119	110 UJ	88 UJ	84 UJ	78 UJ	74 UJ	93 UJ	76 UJ	74 UJ	98 U	73 U	70 UJ
Chrysene	UG/KG	110	33%	1000	0	39	119	9.5 J	7.2 J	84 U	78 U	74 U	93 U	76 U	12 J	98 U	73 U	70 U
Di-n-butylphthalate	UG/KG	390	34%	0	0	40	119	6.5 J	4.7 J	84 U	78 U	74 U	93 U	76 U	74 UJ	98 U	73 U	70 U
Di-n-octylphthalate	UG/KG	2.6	1%	0	0	1	119	110 UJ	88 UJ	84 U	78 U	74 U	93 U	76 U	74 UJ	98 U	73 U	70 U
Dibenz(a,h)anthracene	UG/KG	24	6%	330	0	7	119	110 UJ	88 UJ	84 U	78 U	74 U	93 U	76 U	74 UJ	98 U	73 U	70 U
Dibenzofuran	UG/KG	0	0%	7000	0	0	119	110 UJ	88 UJ	84 U	78 U	74 U	93 U	76 U	74 UJ	98 U	73 U	70 U
Diethyl phthalate	UG/KG	8.8	2%	0	0	2	119	110 UJ	88 UJ	84 UJ	78 UJ	74 UJ	93 UJ	76 UJ	74 UJ	98 UJ	73 UJ	70 UJ
Dimethylphthalate	UG/KG	0	0%	0	0	0	119	110 UJ	88 UJ	84 U	78 U	74 U	93 U	76 U	74 UJ	98 U	73 U	70 U
Fluoranthene	UG/KG	150	50%	100000	0	60	119	15 J	9 J	84 U	78 UJ	74 UJ	93 U	76 UJ	74 UJ	98 U	73 U	70 UJ
Fluorene	UG/KG	120	2%	30000	0	2	119	110 UJ	88 UJ	84 U	78 U	74 U	93 U	76 U	74 UJ	98 U	73 U	70 U
Hexachlorobenzene	UG/KG	0	0%	330	0	0	119	110 UJ	88 UJ	84 U	78 U	74 U	93 U	76 U	74 UJ	98 U	73 U	70 U
Hexachlorobutadiene	UG/KG	0	0%	0	0	0	119	110 UJ	88 UJ	84 U	78 U	74 U	93 U	76 U	74 UJ	98 U	73 U	70 U
Hexachlorocyclopentadiene	UG/KG	0	0%	0	0	0	119	110 UJ	88 UJ	84 U	78 U	74 U	93 U	76 U	74 UJ	98 U	73 U	70 U
Hexachloroethane	UG/KG	0	0%	0	0	0	119	110 UJ	88 UJ	84 U	78 U	74 U	93 U	76 U	74 UJ	98 U	73 U	70 U
Indeno(1,2,3-cd)pyrene	UG/KG	37	13%	500	0	15	119	110 UJ	88 UJ	84 U	78 UJ	74 UJ	93 U	76 UJ	74 UJ	98 U	73 U	70 UJ
Isophorone	UG/KG	0	0%	0	0	0	119	110 UJ	88 UJ	84 U	78 U	74 U	93 U	76 U	74 UJ	98 U	73 U	70 U
N-Nitrosodiphenylamine	UG/KG	75	2%	0	0	2	119	110 UJ	88 UJ	84 U	78 U	74 U	93 U	76 U	74 UJ	75 J	9.2 J	70 U
N-Nitrosodipropylamine	UG/KG	0	0%	0	0	0	119	110 UJ	88 UJ	84 U	78 U	74 U	93 U	76 U	74 UJ	98 U	73 U	70 U
Naphthalene	UG/KG	180	1%	12000	0	1	119	110 UJ	88 UJ	84 U	78 U	74 U	93 U	76 U	74 UJ	98 U	73 U	70 U
Nitrobenzene	UG/KG	0	0%	0	0	0	119	110 UJ	88 UJ	84 U	78 U	74 U	93 U	76 U	74 UJ	98 U	73 U	70 U
Pentachlorophenol	UG/KG	0	0%	800	0	0	119	280 UJ	220 UJ	200 UJ	190 UJ	180 UJ	220 UJ	180 UJ	180 UJ	240 UJ	180 UJ	170 UJ
Phenanthrene	UG/KG	230	37%	100000	0	44	119	8.7 J	4.8 J	84 U	78 U	74 U	93 U	76 U	74 UJ	98 U	73 U	70 U
Phenol	UG/KG	51	13%	330	0	16	119	110 UJ	88 UJ	84 U	78 U	74 U	93 U	76 U	74 UJ	98 U	73 U	70 U
Pyrene	UG/KG	230	52%	100000	3	62	119	12 J	8.1 J	84 UJ	78 UJ	74 UJ	93 UJ	76 UJ	74 UJ	98 U	73 UJ	70 UJ
Explosives																		
1,3,5-Trinitrobenzene	UG/KG	0	0%	0	0	0	119	120 U	120 U	120 U	120 UJ	120 U	120 U	120 U	120 U	120 U	120 U	120 U
1,3-Dinitrobenzene	UG/KG	0	0%	0	0	0	119	120 U	120 U	120 U	120 UJ	120 U	120 U	120 U	120 U	120 U	120 U	120 U
2,4,6-Trinitrotoluene	UG/KG	0	0%	0	0	0	119	120 U	120 U	120 U	120 UJ	120 U	120 U	120 U	120 U	120 U	120 U	120 U
2,4-Dinitrotoluene	UG/KG	0	0%	0	0	0	119	120 U	120 U	120 U	120 UJ	120 U	120 U	120 U	120 U	120 U	120 U	120 U
2,6-Dinitrotoluene	UG/KG	0	0%	0	0	0	119	120 U	120 U	120 U	120 UJ	120 U	120 U	120 U	120 U	120 U	120 U	120 U
2-Nitrotoluene	UG/KG	0	0%	0	0	0	101	120 U	120 U	120 U	120 UJ	120 U	120 U	120 U	120 U	120 U	120 U	120 U
2-amino-4,6-Dinitrotoluene	UG/KG	0	0%	0	0	0	119	120 U	120 U	120 U	120 UJ	120 U	120 U	120 U	120 U	120 U	120 U	120 U
3-Nitrotoluene	UG/KG	0	0%	0	0	0	101	120 U	120 U	120 U	120 UJ	120 U	120 U	120 U	120 U	120 U	120 U	120 U
4-Nitrotoluene	UG/KG	0	0%	0	0	0	101	120 U	120 U	120 U	120 UJ	120 U	120 U	120 U	120 U	120 U	120 U	120 U
4-amino-2,6-Dinitrotoluene	UG/KG	0	0%	0	0	0	119	120 U	120 U	120 U	120 UJ	120 U	120 U	120 U	120 U	120 U	120 U	120 U
HMX	UG/KG	0	0%	0	0	0	119	120 U	120 U	120 U	120 UJ	120 U	120 U	120 U	120 U	120 U	120 U	120 U
Nitrobenzene	UG/KG	0	0%	0	0	0	101	120 U	120 U	120 U	120 UJ	120 U	120 U	120 U	120 U	120 U	120 U	120 U
RDX	UG/KG	0	0%	0	0	0	119	120 U	120 U	120 U	120 UJ	120 U	120 U	120 U	120 U	120 U	120 U	120 U
Tetryl	UG/KG	0	0%	0	0	0	119	120 U	120 U	120 U	120 UJ	120 U	120 U	120 U	120 U	120 U	120 U	120 U
Pesticides and PCBs																		
4,4'-DDD	UG/KG	54	7%	3.3	5	8	119	5.7 U	4.4 U	4.2 U	3.9 U	3.7 U	4.6 U	3.8 U	3.7 U	4.9 U	3.7 U	3.5 U
4,4'-DDE	UG/KG	32	8%	3.3	7	9	119	5.7 U	4.4 U	4.2 U	3.9 U	3.7 U	4.6 U	3.8 U	3.7 U	4.9 U	3.7 U	3.5 U
4,4'-DDT	UG/KG	23	5%	3.3	5	6	119	5.7 U	4.4 U	4.2 U	3.9 U	3.7 U	4.6 U	3.8 U	3.7 U	4.9 U	3.7 U	3.5 U
Aldrin	UG/KG	0	0%	5	0	0	119	2.9 U	2.3 U	2.2 U	2 U	1.9 U	2.4 U	2 U	1.9 U	2.5 U	1.9 U	1.8 U
Alpha-BHC	UG/KG	1.4	2%	20	0	2	119	2.9 U	2.3 U	2.2 U	2 U	1.9 U	2.4 U	2 U	1.9 U	2.5 U	1.9 U	1.8 U
Alpha-Chlordane	UG/KG	16	6%	94	0	7	119	2.9 U	2.3 U	2.2 U	1.2 J	1.9 U	2.4 U	2 U	1.9 U	2.5 U	1.9 U	1.8 U
Aroclor 1016	UG/KG	0	0%	100	0	0	119	57 U	44 U	42 U	39 U	37 U	46 U	38 U	37 U	49 U	37 U	35 U
Aroclor-1221	UG/KG	0	0%	100	0	0	119	120 U	89 U	85 U	80 U	75 U	94 U	77 U	75 U	100 U	74 U	71 U
Aroclor-1232	UG/KG	0	0%	100	0	0	119	57 U	44 U	42 U	39 U	37 U	46 U	38 U	37 U	49 U	37 U	35 U
Aroclor-1242	UG/KG	0	0%	100	0	0	119	57 U	44 U	42 U	39 U	37 U	46 U	38 U	37 U	49 U	37 U	35 U
Aroclor 1248	UG/KG	0	0%	100	0	0	119	57 U	44 U	42 U	39 U	37 U	46 U	38 U	37 U	49 U	37 U	35 U
Aroclor-1254	UG/KG	0	0%	100	0	0	119	57 U	44 U	42 U	39 U	37 U	46 U	38 U	37 U	49 U	37 U	35 U
Aroclor-1260	UG/KG	27	2%	100	0	2	119	57 U	44 U	42 U	39 U	37 U	46 U	38 U	37 U	49 U	37 U	35 U
Beta-BHC	UG/KG	4.5	1%	36	0	1	119	2.9 U	2.3 U	2.2 U	2 U	1.9 U	2.4 U	2 U	1.9 U	2.5 U	1.9 U	1.8 U
Delta-BHC	UG/KG	0	0%	40	0	0	119	2.9 U	2.3 U	2.2 U	2 U	1.9 U	2.4 U	2 U	1.9 U	2.5 U	1.9 U	1.8 U
Dieldrin	UG/KG	27	6%	5	5	7	119	5.7 U	4.4 U	4.2 U	3.9 U	3.7 U	4.6 U	3.8 U	3.7 U	4.9 U	3.7 U	3.5 U

TABLE 1
SEAD-57 SOIL SAMPLE RESULTS
SENECA ARMY DEPOT ACTIVITY

Parameter	Units	Maximum Concentration	Frequency of Detection	Criteria Value [1]	Number of Exceedances	Number of Times Detected	Number of Samples Analyzed [2]	SEAD-57 SB57-4 SOIL 574004 0 2 12/03/99 SA PISI RI Value (Q)	SEAD-57 SB57-4 SOIL 574005 2 4 12/03/99 SA PISI RI Value (Q)	SEAD-57 SB57-4 SOIL 574006 4 6 12/03/99 SA PISI RI Value (Q)	SEAD-57 SB57-5 SOIL 574002 0 2 12/01/99 SA PISI RI Value (Q)	SEAD-57 SB57-5 SOIL 574022 2 4 12/07/99 SA PISI RI Value (Q)	SEAD-57 SB57-5 SOIL 574003 4 5.2 12/01/99 SA PISI RI Value (Q)	SEAD-57 SB57-6 SOIL 574019 0 2 12/05/99 SA PISI RI Value (Q)	SEAD-57 SB57-6 SOIL 574020 2 4 12/05/99 SA PISI RI Value (Q)	SEAD-57 SB57-6 SOIL 574021 4 6 12/05/99 SA PISI RI Value (Q)	SEAD-57 SB57-7 SOIL 574016 0 2 12/03/99 SA PISI RI Value (Q)	SEAD-57 SB57-7 SOIL 574017 2 4 12/03/99 SA PISI RI Value (Q)
Volatile Organic Compounds																		
1,1,1-Trichloroethane	UG/KG	0	0%	680	0	0	127	13 U	10 U	9 U	12 U	8 UJ	8 U	12 U	8 U	9 U	10 U	9 UJ
1,1,2,2-Tetrachloroethane	UG/KG	0	0%	0	0	0	127	13 U	10 UJ	9 UJ	12 U	8 UJ	8 U	12 U	8 UJ	9 UJ	10 UJ	9 UJ
1,1,2-Trichloroethane	UG/KG	0	0%	0	0	0	127	13 U	10 UJ	9 U	12 U	8 UR	8 U	12 U	8 UJ	9 U	10 U	9 UR
1,1-Dichloroethane	UG/KG	0	0%	270	0	0	127	13 U	10 U	9 U	12 U	8 UJ	8 U	12 U	8 U	9 U	10 U	9 UJ
1,1-Dichloroethene	UG/KG	0	0%	330	0	0	127	13 U	10 U	9 U	12 U	8 UJ	8 U	12 U	8 U	9 U	10 U	9 UJ
1,2-Dichloroethane	UG/KG	0	0%	20	0	0	127	13 U	10 U	9 U	12 U	8 UJ	8 U	12 U	8 U	9 U	10 U	9 UJ
1,2-Dichloroethene (total)	UG/KG	0	0%	190	0	0	127	13 U	10 U	9 U	12 U	8 UJ	8 U	12 U	8 U	9 U	10 U	9 UJ
1,2-Dichloropropane	UG/KG	0	0%	0	0	0	127	13 U	10 UJ	9 U	12 U	8 UR	8 U	12 U	8 UJ	9 U	10 U	9 UR
Acetone	UG/KG	700	74%	50	87	94	127	210 J	24 UJ	17 UJ	68 J	8 UJ	14 J	77 J	8 U	15 J	160 J	11 UJ
Benzene	UG/KG	1	2%	60	0	2	127	13 U	1 J	9 U	12 U	8 UJ	8 U	12 U	1 J	9 U	10 U	9 UJ
Bromodichloromethane	UG/KG	0	0%	0	0	0	127	13 U	10 UJ	9 U	12 U	8 UR	8 U	12 U	8 UJ	9 U	10 U	9 UR
Bromoform	UG/KG	0	0%	0	0	0	127	13 U	10 UJ	9 UJ	12 U	8 UJ	8 U	12 U	8 U	9 U	10 UJ	9 UJ
Carbon disulfide	UG/KG	22	11%	0	0	14	127	13 U	10 U	9 U	12 U	1 J	8 U	12 U	8 U	9 U	10 U	0.9 J
Carbon tetrachloride	UG/KG	0	0%	760	0	0	127	13 U	10 U	9 U	12 U	8 UJ	8 U	12 U	8 U	9 U	10 U	9 UJ
Chlorobenzene	UG/KG	0	0%	1100	0	0	127	13 U	10 UJ	9 UJ	12 U	8 UJ	8 U	12 U	8 UJ	9 UJ	10 UJ	9 UJ
Chlorodibromomethane	UG/KG	0	0%	0	0	0	127	13 U	10 UJ	9 U	12 U	8 UR	8 U	12 U	8 UJ	9 U	10 U	9 UR
Chloroethane	UG/KG	0	0%	0	0	0	127	13 U	10 U	9 U	12 U	8 UJ	8 U	12 U	8 U	9 U	10 U	9 UJ
Chloroform	UG/KG	7	1%	370	0	1	127	13 U	10 U	9 U	12 U	8 UJ	8 U	12 U	8 U	9 U	10 U	9 UJ
Cis-1,3-Dichloropropene	UG/KG	0	0%	0	0	0	127	13 U	10 UJ	9 U	12 U	8 UR	8 U	12 U	8 UJ	9 U	10 U	9 UR
Ethyl benzene	UG/KG	0	0%	1000	0	0	127	13 U	10 UJ	9 UJ	12 U	8 UJ	8 U	12 U	8 UJ	9 UJ	10 UJ	9 UJ
Methyl bromide	UG/KG	0	0%	0	0	0	127	13 U	10 U	9 U	12 U	8 UJ	8 U	12 U	8 UJ	9 U	10 U	9 UJ
Methyl butyl ketone	UG/KG	0	0%	0	0	0	127	13 UJ	10 UJ	9 UJ	12 UJ	8 UR	8 UJ	12 U	8 U	9 U	10 UJ	9 UR
Methyl chloride	UG/KG	0	0%	0	0	0	127	13 U	10 U	9 U	12 U	8 UJ	8 U	12 U	8 U	9 U	10 U	9 UJ
Methyl ethyl ketone	UG/KG	64	62%	120	0	79	127	22 J	10 UJ	9 UJ	8 J	8 UR	8 U	8 J	8 UJ	9 U	15 J	9 UR
Methyl isobutyl ketone	UG/KG	0	0%	0	0	0	127	13 U	10 UJ	9 U	12 U	8 UR	8 U	12 U	8 UJ	9 U	10 U	9 UR
Methylene chloride	UG/KG	1	2%	50	0	2	127	13 U	10 U	9 U	12 U	8 UJ	8 U	12 U	8 U	9 U	10 U	9 UJ
Styrene	UG/KG	0	0%	0	0	0	127	13 U	10 UJ	9 UJ	12 U	8 UJ	8 U	12 U	8 UJ	9 UJ	10 UJ	9 UJ
Tetrachloroethene	UG/KG	6	6%	1300	0	7	127	13 U	10 UJ	9 U	12 U	8 UR	8 U	12 U	8 UJ	9 U	10 U	9 UR
Toluene	UG/KG	33	65%	700	0	82	127	13 U	2 J	9 U	12 U	8 UR	8 U	12 U	1 J	9 U	10 U	9 UR
Total Xylenes	UG/KG	2	2%	260	0	3	127	13 U	1 J	9 UJ	12 U	8 UJ	8 U	12 U	2 J	9 UJ	10 UJ	9 UJ
Trans-1,3-Dichloropropene	UG/KG	0	0%	0	0	0	127	13 U	10 UJ	9 U	12 U	8 UR	8 U	12 U	8 UJ	9 U	10 U	9 UR
Trichloroethene	UG/KG	0	0%	470	0	0	127	13 U	10 UJ	9 U	12 U	8 UR	8 U	12 U	8 UJ	9 U	10 U	9 UR
Vinyl chloride	UG/KG	0	0%	20	0	0	127	13 U	10 U	9 U	12 U	8 UJ	8 U	12 U	8 U	9 U	10 U	9 UJ
Semivolatile Organic Compounds																		
1,2,4-Trichlorobenzene	UG/KG	0	0%	0	0	0	119	82 U	76 U	72 U	86 U	75 U	74 U	90 U	74 U	74 U	780 U	85 U
1,2-Dichlorobenzene	UG/KG	0	0%	1100	0	0	119	82 U	76 U	72 U	86 U	75 U	74 U	90 U	74 U	74 U	780 U	85 U
1,3-Dichlorobenzene	UG/KG	0	0%	2400	0	0	119	82 U	76 U	72 U	86 U	75 U	74 U	90 U	74 U	74 U	780 U	85 U
1,4-Dichlorobenzene	UG/KG	0	0%	1800	0	0	119	82 U	76 U	72 U	86 U	75 U	74 U	90 U	74 U	74 U	780 U	85 U
2,2'-oxybis(1-Chloropropane)	UG/KG	0	0%	0	0	0	18											
2,4,5-Trichlorophenol	UG/KG	0	0%	0	0	0	119	200 U	180 U	180 U	210 U	180 U	180 U	220 U	180 U	180 U	1900 U	210 U
2,4,6-Trichlorophenol	UG/KG	0	0%	0	0	0	119	82 U	76 U	72 U	86 U	75 U	74 U	90 U	74 U	74 U	780 U	85 U
2,4-Dichlorophenol	UG/KG	0	0%	0	0	0	119	82 UJ	76 UJ	72 UJ	86 UJ	75 UJ	74 UJ	90 U	74 U	74 U	780 UJ	85 UJ
2,4-Dimethylphenol	UG/KG	0	0%	0	0	0	119	82 UJ	76 UJ	72 UJ	86 UJ	75 UJ	74 UJ	90 U	74 U	74 U	780 UJ	85 UJ
2,4-Dinitrophenol	UG/KG	0	0%	0	0	0	119	200 UR	180 UR	180 UR	210 UR	180 UR	180 UR	220 UJ	180 UR	180 UR	1900 UR	210 UR
2,4-Dinitrotoluene	UG/KG	0	0%	0	0	0	119	82 U	76 U	72 U	86 U	75 U	74 UJ	90 U	74 U	74 U	780 U	85 U
2,6-Dinitrotoluene	UG/KG	0	0%	0	0	0	119	82 UJ	76 UJ	72 UJ	86 UJ	75 UJ	74 U	90 U	74 U	74 U	780 UJ	85 UJ
2-Chloronaphthalene	UG/KG	0	0%	0	0	0	119	82 U	76 U	72 U	86 U	75 U	74 U	90 U	74 U	74 U	780 U	85 U
2 Chlorophenol	UG/KG	0	0%	0	0	0	119	82 U	76 U	72 U	86 U	75 U	74 U	90 U	74 U	74 U	780 U	85 U
2-Methylnaphthalene	UG/KG	750	3%	0	0	3	119	82 U	76 U	72 U	86 U	75 U	74 U	4.5 J	74 U	74 U	780 U	3.7 J
2-Methylphenol	UG/KG	0	0%	330	0	0	119	82 UJ	76 UJ	72 UJ	86 UJ	75 UJ	74 UJ	90 U	74 U	74 U	780 UJ	85 UJ
2-Nitroaniline	UG/KG	0	0%	0	0	0	119	200 UJ	180 UJ	180 UJ	210 UJ	180 UJ	180 UJ	220 U	180 U	180 U	1900 UJ	210 UJ
2-Nitrophenol	UG/KG	0	0%	0	0	0	119	82 U	76 U	72 U	86 U	75 U	74 U	90 U	74 U	74 U	780 U	85 U
3,3'-Dichlorobenzidine	UG/KG	0	0%	0	0	0	119	82 UJ	76 UJ	72 UJ	86 UJ	75 UJ	74 UJ	90 UR	74 UR	74 UR	780 UJ	85 UJ
3-Nitroaniline	UG/KG	0	0%	0	0	0	119	200 UJ	180 UJ	180 UJ	210 UJ	180 UJ	180 UJ	220 U	180 U	180 U	1900 UJ	210 UJ
4,6-Dinitro-2-methylphenol	UG/KG	0	0%	0	0	0	119	200 UJ	180 UJ	180 UJ	210 UJ	180 UJ	180 UJ	220 U	180 UJ	180 UJ	1900 UJ	210 UJ
4-Bromophenyl phenyl ether	UG/KG	0	0%	0	0	0	119	82 U	76 U	72 U	86 U	75 U	74 U	90 UJ	74 UJ	74 UJ	780 U	85 U
4-Chloro-3-methylphenol	UG/KG	0	0%	0	0	0	119	82 UJ	76 UJ	72 UJ	86 UJ	75 UJ	74 UJ	90 U	74 U	74 U	780 UJ	85 UJ
4-Chloroaniline	UG/KG	0	0%	0	0	0	119	82 UJ	76 UJ	72 UJ	86 UJ	75 UJ	74 UJ	90 U	74 U	74 U	780 UJ	85 UJ
4-Chlorophenyl phenyl ether	UG/KG	0	0%	0	0	0	119	82 U	76 U	72 U	86 U	75 U	74 U	90 U	74 U	74 U	780 U	85 U
4-Methylphenol	UG/KG	13	3%	330	0	3	119	82 UJ	76 UJ	72 UJ	86 UJ	75 UJ	74 UJ	4.9 J	74 U	74 U	780 UJ	85 UJ
4-Nitroaniline	UG/KG	0	0%	0	0	0	119	200 U	180 U	180 U	210 U	180 U	180 U	220 U	180 U	180 U	1900 U	210 U
4-Nitrophenol	UG/KG	0	0%	0	0	0	119	200 UJ	180 UJ	180 UJ	210 UJ	180 UJ	180 UJ	220 U	180 UR	180 UR	1900 UJ	210 UJ
Acenaphthene	UG/KG	0	0%	20000	0	0	119	82 U	76 U	72 U	86 U	75 U	74 U	90 U	74 U	74 U	780 U	85 U
Acenaphthylene	UG/KG	0	0%	100000	0	0	119	82 U	76 U	72 U	86 U	75 U	74 U	90 U	74 U	74 U	780 U	85 U

TABLE 1
SEAD-57 SOIL SAMPLE RESULTS
SENECA ARMY DEPOT ACTIVITY

Parameter	Units	Maximum Concentration	Frequency of Detection	Criteria Value [1]	Number of Exceedances	Number of Times Detected	Number of Samples Analyzed [2]	SEAD-57 SB57-4 SOIL 574004 0 2 12/03/99 SA P1S1 RI Value (Q)	SEAD-57 SB57-4 SOIL 574005 2 4 12/03/99 SA P1S1 RI Value (Q)	SEAD-57 SB57-4 SOIL 574006 4 6 12/03/99 SA P1S1 RI Value (Q)	SEAD-57 SB57-5 SOIL 574002 0 2 12/01/99 SA P1S1 RI Value (Q)	SEAD-57 SB57-5 SOIL 574022 2 4 12/07/99 SA P1S1 RI Value (Q)	SEAD-57 SB57-5 SOIL 574003 4 5.2 12/01/99 SA P1S1 RI Value (Q)	SEAD-57 SB57-6 SOIL 574019 0 2 12/05/99 SA P1S1 RI Value (Q)	SEAD-57 SB57-6 SOIL 574020 2 4 12/05/99 SA P1S1 RI Value (Q)	SEAD-57 SB57-6 SOIL 574021 4 6 12/05/99 SA P1S1 RI Value (Q)	SEAD-57 SB57-7 SOIL 574016 0 2 12/03/99 SA P1S1 RI Value (Q)	SEAD-57 SB57-7 SOIL 574017 2 4 12/03/99 SA P1S1 RI Value (Q)
Endosulfan I	UG/KG	5.2	1%	2400	0	1	119	2.1 U	2 U	1.9 U	2.2 U	1.9 U	1.9 U	2.3 U	1.9 U	1.9 U	2 U	2.2 U
Endosulfan II	UG/KG	3.1	1%	2400	0	1	119	4.1 U	3.8 U	3.6 U	4.3 U	3.8 U	3.7 U	4.5 U	3.7 U	3.7 U	3.9 U	4.3 U
Endosulfan sulfate	UG/KG	0	0%	2400	0	0	119	4.1 U	3.8 U	3.6 U	4.3 U	3.8 U	3.7 U	4.5 U	3.7 U	3.7 U	3.9 U	4.3 U
Endrin	UG/KG	0	0%	14	0	0	119	4.1 U	3.8 U	3.6 U	4.3 U	3.8 U	3.7 U	4.5 U	3.7 U	3.7 U	3.9 U	4.3 U
Endrin aldehyde	UG/KG	3.8	1%	0	0	1	119	4.1 U	3.8 U	3.6 U	4.3 U	3.8 U	3.7 U	4.5 U	3.7 U	3.7 U	3.9 U	4.3 U
Endrin ketone	UG/KG	4	1%	0	0	1	119	4.1 U	3.8 U	3.6 U	4.3 U	3.8 U	3.7 U	4.5 U	3.7 U	3.7 U	3.9 U	4.3 U
Gamma-BHC-Lindane	UG/KG	0	0%	100	0	0	119	2.1 U	2 U	1.9 U	2.2 U	1.9 U	1.9 U	2.3 U	1.9 U	1.9 U	2 U	2.2 U
Gamma-Chlordane	UG/KG	0	0%	0	0	0	119	2.1 U	2 U	1.9 U	2.2 U	1.9 U	1.9 U	2.3 U	1.9 U	1.9 U	2 U	2.2 U
Heptachlor	UG/KG	1.6	1%	42	0	1	119	2.1 U	2 U	1.9 U	2.2 U	1.9 U	1.9 U	2.3 U	1.9 U	1.9 U	2 U	2.2 U
Heptachlor epoxide	UG/KG	2	1%	0	0	1	119	2.1 U	2 U	1.9 U	2.2 U	1.9 U	1.9 U	2.3 U	1.9 U	1.9 U	2 U	2.2 U
Methoxychlor	UG/KG	0	0%	0	0	0	119	21 U	20 U	19 U	22 U	19 U	19 U	23 U	19 U	19 U	20 U	22 U
Toxaphene	UG/KG	0	0%	0	0	0	119	210 U	200 U	190 U	220 U	190 U	190 U	230 U	190 U	190 U	200 U	220 U
Herbicides																		
2,4,5-T	UG/KG	0	0%	0	0	0	18											
2,4,5-TP Silvex	UG/KG	0	0%	3800	0	0	18											
2,4-D	UG/KG	0	0%	0	0	0	18											
2,4-DB	UG/KG	0	0%	0	0	0	18											
Dalapon	UG/KG	0	0%	0	0	0	18											
Dicamba	UG/KG	0	0%	0	0	0	18											
Dichloroprop	UG/KG	0	0%	0	0	0	18											
Dinoseb	UG/KG	0	0%	0	0	0	18											
MCPA	UG/KG	0	0%	0	0	0	18											
MCPP	UG/KG	0	0%	0	0	0	18											
Metals and Cyanide																		
Aluminum	MG/KG	22900	100%	0	0	119	119	14800	10400	11300	15600	15400	12200	16400	12300	14900	9910	12600
Antimony	MG/KG	6.5	49%	0	0	58	119	1 UR	1.1 J	0.83 J	1.1 UR	1.5 J	1.5 J	0.73 J	0.61 J	0.82 J	1.4 J	1.3 J
Arsenic	MG/KG	17.8	92%	13	1	110	119	4.7	3.7	5.3	4.2	5.6	3.3	4.5	5.5	4.6	3.7 J	4.9 J
Barium	MG/KG	237	100%	350	0	119	119	129	85.8	64	93.6	62.7	38.4	126	66.5	62	49.9	78.2
Beryllium	MG/KG	1.8	100%	7.2	0	119	119	0.79 J	0.53 J	0.53 J	0.69 J	0.66 J	0.56 J	1.1 J	0.8 J	0.93 J	0.45 J	0.58 J
Cadmium	MG/KG	28.6	22%	2.5	6	26	119	0.06 U	0.05 U	0.04 U	0.06 U	0.06 U	0.05 U	0.06 U	0.05 U	0.06 U	0.05 U	0.07 U
Calcium	MG/KG	213000	100%	0	0	119	119	22800	94000	77400	8570	17800	12400	5590	60600	2580	8920	81800
Chromium	MG/KG	32.1	100%	30	2	119	119	22.4	17.2	19.3	23.9	25.2	21.9	22.2	22.4	27.4	17.4	20.7
Cobalt	MG/KG	29.7	100%	0	0	119	119	11	9.4	13.8	10.8 J	17	12.4	11.7 J	13.1	14.9	10.6	12.5
Copper	MG/KG	2930	92%	50	2	109	119	29.8	24.5	24.8	20.9	26.1	18.3	25.8	27.1	19.4	**52.7**	32.8
Cyanide	MG/KG	0	0%	27	0	0	119	0.56 U	0.54 U	0.52 U	0.61 U	0.55 U	0.56 U	0.66 U	0.56 U	0.56 U	0.58 U	0.6 U
Iron	MG/KG	39800	100%	0	0	119	119	26100 J	21700 J	25700 J	28700 J	32300	25500 J	28700	27900	34400	21200	25700
Lead	MG/KG	1860	100%	63	2	119	119	12.3	8.5	10.1	18.5	7.9 J	3.6	21.5 J	9.8 J	4.4 J	45.1	13.8
Magnesium	MG/KG	27600	100%	0	0	119	119	13500	9870	10300	4470	7560	5910	4330	14300	6740	4410	11600
Manganese	MG/KG	2580	100%	1600	5	119	119	493	492	573	555	543	427	644	483	555	332	362
Mercury	MG/KG	0.15	75%	0.18	0	89	119	0.1 J	0.07 J	0.07 J	0.09 J	0.04 U	0.06 J	0.09 J	0.08 J	0.1 J	0.07 J	0.13 J
Nickel	MG/KG	54.1	100%	30	37	119	119	**41.1**	**31.1**	**39.2**	26.7	**44.5**	**34.9**	**33.4**	**42.9**	**45.7**	**36.7**	**39.1**
Potassium	MG/KG	3250	100%	0	0	119	119	1370 J	1410 J	1370 J	1580 J	1230	1080 J	1250	1180	1180	1350 J	1940 J
Selenium	MG/KG	2.7	63%	3.9	0	75	119	0.5 J	0.43 U	0.45 J	0.71 J	0.51 U	0.37 U	0.56 J	0.44 UJ	0.5 UJ	0.41 U	0.59 U
Silver	MG/KG	1.7	38%	2	0	45	119	0.57 J	0.4 J	0.44 J	0.43 J	0.49 J	0.27 J	0.31 UJ	0.28 UJ	0.29 UJ	0.55 J	0.42 J
Sodium	MG/KG	270	34%	0	0	41	119	179 U	157 U	128 U	190 U	187 U	161 J	108 J	214 J	155 J	150 U	213 U
Thallium	MG/KG	6.7	82%	0	0	98	119	0.59 U	2.3	2 J	0.94 J	1 J	1.3 J	2.4	1.6 J	1.7 J	2.3	0.71 U
Vanadium	MG/KG	104	99%	0	0	118	119	23.3	15.9	16.7	26.6	20.7	16	29.8	19.7	20.2	23.7	19.9
Zinc	MG/KG	1250	93%	109	11	111	119	77.9	76.8	**116**	77.3	98.3	71.5	100	**120**	107	**133**	99.6
Other Analyses																		
Cation exchange capacity	MEQ/100G	31.4	100%	0	0	32	32											
Nitrate/Nitrite Nitrogen	MG/KG	4.4	98%	0	0	99	101	1.4	0.19	0.05	2.9	0.11	0.1	0.07	0.59	1.4	0.06	0.22
Percent Solids	% WW	94	100%	0	0	101	101	80	85.6	91.5	76.3	88.2	88.8	73.1	88.7	88.8	85.4	77.4
Soil pH (std. units)	pH units	7.83	100%	0	0	33	33											
Total Organic Carbon	MG/KG	70500	100%	0	0	32	32											

Notes
(1) Criteria based on NYSDEC Brownfield Unrestricted Use Soil Cleanup Objectives;
http://www.dec.state.ny.us/website/regs/subpart375_6.html
(2) Sample-duplicate pairs were treated as discreet samples
(3) A bolded and outlined cell indicates a concentration that exceeded the criteria.

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected, the associated reporting limit is approximate
R = the analytical result was rejected during data validation

TABLE 1
SEAD-57 SOIL SAMPLE RESULTS
SENECA ARMY DEPOT ACTIVITY

Parameter	Units	Maximum Concentration	Frequency of Detection	Criteria Value [1]	Number of Exceedances	Number of Times Detected	Number of Samples Analyzed [2]	SEAD-57 SB57-7 SOIL 574018 4 6 12/03/99 SA PISI RI Value (Q)	SEAD-57 SS57-1 SOIL SS57-1-1 0 0.2 10/26/93 SA PISI RI Value (Q)	SEAD-57 SS57-1 SOIL SS57-1-2 0 0.2 12/08/93 SA PISI RI Value (Q)	SEAD-57 SS57-10 SOIL 574023 0 0.2 12/19/99 SA PISI RI Value (Q)	SEAD-57 SS57-11 SOIL 574024 0 0.2 12/19/99 SA PISI RI Value (Q)	SEAD-57 SS57-12 SOIL 574025 0 0.2 12/19/99 SA PISI RI Value (Q)	SEAD-57 SS57-13 SOIL 574026 0 0.2 12/19/99 SA PISI RI Value (Q)	SEAD-57 SS57-14 SOIL 574027 0 0.2 12/19/99 SA PISI RI Value (Q)	SEAD-57 SS57-15 SOIL 574028 0 0.2 12/19/99 SA PISI RI Value (Q)	SEAD-57 SS57-16 SOIL 574029 0 0.2 12/19/99 SA PISI RI Value (Q)	SEAD-57 SS57-17 SOIL 574030 0 0.2 12/19/99 SA PISI RI Value (Q)
Anthracene	UG/KG	8.2	3%	100000	0	3	119	74 U	420 U		86 U	93 U	94 U	90 U	86 U	85 U	87 U	89 U
Benzo(a)anthracene	UG/KG	62	21%	1000	0	25	119	74 U	420 U		86 U	93 U	94 U	90 U	86 U	85 U	87 U	89 U
Benzo(a)pyrene	UG/KG	76	17%	1000	0	20	119	74 U	420 U		86 U	93 U	94 U	90 U	86 U	85 U	87 U	89 U
Benzo(b)fluoranthene	UG/KG	67	24%	1000	0	29	119	74 U	420 U		86 U	93 U	94 U	90 U	86 U	85 U	87 U	89 U
Benzo(ghi)perylene	UG/KG	54	13%	100000	0	15	119	74 U	420 U		86 U	6.5 J	5.4 J	90 U	6.8 J	6.4 J	87 U	89 U
Benzo(k)fluoranthene	UG/KG	50	24%	800	0	29	119	74 U	420 U		86 UJ	93 UJ	94 UJ	90 UJ	86 UJ	85 UJ	87 UJ	89 UJ
Bis(2-Chloroethoxy)methane	UG/KG	0	0%	0	0	0	119	74 U	420 U		86 U	93 U	94 U	90 U	86 U	85 U	87 U	89 U
Bis(2-Chloroethyl)ether	UG/KG	0	0%	0	0	0	119	74 U	420 U		86 U	93 U	94 U	90 U	86 U	85 U	87 U	89 U
Bis(2-Chloroisopropyl)ether	UG/KG	0	0%	0	0	0	101	74 U			86 U	93 U	94 U	90 U	86 U	85 U	87 U	89 U
Bis(2-Ethylhexyl)phthalate	UG/KG	3400	15%	0	0	18	119	74 U	480 U		86 U	93 U	94 U	90 U	86 U	85 U	87 U	89 U
Butylbenzylphthalate	UG/KG	0	0%	0	0	0	119	74 U	420 U		86 UJ	93 U	94 U	90 U	86 U	85 U	87 U	89 U
Carbazole	UG/KG	0	0%	0	0	0	119	74 U	420 U		86 U	93 U	94 U	90 U	86 U	85 U	87 U	89 U
Chrysene	UG/KG	110	33%	1000	0	39	119	74 U	420 U		86 U	93 UJ	94 UJ	90 UJ	86 UJ	85 UJ	87 UJ	89 UJ
Di-n-butylphthalate	UG/KG	390	34%	0	0	40	119	74 U	420 U		86 UJ	5 J	94 U	90 U	86 U	85 U	87 U	89 U
Di-n-octylphthalate	UG/KG	2.6	1%	0	0	1	119	74 U	420 U		86 UJ	93 UJ	94 UJ	90 UJ	86 UJ	85 UJ	87 UJ	89 UJ
Dibenz(a,h)anthracene	UG/KG	24	6%	330	0	7	119	74 U	420 U		86 U	4.2 J	94 U	90 U	86 U	85 U	87 U	89 U
Dibenzofuran	UG/KG	0	0%	7000	0	0	119	74 U	420 U		86 U	93 U	94 U	90 U	86 U	85 U	87 U	89 U
Diethyl phthalate	UG/KG	8.8	2%	0	0	2	119	74 UJ	420 U		86 U	93 UJ	94 UJ	90 UJ	86 UJ	85 UJ	87 UJ	89 UJ
Dimethylphthalate	UG/KG	0	0%	0	0	0	119	74 U	420 U		86 UJ	93 UJ	94 UJ	90 UJ	86 UJ	85 UJ	87 UJ	89 UJ
Fluoranthene	UG/KG	150	50%	100000	0	60	119	74 U	420 U		11 J	6.9 J	5.9 J	4.8 J	10 J	10 J	7.9 J	4.6 J
Fluorene	UG/KG	120	2%	30000	0	2	119	74 U	420 U		86 U	93 U	94 U	90 U	86 U	85 U	87 U	89 U
Hexachlorobenzene	UG/KG	0	0%	330	0	0	119	74 U	420 U		86 UJ	93 UJ	94 UJ	90 UJ	86 UJ	85 UJ	87 UJ	89 UJ
Hexachlorobutadiene	UG/KG	0	0%	0	0	0	119	74 U	420 U		86 U	93 U	94 U	90 U	86 U	85 U	87 U	89 U
Hexachlorocyclopentadiene	UG/KG	0	0%	0	0	0	119	74 U	420 U		86 U	93 U	94 U	90 U	86 U	85 U	87 U	89 U
Hexachloroethane	UG/KG	0	0%	0	0	0	119	74 U	420 U		86 U	93 U	94 U	90 U	86 U	85 U	87 U	89 U
Indeno(1,2,3-cd)pyrene	UG/KG	37	13%	500	0	15	119	74 U	420 U		86 U	6.8 J	6 J	90 U	6.7 J	7.1 J	87 U	89 U
Isophorone	UG/KG	0	0%	0	0	0	119	74 U	420 U		86 U	93 U	94 U	90 U	86 U	85 U	87 U	89 U
N-Nitrosodiphenylamine	UG/KG	75	2%	0	0	2	119	74 U	420 U		86 U	93 U	94 U	90 U	86 U	85 U	87 U	89 U
N-Nitrosodipropylamine	UG/KG	0	0%	0	0	0	119	74 U	420 U		86 U	93 U	94 U	90 U	86 U	85 U	87 U	89 U
Naphthalene	UG/KG	180	1%	12000	0	1	119	74 U	420 U		86 UJ	93 UJ	94 UJ	90 UJ	86 UJ	85 UJ	87 UJ	89 UJ
Nitrobenzene	UG/KG	0	0%	0	0	0	119	74 U	420 U		86 U	93 U	94 U	90 U	86 U	85 U	87 U	89 U
Pentachlorophenol	UG/KG	0	0%	800	0	0	119	180 UJ	1000 U		210 UJ	220 UJ	230 UJ	220 UJ	210 UJ	200 UJ	210 UJ	220 UJ
Phenanthrene	UG/KG	230	37%	100000	0	44	119	74 U	420 U		5.9 J	6.5 J	3.6 J	90 U	6.7 J	6.8 J	5.7 J	89 U
Phenol	UG/KG	51	13%	330	0	16	119	74 U	420 U		86 U	93 U	94 U	90 U	86 U	85 U	8.3 J	5.9 J
Pyrene	UG/KG	230	52%	100000	3	62	119	74 UJ	420 U		11 J	6.3 J	4.8 J	4.3 J	9.9 J	8.9 J	7.5 J	4 J
Explosives																		
1,3,5-Trinitrobenzene	UG/KG	0	0%	0	0	0	119	120 U	130 U		120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U
1,3-Dinitrobenzene	UG/KG	0	0%	0	0	0	119	120 U	130 U		120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U
2,4,6-Trinitrotoluene	UG/KG	0	0%	0	0	0	119	120 U	130 U		120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U
2,4-Dinitrotoluene	UG/KG	0	0%	0	0	0	119	120 U	130 U		120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U
2,6-Dinitrotoluene	UG/KG	0	0%	0	0	0	119	120 U	130 U		120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U
2-Nitrotoluene	UG/KG	0	0%	0	0	0	101	120 U			120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U
2-amino-4,6-Dinitrotoluene	UG/KG	0	0%	0	0	0	119	120 U	130 U		120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U
3-Nitrotoluene	UG/KG	0	0%	0	0	0	101	120 U			120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U
4-Nitrotoluene	UG/KG	0	0%	0	0	0	101	120 U			120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U
4-amino-2,6-Dinitrotoluene	UG/KG	0	0%	0	0	0	119	120 U	130 U		120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U
HMX	UG/KG	0	0%	0	0	0	119	120 U	130 U		120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U
Nitrobenzene	UG/KG	0	0%	0	0	0	101	120 U			120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U
RDX	UG/KG	0	0%	0	0	0	119	120 U	130 U		120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U
Tetryl	UG/KG	0	0%	0	0	0	119	120 U	130 U		120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U
Pesticides and PCBs																		
4,4'-DDD	UG/KG	54	7%	3.3	5	8	119	3.7 U	4.3 U		4.3 U	4.6 U	4.6 U	4.5 U	4.3 U	4.2 U	4.3 U	4.4 U
4,4'-DDE	UG/KG	32	8%	3.3	7	9	119	3.7 U	4.3 U		4.3 U	4.6 U	4.6 U	4.5 U	4.3 U	4.2 U	4.3 U	4.4 U
4,4'-DDT	UG/KG	23	5%	3.3	5	6	119	3.7 U	4.3 U		4.3 U	4.6 U	4.6 U	4.5 U	4.3 U	4.2 U	4.3 U	4.4 U
Aldrin	UG/KG	0	0%	5	0	0	119	1.9 U	2.2 U		2.2 U	2.4 U	2.4 U	2.3 U	2.2 U	2.2 U	2.2 U	2.3 U
Alpha-BHC	UG/KG	1.4	2%	20	0	2	119	1.9 U	2.2 U		2.2 U	2.4 U	2.4 U	2.3 U	2.2 U	2.2 U	2.2 U	2.3 U
Alpha-Chlordane	UG/KG	16	6%	94	0	7	119	1.9 U	2.2 U		2.2 U	2.4 U	2.4 U	2.3 U	2.2 U	2.2 U	2.2 U	2.3 U
Aroclor-1016	UG/KG	0	0%	100	0	0	119	37 U	43 U		43 U	46 U	46 U	45 U	43 U	42 U	43 U	44 U
Aroclor-1221	UG/KG	0	0%	100	0	0	119	75 U	86 U		87 U	94 U	94 U	91 U	88 U	86 U	87 U	90 U
Aroclor-1232	UG/KG	0	0%	100	0	0	119	37 U	43 U		43 U	46 U	46 U	45 U	43 U	42 U	43 U	44 U
Aroclor-1242	UG/KG	0	0%	100	0	0	119	37 U	43 U		43 U	46 U	46 U	45 U	43 U	42 U	43 U	44 U
Aroclor-1248	UG/KG	0	0%	100	0	0	119	37 U	43 U		43 U	46 U	46 U	45 U	43 U	42 U	43 U	44 U
Aroclor-1254	UG/KG	0	0%	100	0	0	119	37 U	43 U		43 U	46 U	46 U	45 U	43 U	42 U	43 U	44 U
Aroclor-1260	UG/KG	27	2%	100	0	2	119	37 U	24 J		43 U	46 U	46 U	45 U	43 U	42 U	43 U	44 U
Beta-BHC	UG/KG	4.5	1%	36	0	1	119	1.9 U	2.2 U		2.2 U	2.4 U	2.4 U	2.3 U	2.2 U	2.2 U	2.2 U	2.3 U
Delta-BHC	UG/KG	0	0%	40	0	0	119	1.9 U	2.2 U		2.2 U	2.4 U	2.4 U	2.3 U	2.2 U	2.2 U	2.2 U	2.3 U
Dieldrin	UG/KG	27	6%	5	5	7	119	3.7 U	**26** J		4.3 U	**10** J	4.6 U	4.5 U	4.3 U	4.2 U	4.3 U	4.4 U

TABLE 1
SEAD-57 SOIL SAMPLE RESULTS
SENECA ARMY DEPOT ACTIVITY

Parameter	Units	Maximum Concentration	Frequency of Detection	Criteria Value [1]	Number of Exceedances	Number of Times Detected	Number of Samples Analyzed [2]	SEAD-57 SS57-18 SOIL 574031 0 0.2 12/19/99 SA PISI RI Value (Q)	SEAD-57 SS57-19 SOIL 574032 0 0.2 12/19/99 SA PISI RI Value (Q)	SEAD-57 SS57-2 SOIL SS57-2-1 0 0.2 10/26/93 SA PISI RI Value (Q)	SEAD-57 SS57-2 SOIL SS57-2-2 0 0.2 12/08/93 SA PISI RI Value (Q)	SEAD-57 SS57-20 SOIL 574033 0 0.2 12/19/99 SA PISI RI Value (Q)	SEAD-57 SS57-21 SOIL 574034 0 0.2 12/19/99 SA PISI RI Value (Q)	SEAD-57 SS57-22 SOIL 574035 0 0.2 12/19/99 SA PISI RI Value (Q)	SEAD-57 SS57-23 SOIL 574036 0 0.2 12/19/99 SA PISI RI Value (Q)	SEAD-57 SS57-24 SOIL 574037 0 0.2 12/19/99 SA PISI RI Value (Q)	SEAD-57 SS57-25 SOIL 574038 0 0.2 12/19/99 SA PISI RI Value (Q)	SEAD-57 SS57-27 SOIL 574041 0 0.2 12/20/99 DU PISI RI Value (Q)
Volatile Organic Compounds																			
1,1,1-Trichloroethane	UG/KG	0	0%	680	0	0	127	12 U	11 U	12 U	13 U	11 U	13 U	11 U	13 U	16 U	13 U	13 U	
1,1,2,2-Tetrachloroethane	UG/KG	0	0%	0	0	0	127	12 U	11 U	12 U	13 U	11 U	13 U	11 U	13 U	16 U	13 U	13 U	
1,1,2-Trichloroethane	UG/KG	0	0%	0	0	0	127	12 U	11 U	12 U	13 U	11 U	13 U	11 U	13 U	16 U	13 U	13 U	
1,1-Dichloroethane	UG/KG	0	0%	270	0	0	127	12 U	11 U	12 U	13 U	11 U	13 U	11 U	13 U	16 U	13 U	13 U	
1,1-Dichloroethene	UG/KG	0	0%	330	0	0	127	12 U	11 U	12 U	13 U	11 U	13 U	11 U	13 U	16 U	13 U	13 U	
1,2-Dichloroethane	UG/KG	0	0%	20	0	0	127	12 U	11 U	12 U	13 U	11 U	13 U	11 U	13 U	16 U	13 U	13 U	
1,2-Dichloroethene (total)	UG/KG	0	0%	190	0	0	127	12 U	11 U	12 U	13 U	11 U	13 U	11 U	13 U	16 U	13 U	13 U	
1,2-Dichloropropane	UG/KG	0	0%	0	0	0	127	12 U	11 U	12 U	13 U	11 U	13 U	11 U	13 U	16 U	13 U	13 U	
Acetone	UG/KG	700	74%	50	87	94	127	120 J	170 J	12 U	13 U	220 J	210 J	200 J	63 J	280 J	190 J	340 J	
Benzene	UG/KG	1	2%	60	0	2	127	12 U	11 U	12 U	13 U	11 U	13 U	11 U	13 U	16 U	13 U	13 U	
Bromodichloromethane	UG/KG	0	0%	0	0	0	127	12 U	11 U	12 U	13 U	11 U	13 U	11 U	13 U	16 U	13 U	13 U	
Bromoform	UG/KG	0	0%	0	0	0	127	12 U	11 U	12 U	13 U	11 U	13 U	11 U	13 U	16 U	13 U	13 U	
Carbon disulfide	UG/KG	22	11%	0	0	14	127	12 U	11 U	12 U	13 U	11 U	13 U	11 U	13 U	16 U	13 U	13 U	
Carbon tetrachloride	UG/KG	0	0%	760	0	0	127	12 U	11 U	12 U	13 U	11 U	13 U	11 U	13 U	16 U	13 U	13 U	
Chlorobenzene	UG/KG	0	0%	1100	0	0	127	12 U	11 U	12 U	13 U	11 U	13 U	11 U	13 U	16 U	13 U	13 U	
Chlorodibromomethane	UG/KG	0	0%	0	0	0	127	12 U	11 U	12 U	13 U	11 U	13 U	11 U	13 U	16 U	13 U	13 U	
Chloroethane	UG/KG	0	0%	0	0	0	127	12 U	11 U	12 U	13 U	11 U	13 U	11 U	13 U	16 U	13 U	13 U	
Chloroform	UG/KG	7	1%	370	0	1	127	12 U	11 U	12 U	13 U	11 U	13 U	11 U	13 U	16 U	13 U	13 U	
Cis-1,3-Dichloropropene	UG/KG	0	0%	0	0	0	127	12 U	11 U	12 U	13 U	11 U	13 U	11 U	13 U	16 U	13 U	13 U	
Ethyl benzene	UG/KG	0	0%	1000	0	0	127	12 U	11 U	12 U	13 U	11 U	13 U	11 U	13 U	16 U	13 U	13 U	
Methyl bromide	UG/KG	0	0%	0	0	0	127	12 U	11 U	12 U	13 U	11 U	13 U	11 U	13 U	16 U	13 U	13 U	
Methyl butyl ketone	UG/KG	0	0%	0	0	0	127	12 U	11 U	12 U	13 U	11 U	13 U	11 U	13 U	16 U	13 U	13 U	
Methyl chloride	UG/KG	0	0%	0	0	0	127	12 U	11 U	12 U	13 U	11 U	13 U	11 U	13 U	16 U	13 U	13 U	
Methyl ethyl ketone	UG/KG	64	62%	120	0	79	127	12	16	12 U	13 U	18	22	20	6 J	35	17	23	
Methyl isobutyl ketone	UG/KG	0	0%	0	0	0	127	12 U	11 U	12 U	13 U	11 U	13 U	11 U	13 U	16 U	13 U	13 U	
Methylene chloride	UG/KG	1	2%	50	0	2	127	12 U	11 U	12 U	13 U	11 U	13 U	11 U	13 U	16 U	13 U	13 U	
Styrene	UG/KG	0	0%	0	0	0	127	12 U	11 U	12 U	13 U	11 U	13 U	11 U	13 U	16 U	13 U	13 U	
Tetrachloroethene	UG/KG	6	6%	1300	0	7	127	12 U	11 U	2 J	13 U	11 U	13 U	11 U	13 U	16 U	13 U	13 U	
Toluene	UG/KG	33	65%	700	0	82	127	4 J	4 J	12 U	13 U	27	4 J	4 J	5 J	16 U	14	32 J	
Total Xylenes	UG/KG	2	2%	260	0	3	127	12 U	11 U	12 U	13 U	11 U	13 U	11 U	13 U	16 U	13 U	1 J	
Trans-1,3-Dichloropropene	UG/KG	0	0%	0	0	0	127	12 U	11 U	12 U	13 U	11 U	13 U	11 U	13 U	16 U	13 U	13 U	
Trichloroethene	UG/KG	0	0%	470	0	0	127	12 U	11 U	12 U	13 U	11 U	13 U	11 U	13 U	16 U	13 U	13 U	
Vinyl chloride	UG/KG	0	0%	20	0	0	127	12 U	11 U	12 U	13 U	11 U	13 U	11 U	13 U	16 U	13 U	13 U	
Semivolatile Organic Compounds																			
1,2,4-Trichlorobenzene	UG/KG	0	0%	0	0	0	119	87 U	84 U	410 U		85 U	86 U	85 U	88 U	98 U	90 U	90 U	
1,2-Dichlorobenzene	UG/KG	0	0%	1100	0	0	119	87 UJ	84 UJ	410 U		85 UJ	86 UJ	85 UJ	88 UJ	98 U	90 U	90 U	
1,3-Dichlorobenzene	UG/KG	0	0%	2400	0	0	119	87 U	84 U	410 U		85 U	86 U	85 U	88 U	98 U	90 U	90 U	
1,4-Dichlorobenzene	UG/KG	0	0%	1800	0	0	119	87 U	84 U	410 U		85 U	86 U	85 U	88 U	98 U	90 U	90 U	
2,2'-oxybis(1-Chloropropane)	UG/KG	0	0%	0	0	0	18			410 U									
2,4,5-Trichlorophenol	UG/KG	0	0%	0	0	0	119	210 U	200 U	990 U		200 U	210 U	200 U	210 U	240 U	220 U	220 U	
2,4,6-Trichlorophenol	UG/KG	0	0%	0	0	0	119	87 U	84 U	410 U		85 U	86 U	85 U	88 U	98 U	90 U	90 U	
2,4-Dichlorophenol	UG/KG	0	0%	0	0	0	119	87 U	84 U	410 U		85 U	86 U	85 U	88 U	98 U	90 U	90 U	
2,4-Dimethylphenol	UG/KG	0	0%	0	0	0	119	87 U	84 U	410 U		85 U	86 U	85 U	88 U	98 U	90 U	90 U	
2,4-Dinitrophenol	UG/KG	0	0%	0	0	0	119	210 UR	200 UR	990 U		200 UR	210 UJ	200 UR	210 UR	240 UJ	220 UJ	220 UJ	
2,4-Dinitrotoluene	UG/KG	0	0%	0	0	0	119	87 U	84 U	410 U		85 U	86 U	85 U	88 U	98 U	90 U	90 U	
2,6-Dinitrotoluene	UG/KG	0	0%	0	0	0	119	87 U	84 U	410 U		85 U	86 U	85 U	88 U	98 U	90 U	90 U	
2-Chloronaphthalene	UG/KG	0	0%	0	0	0	119	87 U	84 U	410 U		85 U	86 U	85 U	88 U	98 U	90 U	90 U	
2-Chlorophenol	UG/KG	0	0%	0	0	0	119	87 U	84 U	410 U		85 U	86 U	85 U	88 U	98 U	90 U	90 U	
2-Methylnaphthalene	UG/KG	750	3%	0	0	3	119	87 UJ	84 UJ	410 U		85 UJ	86 UJ	85 UJ	88 UJ	98 U	90 U	90 U	
2-Methylphenol	UG/KG	0	0%	330	0	0	119	87 U	84 U	410 U		85 U	86 U	85 U	88 U	98 U	90 U	90 U	
2-Nitroaniline	UG/KG	0	0%	0	0	0	119	210 U	200 U	990 U		200 U	210 U	200 U	210 U	240 U	220 U	220 U	
2-Nitrophenol	UG/KG	0	0%	0	0	0	119	87 U	84 U	410 U		85 U	86 U	85 U	88 U	98 U	90 U	90 U	
3,3'-Dichlorobenzidine	UG/KG	0	0%	0	0	0	119	87 U	84 U	410 U		85 U	86 U	85 U	88 U	98 U	90 U	90 U	
3-Nitroaniline	UG/KG	0	0%	0	0	0	119	210 U	200 U	990 U		200 U	210 U	200 U	210 U	240 U	220 U	220 U	
4,6-Dinitro-2-methylphenol	UG/KG	0	0%	0	0	0	119	210 UJ	200 UJ	990 U		200 UJ	210 U	200 UJ	210 UJ	240 U	220 U	220 U	
4-Bromophenyl phenyl ether	UG/KG	0	0%	0	0	0	119	87 U	84 U	410 U		85 U	86 U	85 U	88 U	98 U	90 U	90 U	
4-Chloro-3-methylphenol	UG/KG	0	0%	0	0	0	119	87 U	84 U	410 U		85 U	86 U	85 U	88 U	98 U	90 U	90 U	
4-Chloroaniline	UG/KG	0	0%	0	0	0	119	87 U	84 U	410 U		85 U	86 U	85 U	88 U	98 U	90 U	90 U	
4-Chlorophenyl phenyl ether	UG/KG	0	0%	0	0	0	119	87 U	84 U	410 U		85 U	86 U	85 U	88 U	98 U	90 U	90 U	
4-Methylphenol	UG/KG	13	3%	330	0	3	119	87 U	84 U	410 U		85 U	86 U	85 U	88 U	98 U	90 U	90 U	
4-Nitroaniline	UG/KG	0	0%	0	0	0	119	210 U	200 U	990 U		200 U	210 UJ	200 U	210 U	240 UJ	220 UJ	220 U	
4-Nitrophenol	UG/KG	0	0%	0	0	0	119	210 U	200 U	990 U		200 U	210 U	200 U	210 U	240 U	220 U	220 UJ	
Acenaphthene	UG/KG	0	0%	20000	0	0	119	87 U	84 U	410 U		85 U	86 U	85 U	88 U	98 U	90 U	90 U	
Acenaphthylene	UG/KG	0	0%	100000	0	0	119	87 U	84 U	410 U		85 U	86 U	85 U	88 U	98 U	90 U	90 U	

TABLE 1
SEAD-57 SOIL SAMPLE RESULTS
SENECA ARMY DEPOT ACTIVITY

Parameter	Units	Maximum Concentration	Frequency of Detection	Criteria Value [1]	Number of Exceedances	Number of Times Detected	Number of Samples Analyzed [2]	SEAD-57 SS57-18 SOIL 574031 0 0.2 12/19/99 SA PISI RI	SEAD-57 SS57-19 SOIL 574032 0 0.2 12/19/99 SA PISI RI	SEAD-57 SS57-2 SOIL SS57-2-1 0 0.2 10/26/93 SA PISI RI	SEAD-57 SS57-2 SOIL SS57-2-2 0 0.2 12/08/93 SA PISI RI	SEAD-57 SS57-20 SOIL 574033 0 0.2 12/19/99 SA PISI RI	SEAD-57 SS57-21 SOIL 574034 0 0.2 12/19/99 SA PISI RI	SEAD-57 SS57-22 SOIL 574035 0 0.2 12/19/99 SA PISI RI	SEAD-57 SS57-23 SOIL 574036 0 0.2 12/19/99 SA PISI RI	SEAD-57 SS57-24 SOIL 574037 0 0.2 12/19/99 SA PISI RI	SEAD-57 SS57-25 SOIL 574038 0 0.2 12/19/99 SA PISI RI	SEAD-57 SS57-27 SOIL 574041 0 0.2 12/20/99 DU PISI RI
								Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Endosulfan I	UG/KG	5.2	1%	2400	0	1	119	2.2 U	2.2 U	2.1 U		2.2 U	2.2 U	2.2 U	2.2 U	5.2 J	2.3 U	2.3 U
Endosulfan II	UG/KG	3.1	1%	2400	0	1	119	4.3 U	4.2 U	4.1 U		4.2 U	4.3 U	4.2 U	4.3 U	3.1 J	4.5 U	4.5 U
Endosulfan sulfate	UG/KG	0	0%	2400	0	0	119	4.3 U	4.2 U	4.1 U		4.2 U	4.3 U	4.2 U	4.3 U	4.9 U	4.5 U	4.5 U
Endrin	UG/KG	0	0%	14	0	0	119	4.3 U	4.2 U	4.1 U		4.2 U	4.3 U	4.2 U	4.3 U	4.9 U	4.5 U	4.5 U
Endrin aldehyde	UG/KG	3.8	1%	0	0	1	119	4.3 U	4.2 U	4.1 U		4.2 U	4.3 U	4.2 U	4.3 U	4.9 U	4.5 U	4.5 U
Endrin ketone	UG/KG	4	1%	0	0	1	119	4.3 U	4.2 U	4.1 U		4.2 U	4.3 U	4.2 U	4.3 U	4.9 U	4.5 U	4.5 U
Gamma-BHC Lindane	UG/KG	0	0%	100	0	0	119	2.2 U	2.2 U	2.1 U		2.2 U	2.2 U	2.2 U	2.2 U	2.5 U	2.3 U	2.3 U
Gamma-Chlordane	UG/KG	0	0%	0	0	0	119	2.2 U	2.2 U	2.1 U		2.2 U	2.2 U	2.2 U	2.2 U	2.5 U	2.3 U	2.3 U
Heptachlor	UG/KG	1.6	1%	42	0	1	119	2.2 U	2.2 U	2.1 U		2.2 U	2.2 U	2.2 U	2.2 U	2.5 U	2.3 U	2.3 U
Heptachlor epoxide	UG/KG	2	1%	0	0	1	119	2.2 U	2.2 U	2.1 U		2.2 U	2.2 U	2.2 U	2.2 U	2.5 U	2.3 U	2.3 U
Methoxychlor	UG/KG	0	0%	0	0	0	119	22 U	22 U	21 U		22 U	22 U	22 U	22 U	25 U	23 U	23 U
Toxaphene	UG/KG	0	0%	0	0	0	119	220 U	220 U	210 U		220 U	220 U	220 U	220 U	250 U	230 U	230 U
Herbicides										6.3 U								
2,4,5-T	UG/KG	0	0%	0	0	0	18			6.3 U								
2,4,5-TP Silvex	UG/KG	0	0%	3800	0	0	18			63 U								
2,4-D	UG/KG	0	0%	0	0	0	18			63 U								
2,4-DB	UG/KG	0	0%	0	0	0	18			150 U								
Dalapon	UG/KG	0	0%	0	0	0	18			6.3 U								
Dicamba	UG/KG	0	0%	0	0	0	18			63 U								
Dichloroprop	UG/KG	0	0%	0	0	0	18			32 U								
Dinoseb	UG/KG	0	0%	0	0	0	18			6300 U								
MCPA	UG/KG	0	0%	0	0	0	18			6300 U								
MCPP	UG/KG	0	0%	0	0	0	18											
Metals and Cyanide																		
Aluminum	MG/KG	22900	100%	0	0	119	119	12600	12600	17300		13400	12100	14400	10700	16900	15000	16400
Antimony	MG/KG	6.5	49%	0	0	58	119	1.6 J	0.62 J	11.8 UJ		0.54 UR	1.3 J	0.68 J	0.52 UR	0.58 UR	0.86 J	0.55 UR
Arsenic	MG/KG	17.8	92%	13	1	110	119	5.1 J	2.7	4.6 UR		3.4	4.1 J	4.2	3.5 J	4.2	4.3	3
Barium	MG/KG	237	100%	350	0	119	119	98.4	74.1	65.8		76.2	93.5	79.6	53	164	139	84.8
Beryllium	MG/KG	1.8	100%	7.2	0	119	119	1.1 J	0.72 J	0.62 J		1 J	0.76 J	0.91 J	0.53 J	1.4	1.2	0.94 J
Cadmium	MG/KG	28.6	22%	2.5	6	26	119	0.05 U	0.04 U	0.74 U		0.05 U	0.05 U	6	0.05 U	0.05 U	0.05 U	0.05 U
Calcium	MG/KG	213000	100%	0	0	119	119	1750	1010	1950		835 J	1470	1490	2100	4110	2410	1500
Chromium	MG/KG	32.1	100%	30	2	119	119	15.5	14.3	24.2		16.1	15.1	18.7	11.9	22.8 J	19.8 J	23.4 J
Cobalt	MG/KG	29.7	100%	0	0	119	119	15.3	9.4 J	9.6 J		12.8	6.5 J	11.4 J	6.6 J	12.4 J	13.5	11.4 J
Copper	MG/KG	2930	92%	50	2	109	119	13.3	12.6	18.3		12.5	10	14	13.4	22	15	14.5
Cyanide	MG/KG	0	0%	27	0	0	119	0.62 U	0.57 U	0.73 U		0.64 U	0.64 U	0.62 U	0.63 U	0.73 U	0.68 U	0.63 U
Iron	MG/KG	39800	100%	0	0	119	119	23500	16600	28400		20000	20300	23800	15000	27100 J	26700 J	28300 J
Lead	MG/KG	1860	100%	63	2	119	119	23.5 J	19.9 J	17.7		18.8 J	20.9 J	66.8 J	16.1 J	24.5	24.3	21.3
Magnesium	MG/KG	27600	100%	0	0	119	119	2330 J	2530 J	4580		2510 J	2590 J	2970 J	2080 J	3750	3170	3900
Manganese	MG/KG	2580	100%	1600	5	119	119	1400	556	319		1160	454	746	306	1040 J	1180 J	677 J
Mercury	MG/KG	0.15	75%	0.18	0	89	119	0.08 J	0.08 J	0.04 J		0.06 J	0.1 J	0.07 J	0.06 J	0.12	0.11 J	0.1 J
Nickel	MG/KG	54.1	100%	30	37	119	119	13.3	14.3	27.3		16.9	13.5	20.7	11.9	27.9 J	20.3 J	25.5 J
Potassium	MG/KG	3250	100%	0	0	119	119	990 J	913 J	1240		961 J	1100 J	1060 J	768 J	1660	1280	1370
Selenium	MG/KG	2.7	63%	3.9	0	75	119	1.5 J	1.4 J	0.21 UJ		1.4 J	0.69 J	0.74 J	0.59 U	1 J	1.3 J	0.64 J
Silver	MG/KG	1.7	38%	2	0	45	119	0.32 UJ	0.36 J	1.5 UJ		0.32 UJ	0.29 UJ	0.32 UJ	0.31 UJ	0.34 UJ	0.3 UJ	0.32 UJ
Sodium	MG/KG	270	34%	0	0	41	119	70.3 U	62.5 U	44.5 J		71 U	65.2 U	70.4 U	68 U	76.7 U	65.7 U	72 U
Thallium	MG/KG	6.7	82%	0	0	98	119	3.8	3.6	0.23 U		3.8	1.7 J	2.9	0.75 U	3.7	4.9	2.8
Vanadium	MG/KG	104	99%	0	0	118	119	26	22.3	28.6		23.6	24.5	27.4	19	29.7	29.4	27.8
Zinc	MG/KG	1250	93%	109	11	111	119	50.4	57.6	70.6 UR		55	55.3	65.5	51.8	82.3 J	65.4 J	71.1 J
Other Analyses																		
Cation exchange capacity	MEQ/100G	31.4	100%	0	0	32	32											
Nitrate-Nitrite Nitrogen	MG/KG	4.4	98%	0	0	99	101	0.93	0.38			0.04	0.01	0.04	0.32	0.57 J	0.3 J	0.08 J
Percent Solids	% WW	94	100%	0	0	101	101	76.1	78.4			77.5	77.1	78.2	74.6	66.7	73.3	73
Soil pH (std. units)	pH units	7.83	100%	0	0	33	33											
Total Organic Carbon	MG/KG	70500	100%	0	0	32	32											

Notes

(1) Criteria based on NYSDEC Brownfield Unrestricted Use Soil Cleanup Objectives, http://www.dec.state.ny.us/website/regs/subpart375_6.html

(2) Sample-duplicate pairs were treated as discreet samples

(3) A bolded and outlined cell indicates a concentration that exceeded the criteria.

U = compound was not detected

J = the reported value is an estimated concentration

UJ = the compound was not detected, the associated reporting limit is approximate

R = the analytical result was rejected during data validation

TABLE 1
SEAD-57 SOIL SAMPLE RESULTS
SENECA ARMY DEPOT ACTIVITY

Parameter	Units	Maximum Concentration	Frequency of Detection	Criteria Value [1]	Number of Exceedances	Number of Times Detected	Number of Samples Analyzed [2]	SEAD-57 SS57-27 SOIL 574040 0 0.2 12/20/99 SA P1S1 RI Value (Q)	SEAD-57 SS57-28 SOIL 574042 0 0.2 12/20/99 SA P1S1 RI Value (Q)	SEAD-57 SS57-29 SOIL 574043 0 0.2 12/20/99 SA P1S1 RI Value (Q)	SEAD-57 SS57-3 SOIL SS57-3-1 0 0.2 10/26/93 SA P1S1 RI Value (Q)	SEAD-57 SS57-3 SOIL SS57-3-2 0 0.2 12/08/93 SA P1S1 RI Value (Q)	SEAD-57 SS57-30 SOIL 574001 0 0.2 11/30/99 DU P1S1 RI Value (Q)	SEAD-57 SS57-30 SOIL 574000 0 0.2 11/30/99 SA P1S1 RI Value (Q)	SEAD-57 SS57-31 SOIL 574044 0 0.2 12/20/99 SA P1S1 RI Value (Q)	SEAD-57 SS57-32 SOIL 574045 0 0.2 12/20/99 SA P1S1 RI Value (Q)	SEAD-57 SS57-33 SOIL 574046 0 0.2 12/20/99 SA P1S1 RI Value (Q)	SEAD-57 SS57-34 SOIL 574047 0 0.2 12/20/99 SA P1S1 RI Value (Q)
Anthracene	UG/KG	8.2	3%	100000	0	3	119	88 U	86 U	87 U	420 U		90 U	87 U	90 U	84 U	92 U	88 U
Benzo(a)anthracene	UG/KG	62	21%	1000	0	25	119	88 U	6.3 J	87 U	420 U		90 U	87 U	90 U	84 U	92 U	88 U
Benzo(a)pyrene	UG/KG	76	17%	1000	0	20	119	88 U	86 U	87 U	420 U		90 U	87 U	90 U	84 U	92 U	88 U
Benzo(b)fluoranthene	UG/KG	67	24%	1000	0	29	119	88 U	11 J	6.3 J	420 U		90 U	87 U	90 U	84 U	9 J	88 UJ
Benzo(ghi)perylene	UG/KG	54	13%	100000	0	15	119	88 U	86 U	87 U	420 U		90 U	87 U	90 U	84 U	92 U	88 U
Benzo(k)fluoranthene	UG/KG	50	24%	800	0	29	119	88 UJ	6.6 J	5.9 J	420 U		90 U	87 U	90 UJ	84 UJ	9 J	88 UJ
Bis(2-Chloroethoxy)methane	UG/KG	0	0%	0	0	0	119	88 U	86 U	87 U	420 U		90 UJ	87 UJ	90 U	84 U	92 U	88 U
Bis(2-Chloroethyl)ether	UG/KG	0	0%	0	0	0	119	88 U	86 U	87 U	420 U		90 U	87 U	90 U	84 U	92 U	88 U
Bis(2-Chloroisopropyl)ether	UG/KG	0	0%	0	0	0	101	88 U	86 U	87 U			90 U	87 U	90 U	84 U	92 U	88 U
Bis(2-Ethylhexyl)phthalate	UG/KG	3400	15%	0	0	18	119	88 U	18 J	11 J	420 U		90 U	87 U	90 U	84 U	9.7 J	13 J
Butylbenzylphthalate	UG/KG	0	0%	0	0	0	119	88 U	86 UJ	87 UJ	420 U		90 U	87 U	90 UJ	84 UJ	92 U	88 U
Carbazole	UG/KG	0	0%	0	0	0	119	88 U	86 U	87 U	420 U		90 UJ	87 UJ	90 U	84 U	92 U	88 U
Chrysene	UG/KG	110	33%	1000	0	39	119	88 UJ	8.1 J	5.4 J	420 U		90 U	87 U	5 J	84 U	5.5 J	4.4 J
Di-n-butylphthalate	UG/KG	390	34%	0	0	40	119	6.9 J	160	120	420 U		90 U	87 U	99	110	93	18 J
Di-n-octylphthalate	UG/KG	2.6	1%	0	0	1	119	88 UJ	86 UJ	87 UJ	420 U		90 U	87 U	90 UJ	84 UJ	92 UJ	88 UJ
Dibenz(a,h)anthracene	UG/KG	24	6%	330	0	7	119	88 U	86 U	87 U	420 U		90 U	87 U	90 U	84 U	92 U	88 U
Dibenzofuran	UG/KG	0	0%	7000	0	0	119	88 U	86 U	87 U	420 U		90 U	87 U	90 U	84 U	92 U	88 U
Diethyl phthalate	UG/KG	8.8	2%	0	0	2	119	2.6 J	86 UJ	87 UJ	420 U		90 UJ	87 UJ	90 UJ	84 UJ	92 UJ	88 UJ
Dimethylphthalate	UG/KG	0	0%	0	0	0	119	88 UJ	86 U	87 U	420 U		90 U	87 U	90 U	84 U	92 U	88 U
Fluoranthene	UG/KG	150	50%	100000	0	60	119	5.1 J	11 J	7.7 J	420 U		90 U	87 UJ	7.4 J	4.8 J	5.4 J	4.5 J
Fluorene	UG/KG	120	2%	30000	0	2	119	88 U	86 U	87 U	420 U		90 U	87 U	90 U	84 U	92 U	88 U
Hexachlorobenzene	UG/KG	0	0%	330	0	0	119	88 UJ	86 UJ	87 UJ	420 U		90 U	87 U	90 UJ	84 UJ	92 U	88 U
Hexachlorobutadiene	UG/KG	0	0%	0	0	0	119	88 U	86 U	87 U	420 U		90 U	87 U	90 U	84 U	92 U	88 U
Hexachlorocyclopentadiene	UG/KG	0	0%	0	0	0	119	88 U	86 U	87 U	420 U		90 U	87 U	90 U	84 U	92 U	88 U
Hexachloroethane	UG/KG	0	0%	0	0	0	119	88 U	86 U	87 U	420 U		90 U	87 U	90 U	84 U	92 U	88 U
Indeno(1,2,3-cd)pyrene	UG/KG	37	13%	500	0	15	119	88 U	86 U	87 U	420 U		90 U	87 UJ	90 U	84 U	92 U	88 U
Isophorone	UG/KG	0	0%	0	0	0	119	88 U	86 U	87 U	420 U		90 U	87 U	90 U	84 U	92 U	88 U
N-Nitrosodiphenylamine	UG/KG	75	2%	0	0	2	119	88 U	86 U	87 U	420 U		90 U	87 U	90 U	84 U	92 U	88 U
N-Nitrosodipropylamine	UG/KG	0	0%	0	0	0	119	88 U	86 U	87 U	420 U		90 U	87 U	90 U	84 U	92 U	88 U
Naphthalene	UG/KG	180	1%	12000	0	1	119	88 UJ	86 U	87 U	420 U		90 U	87 U	90 U	84 U	92 U	88 U
Nitrobenzene	UG/KG	0	0%	0	0	0	119	88 U	86 U	87 U	420 U		90 U	87 U	90 U	84 U	92 U	88 U
Pentachlorophenol	UG/KG	0	0%	800	0	0	119	210 UJ	210 U	210 U	1000 U		220 UJ	210 UJ	220 U	200 U	220 U	210 U
Phenanthrene	UG/KG	230	37%	100000	0	44	119	88 U	7.4 J	3.7 J	420 U		90 U	87 U	90 U	84 U	92 U	88 U
Phenol	UG/KG	51	13%	330	0	16	119	7.2 J	86 U	87 U	420 U		90 U	87 U	90 U	84 U	92 U	88 U
Pyrene	UG/KG	230	52%	100000	3	62	119	8.8 J	12 J	8.4 J	420 U		90 UJ	87 UJ	7.9 J	5.8 J	4.9 J	4.8 J
Explosives																		
1,3,5-Trinitrobenzene	UG/KG	0	0%	0	0	0	119	120 U	120 U	120 U	130 U		120 U	120 U	120 U	120 U	120 U	120 U
1,3-Dinitrobenzene	UG/KG	0	0%	0	0	0	119	120 U	120 U	120 U	130 U		120 U	120 U	120 U	120 U	120 U	120 U
2,4,6-Trinitrotoluene	UG/KG	0	0%	0	0	0	119	120 U	120 U	120 U	130 U		120 U	120 U	120 U	120 U	120 U	120 U
2,4-Dinitrotoluene	UG/KG	0	0%	0	0	0	119	120 U	120 U	120 U	130 U		120 U	120 U	120 U	120 U	120 U	120 U
2,6-Dinitrotoluene	UG/KG	0	0%	0	0	0	119	120 U	120 U	120 U	130 U		120 U	120 U	120 U	120 U	120 U	120 U
2-Nitrotoluene	UG/KG	0	0%	0	0	0	101	120 U	120 U	120 U			120 U	120 U	120 U	120 U	120 U	120 U
2-amino-4,6-Dinitrotoluene	UG/KG	0	0%	0	0	0	119	120 U	120 U	120 U	130 U		120 U	120 U	120 U	120 U	120 U	120 U
3-Nitrotoluene	UG/KG	0	0%	0	0	0	101	120 U	120 U	120 U			120 U	120 U	120 U	120 U	120 U	120 U
4-Nitrotoluene	UG/KG	0	0%	0	0	0	101	120 U	120 U	120 U			120 U	120 U	120 U	120 U	120 U	120 U
4-amino-2,6-Dinitrotoluene	UG/KG	0	0%	0	0	0	119	120 U	120 U	120 U	130 U		120 U	120 U	120 U	120 U	120 U	120 U
HMX	UG/KG	0	0%	0	0	0	119	120 U	120 U	120 U	130 U		120 U	120 U	120 U	120 U	120 U	120 U
Nitrobenzene	UG/KG	0	0%	0	0	0	101	120 U	120 U	120 U			120 U	120 U	120 U	120 U	120 U	120 U
RDX	UG/KG	0	0%	0	0	0	119	120 U	120 U	120 U	130 U		120 U	120 U	120 U	120 U	120 U	120 U
Tetryl	UG/KG	0	0%	0	0	0	119	120 U	120 U	120 U	130 U		120 U	120 U	120 U	120 U	120 U	120 U
Pesticides and PCBs																		
4,4'-DDD	UG/KG	54	7%	3.3	5	8	119	9.1 J	4.3 U	4.4 U	4.2 U		4.5 U	4.4 U	4.5 U	4.2 U	4.6 U	4.4 U
4,4'-DDE	UG/KG	32	8%	3.3	7	9	119	4.4 U	4.3 U	4.4 U	4.2 U		4.5 U	4.4 U	4.5 U	4.2 U	4.6 U	4.4 U
4,4'-DDT	UG/KG	23	5%	3.3	5	6	119	4.4 U	4.3 U	4.4 U	4.2 U		4.5 U	4.4 U	4.5 U	4.2 U	4.6 U	4.4 U
Aldrin	UG/KG	0	0%	5	0	0	119	2.2 U	2.2 U	2.3 U	2.2 U		2.3 U	2.3 U	2.3 U	2.2 U	2.4 U	2.3 U
Alpha-BHC	UG/KG	1.4	2%	20	0	2	119	2.2 U	2.2 U	2.3 U	2.2 U		2.3 U	2.3 U	2.3 U	2.2 U	2.4 U	2.3 U
Alpha-Chlordane	UG/KG	16	6%	94	0	7	119	2.2 U	2.2 U	2.3 U	2.2 U		2.4 J	2.2 J	2.3 U	2.2 U	2.4 U	2.3 U
Aroclor-1016	UG/KG	0	0%	100	0	0	119	44 U	43 U	44 U	42 U		45 U	44 U	45 U	42 U	46 U	44 U
Aroclor-1221	UG/KG	0	0%	100	0	0	119	88 U	88 U	89 U	86 U		92 U	90 U	92 U	86 U	94 U	90 U
Aroclor-1232	UG/KG	0	0%	100	0	0	119	44 U	43 U	44 U	42 U		45 U	44 U	45 U	42 U	46 U	44 U
Aroclor-1242	UG/KG	0	0%	100	0	0	119	44 U	43 U	44 U	42 U		45 U	44 U	45 U	42 U	46 U	44 U
Aroclor-1248	UG/KG	0	0%	100	0	0	119	44 U	43 U	44 U	42 U		45 U	44 U	45 U	42 U	46 U	44 U
Aroclor-1254	UG/KG	0	0%	100	0	0	119	44 U	43 U	44 U	42 U		45 U	44 U	45 U	42 U	46 U	44 U
Aroclor-1260	UG/KG	27	2%	100	0	2	119	44 U	43 U	44 U	42 U		45 U	44 U	45 U	42 U	46 U	44 U
Beta-BHC	UG/KG	4.5	1%	36	0	1	119	2.2 U	2.2 U	2.3 U	2.2 U		2.3 U	2.3 U	2.3 U	2.2 U	2.4 U	2.3 U
Delta-BHC	UG/KG	0	0%	40	0	0	119	2.2 U	2.2 U	2.3 U	2.2 U		2.3 U	2.3 U	2.3 U	2.2 U	2.4 U	2.3 U
Dieldrin	UG/KG	27	6%	5	5	7	119	18 J	4.3 U	4.4 U	4.2 U		4.5 U	4.4 U	4.5 U	4.2 U	4.6 U	4.4 U

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SEAD-57 SOIL SAMPLE RESULTS
SENECA ARMY DEPOT ACTIVITY

Parameter	Units	Maximum Concentration	Frequency of Detection	Criteria Value [1]	Number of Exceedances	Number of Times Detected	Number of Samples Analyzed [2]	SEAD-57 SS57-35 SOIL 574048 0 0.2 12/20/99 SA P1S1 RI Value (Q)	SEAD-57 SS57-36 SOIL 574049 0 0.2 12/20/99 SA P1S1 RI Value (Q)	SEAD-57 SS57-37 SOIL 574050 0 0.2 12/20/99 SA P1S1 RI Value (Q)	SEAD-57 SS57-38 SOIL 574051 0 0.2 12/20/99 SA P1S1 RI Value (Q)	SEAD-57 SS57-39 SOIL 574052 0 0.2 12/20/99 SA P1S1 RI Value (Q)	SEAD-57 SS57-40 SOIL 574053 0 0.2 12/20/99 SA P1S1 RI Value (Q)	SEAD-57 SS57-41 SOIL 574054 0 0.2 12/20/99 SA P1S1 RI Value (Q)	SEAD-57 SS57-42 SOIL 574055 0 0.2 12/21/99 SA P1S1 RI Value (Q)	SEAD-57 SS57-43 SOIL 574056 0 0.2 12/21/99 SA P1S1 RI Value (Q)	SEAD-57 SS57-44 SOIL 574057 0 0.2 12/21/99 SA P1S1 RI Value (Q)	SEAD-57 SS57-45 SOIL 574059 0 0.2 12/21/99 DU P1S1 RI Value (Q)
Volatile Organic Compounds																			
1,1,1-Trichloroethane	UG/KG	0	0%	680	0	0	127	13 U	14 U	14 U	12 U	12 U	13 U	13 U	12 U	9 U	10 U	12 U
1,1,2,2-Tetrachloroethane	UG/KG	0	0%	0	0	0	127	13 U	14 U	14 U	12 U	12 U	13 U	13 U	12 U	9 U	10 U	12 U
1,1,2-Trichloroethane	UG/KG	0	0%	0	0	0	127	13 U	14 U	14 U	12 U	12 U	13 U	13 U	12 U	9 U	10 U	12 U
1,1-Dichloroethane	UG/KG	0	0%	270	0	0	127	13 U	14 U	14 U	12 U	12 U	13 U	13 U	12 U	9 U	10 U	12 U
1,1-Dichloroethene	UG/KG	0	0%	330	0	0	127	13 U	14 U	14 U	12 U	12 U	13 U	13 U	12 U	9 U	10 U	12 U
1,2-Dichloroethane	UG/KG	0	0%	20	0	0	127	13 U	14 U	14 U	12 U	12 U	13 U	13 U	12 U	9 U	10 U	12 U
1,2-Dichloroethene (total)	UG/KG	0	0%	190	0	0	127	13 U	14 U	14 U	12 U	12 U	13 U	13 U	12 U	9 U	10 U	12 U
1,2-Dichloropropane	UG/KG	0	0%	0	0	0	127	13 U	14 U	14 U	12 U	12 U	13 U	13 U	12 U	9 U	10 U	12 U
Acetone	UG/KG	700	74%	50	87	94	127	310 J	160 J	280 J	210 J	98 J	180 J	350 J	170 J	93 J	100 J	88 J
Benzene	UG/KG	1	2%	60	0	2	127	13 U	14 U	14 U	12 U	12 U	13 U	13 U	12 U	9 U	10 U	12 U
Bromodichloromethane	UG/KG	0	0%	0	0	0	127	13 U	14 U	14 U	12 U	12 U	13 U	13 U	12 U	9 U	10 U	12 U
Bromoform	UG/KG	0	0%	0	0	0	127	13 U	14 U	14 U	12 U	12 U	13 U	13 U	12 U	9 U	10 U	12 U
Carbon disulfide	UG/KG	22	11%	0	0	14	127	13 U	14 U	14 U	12 U	12 U	13 U	13 U	12 U	9 U	10 U	12 U
Carbon tetrachloride	UG/KG	0	0%	760	0	0	127	13 U	14 U	14 U	12 U	12 U	13 U	13 U	12 U	9 U	10 U	12 U
Chlorobenzene	UG/KG	0	0%	1100	0	0	127	13 U	14 U	14 U	12 U	12 U	13 U	13 U	12 U	9 U	10 U	12 U
Chlorodibromomethane	UG/KG	0	0%	0	0	0	127	13 U	14 U	14 U	12 U	12 U	13 U	13 U	12 U	9 U	10 U	12 U
Chloroethane	UG/KG	0	0%	0	0	0	127	13 U	14 U	14 U	12 U	12 U	13 U	13 U	12 U	9 U	10 U	12 U
Chloroform	UG/KG	7	1%	370	0	1	127	13 U	14 U	14 U	12 U	12 U	13 U	13 U	12 U	9 U	10 U	12 U
Cis-1,3-Dichloropropene	UG/KG	0	0%	0	0	0	127	13 U	14 U	14 U	12 U	12 U	13 U	13 U	12 U	9 U	10 U	12 U
Ethyl benzene	UG/KG	0	0%	1000	0	0	127	13 U	14 U	14 U	12 U	12 U	13 U	13 U	12 U	9 U	10 U	12 U
Methyl bromide	UG/KG	0	0%	0	0	0	127	13 U	14 U	14 U	12 U	12 U	13 U	13 U	12 U	9 U	10 U	12 U
Methyl butyl ketone	UG/KG	0	0%	0	0	0	127	13 U	14 U	14 U	12 U	12 U	13 U	13 U	12 U	9 U	10 U	12 U
Methyl chloride	UG/KG	0	0%	0	0	0	127	13 U	14 U	14 U	12 U	12 U	13 U	13 U	12 U	9 U	10 U	12 U
Methyl ethyl ketone	UG/KG	64	62%	120	0	79	127	24	17 J	22 J	19 J	12 UJ	16 J	26 J	17 J	10	10 J	12 U
Methyl isobutyl ketone	UG/KG	0	0%	0	0	0	127	13 U	14 U	14 U	12 U	12 U	13 U	13 U	12 U	9 U	10 U	12 U
Methylene chloride	UG/KG	1	2%	50	0	2	127	13 U	14 U	14 U	12 U	12 U	13 U	13 U	12 U	9 U	10 U	12 U
Styrene	UG/KG	0	0%	0	0	0	127	13 U	14 U	14 U	12 U	12 U	13 U	13 U	12 U	9 U	10 U	12 U
Tetrachloroethene	UG/KG	6	6%	1300	0	7	127	13 U	14 U	14 U	12 U	12 U	13 U	13 U	12 U	9 U	10 U	12 U
Toluene	UG/KG	33	65%	700	0	82	127	23	6 J	11 J	8 J	5 J	7 J	9 J	4 J	2 J	6 J	9 J
Total Xylenes	UG/KG	2	2%	260	0	3	127	13 U	14 U	14 U	12 U	12 U	13 U	13 U	12 U	9 U	10 U	12 U
Trans-1,3-Dichloropropene	UG/KG	0	0%	0	0	0	127	13 U	14 U	14 U	12 U	12 U	13 U	13 U	12 U	9 U	10 U	12 U
Trichloroethene	UG/KG	0	0%	470	0	0	127	13 U	14 U	14 U	12 U	12 U	13 U	13 U	12 U	9 U	10 U	12 U
Vinyl chloride	UG/KG	0	0%	20	0	0	127	13 U	14 U	14 U	12 U	12 U	13 U	13 U	12 U	9 U	10 U	12 U
Semivolatile Organic Compounds																		
1,2,4-Trichlorobenzene	UG/KG	0	0%	0	0	0	119	93 U	84 U	94 U	89 UJ	91 UJ	94 UJ	90 UJ	83 UJ	89 UJ	86 U	92 U
1,2-Dichlorobenzene	UG/KG	0	0%	1100	0	0	119	93 U	84 U	94 U	89 UJ	91 UJ	94 UJ	90 UJ	83 UJ	89 UJ	86 U	92 U
1,3-Dichlorobenzene	UG/KG	0	0%	2400	0	0	119	93 U	84 U	94 U	89 UJ	91 UJ	94 UJ	90 UJ	83 UJ	89 UJ	86 U	92 U
1,4-Dichlorobenzene	UG/KG	0	0%	1800	0	0	119	93 U	84 U	94 U	89 UJ	91 UJ	94 UJ	90 UJ	83 UJ	89 UJ	86 U	92 U
2,2'-oxybis(1-Chloropropane)	UG/KG	0	0%	0	0	0	18											
2,4,5-Trichlorophenol	UG/KG	0	0%	0	0	0	119	220 U	200 U	230 U	220 UJ	220 UJ	230 UJ	220 UJ	200 UJ	220 UJ	210 U	220 U
2,4,6-Trichlorophenol	UG/KG	0	0%	0	0	0	119	93 U	84 U	94 U	89 UJ	91 UJ	94 UJ	90 UJ	83 UJ	89 UJ	86 U	92 U
2,4-Dichlorophenol	UG/KG	0	0%	0	0	0	119	93 U	84 U	94 U	89 UJ	91 UJ	94 UJ	90 UJ	83 UJ	89 UJ	86 U	92 U
2,4-Dimethylphenol	UG/KG	0	0%	0	0	0	119	93 U	84 U	94 U	89 UJ	91 UJ	94 UJ	90 UJ	83 UJ	89 UJ	86 U	92 U
2,4-Dinitrophenol	UG/KG	0	0%	0	0	0	119	220 UJ	200 UJ	230 UJ	220 UR	220 UR	230 UR	220 UR	200 UR	220 UR	210 UR	220 UR
2,4-Dinitrotoluene	UG/KG	0	0%	0	0	0	119	93 U	84 U	94 U	89 UJ	91 UJ	94 UJ	90 UJ	83 UJ	89 UJ	86 U	92 U
2,6-Dinitrotoluene	UG/KG	0	0%	0	0	0	119	93 U	84 U	94 U	89 UJ	91 UJ	94 UJ	90 UJ	83 UJ	89 UJ	86 U	92 U
2-Chloronaphthalene	UG/KG	0	0%	0	0	0	119	93 U	84 U	94 U	89 UJ	91 UJ	94 UJ	90 UJ	83 UJ	89 UJ	86 U	92 U
2-Chlorophenol	UG/KG	0	0%	0	0	0	119	93 U	84 U	94 U	89 UJ	91 UJ	94 UJ	90 UJ	83 UJ	89 UJ	86 U	92 U
2-Methylnaphthalene	UG/KG	750	39%	0	0	3	119	93 U	84 U	94 U	89 UJ	91 UJ	94 UJ	90 UJ	83 UJ	89 UJ	86 U	92 U
2 Methylphenol	UG/KG	0	0%	330	0	0	119	93 U	84 U	94 U	89 UJ	91 UJ	94 UJ	90 UJ	83 UJ	89 UJ	86 U	92 U
2-Nitroaniline	UG/KG	0	0%	0	0	0	119	220 U	200 U	230 U	220 UJ	220 UJ	230 UJ	220 UJ	200 UJ	220 UJ	210 U	220 U
2-Nitrophenol	UG/KG	0	0%	0	0	0	119	93 U	84 U	94 U	89 UJ	91 UJ	94 UJ	90 UJ	83 UJ	89 UJ	86 U	92 U
3,3'-Dichlorobenzidine	UG/KG	0	0%	0	0	0	119	93 U	84 U	94 U	89 UJ	91 UJ	94 UJ	90 UJ	83 UJ	89 UJ	86 U	92 U
3-Nitroaniline	UG/KG	0	0%	0	0	0	119	220 U	200 U	230 U	220 UJ	220 UJ	230 UJ	220 UJ	200 UJ	220 UJ	210 U	220 U
4,6-Dinitro-2-methylphenol	UG/KG	0	0%	0	0	0	119	220 U	200 U	230 U	220 UJ	220 UJ	230 UJ	220 UJ	200 UJ	220 UJ	210 UJ	220 UJ
4-Bromophenyl phenyl ether	UG/KG	0	0%	0	0	0	119	93 U	84 U	94 U	89 UJ	91 UJ	94 UJ	90 UJ	83 UJ	89 UJ	86 U	92 U
4-Chloro-3-methylphenol	UG/KG	0	0%	0	0	0	119	93 U	84 U	94 U	89 UJ	91 UJ	94 UJ	90 UJ	83 UJ	89 UJ	86 U	92 U
4-Chloroaniline	UG/KG	0	0%	0	0	0	119	93 U	84 U	94 U	89 UJ	91 UJ	94 UJ	90 UJ	83 UJ	89 UJ	86 U	92 U
4-Chlorophenyl phenyl ether	UG/KG	0	0%	0	0	0	119	93 U	84 U	94 U	89 UJ	91 UJ	94 UJ	90 UJ	83 UJ	89 UJ	86 U	92 U
4-Methylphenol	UG/KG	13	3%	330	0	3	119	93 U	84 U	94 U	89 UJ	91 UJ	94 UJ	90 UJ	83 UJ	89 UJ	86 U	92 U
4-Nitroaniline	UG/KG	0	0%	0	0	0	119	220 U	200 U	230 U	220 UJ	220 UJ	230 UJ	220 UJ	200 UJ	220 UJ	210 U	220 U
4-Nitrophenol	UG/KG	0	0%	0	0	0	119	220 UJ	200 UJ	230 UJ	220 UJ	220 UJ	230 UJ	220 UJ	200 UJ	220 UJ	210 U	220 U
Acenaphthene	UG/KG	0	0%	20000	0	0	119	93 U	84 U	94 U	89 UJ	91 UJ	94 UJ	90 UJ	83 UJ	89 UJ	86 U	92 U
Acenaphthylene	UG/KG	0	0%	100000	0	0	119	93 U	84 U	94 U	89 UJ	91 UJ	94 UJ	90 UJ	83 UJ	89 UJ	86 U	92 U

TABLE 1
SEAD-57 SOIL SAMPLE RESULTS
SENECA ARMY DEPOT ACTIVITY

Parameter	Units	Maximum Concentration	Frequency of Detection	Criteria Value [1]	Number of Exceedances	Number of Times Detected	Number of Samples Analyzed [2]	SEAD-57 SS57-35 SOIL 574048 0 0.2 12/20/99 SA P1S1 RI	SEAD-57 SS57-36 SOIL 574049 0 0.2 12/20/99 SA P1S1 RI	SEAD-57 SS57-37 SOIL 574050 0 0.2 12/20/99 SA P1S1 RI	SEAD-57 SS57-38 SOIL 574051 0 0.2 12/20/99 SA P1S1 RI	SEAD-57 SS57-39 SOIL 574052 0 0.2 12/20/99 SA P1S1 RI	SEAD-57 SS57-40 SOIL 574053 0 0.2 12/20/99 SA P1S1 RI	SEAD-57 SS57-41 SOIL 574054 0 0.2 12/20/99 SA P1S1 RI	SEAD-57 SS57-42 SOIL 574055 0 0.2 12/21/99 SA P1S1 RI	SEAD-57 SS57-43 SOIL 574056 0 0.2 12/21/99 SA P1S1 RI	SEAD-57 SS57-44 SOIL 574057 0 0.2 12/21/99 SA P1S1 RI	SEAD-57 SS57-45 SOIL 574059 0 0.2 12/21/99 DU P1S1 RI
Endosulfan I	UG KG	5.2	1%	2400	0	1	119	2.4 U	2.2 U	2.4 U	2.3 U	2.4 U	2.4 U	2.3 U	2.1 U	2.3 U	2.2 U	2.4 U
Endosulfan II	UG KG	3.1	1%	2400	0	1	119	4.6 U	4.2 U	4.7 U	4.4 U	4.6 U	4.7 U	4.5 U	4.1 U	4.4 U	4.3 U	4.6 U
Endosulfan sulfate	UG KG	0	0%	2400	0	0	119	4.6 U	4.2 U	4.7 U	4.4 U	4.6 U	4.7 U	4.5 U	4.1 U	4.4 U	4.3 U	4.6 U
Endrin	UG KG	0	0%	14	0	0	119	4.6 U	4.2 U	4.7 U	4.4 U	4.6 U	4.7 U	4.5 U	4.1 U	4.4 U	4.3 U	4.6 U
Endrin aldehyde	UG KG	3.8	1%	0	0	1	119	4.6 U	4.2 U	4.7 U	4.4 U	4.6 U	4.7 U	4.5 U	4.1 U	4.4 U	4.3 U	4.6 U
Endrin ketone	UG KG	4	1%	0	0	1	119	4.6 U	4.2 U	4.7 U	4.4 U	4.6 U	4.7 U	4.5 U	4.1 U	4.4 U	4.3 U	4.6 U
Gamma-BHC Lindane	UG KG	0	0%	100	0	0	119	2.4 U	2.2 U	2.4 U	2.3 U	2.4 U	2.4 U	2.3 U	2.1 U	2.3 U	2.2 U	2.4 U
Gamma-Chlordane	UG KG	0	0%	0	0	0	119	2.4 U	2.2 U	2.4 U	2.3 U	2.4 U	2.4 U	2.3 U	2.1 U	2.3 U	2.2 U	2.4 U
Heptachlor	UG KG	1.6	1%	42	0	1	119	2.4 U	2.2 U	2.4 U	2.3 U	2.4 U	2.4 U	2.3 U	2.1 U	2.3 U	2.2 U	2.4 U
Heptachlor epoxide	UG KG	2	1%	0	0	1	119	2.4 U	2.2 U	2.4 U	2.3 U	2.4 U	2.4 U	2.3 U	2.1 U	2.3 U	2.2 U	2.4 U
Methoxychlor	UG KG	0	0%	0	0	0	119	24 U	22 U	24 U	23 U	24 U	24 U	23 U	21 U	23 U	22 U	24 U
Toxaphene	UG KG	0	0%	0	0	0	119	240 U	220 U	240 U	230 U	240 U	240 U	230 U	210 U	230 U	220 U	240 U
Herbicides																		
2,4,5-T	UG KG	0	0%	0	0	0	18											
2,4,5-TP Silvex	UG KG	0	0%	3800	0	0	18											
2,4-D	UG KG	0	0%	0	0	0	18											
2,4-DB	UG KG	0	0%	0	0	0	18											
Dalapon	UG KG	0	0%	0	0	0	18											
Dicamba	UG KG	0	0%	0	0	0	18											
Dichloroprop	UG KG	0	0%	0	0	0	18											
Dinoseb	UG KG	0	0%	0	0	0	18											
MCPA	UG KG	0	0%	0	0	0	18											
MCPP	UG KG	0	0%	0	0	0	18											
Metals and Cyanide																		
Aluminum	MG KG	22900	100%	0	0	119	119	13500	12100	16500	11800	15100	16100	13300	11800	11800	11300	13400
Antimony	MG KG	6.5	49%	0	0	58	119	0.59 UR	0.52 UR	0.61 J	0.59 UR	0.61 UR	0.51 J	0.57 UR	0.53 UR	0.53 UR	0.49 U	0.51 U
Arsenic	MG KG	17.8	92%	13	1	110	119	4.5	4.3	4.9	2 J	4.1	3.7	2.5 J	3.2	5.1	4.8	2.8
Barium	MG KG	237	100%	350	0	119	119	187	108	168	83.5	202	141	91.9	106	200	115	132
Beryllium	MG KG	1.8	100%	7.2	0	119	119	1.2 J	0.93 J	1.5	0.7 J	1.5	1.1	0.79 J	0.84 J	1.4	0.88 J	0.79 J
Cadmium	MG KG	28.6	22%	2.5	6	26	119	0.05 U	0.05 U	0.06 U	0.05 U	0.06 U	0.04 U	0.05 U	0.05 U	0.05 U	0.06 J	2.9
Calcium	MG KG	213000	100%	0	0	119	119	5050	2890	4820	2910	2900	3660	3430	2950	3450	2950	3230
Chromium	MG KG	32.1	100%	30	2	119	119	18.9 J	16.3 J	21 J	16	20.1	20.4	18.2 J	15.4 J	16.2 J	15.2 J	16.7 J
Cobalt	MG KG	29.7	100%	0	0	119	119	12 J	11.5 J	15	6.9 J	17.1	8.2 J	8.5 J	7.2 J	15.8	9 J	6.2 J
Copper	MG KG	2930	92%	50	2	109	119	17	16.7	21.7	14.1	18.7	20.8	17.7	15.1	15.8	14.6	16.4
Cyanide	MG KG	0	0%	27	0	0	119	0.7 U	0.61 U	0.72 U	0.68 U	0.66 U	0.71 U	0.66 U	0.61 U	0.65 U	0.63 U	0.62 U
Iron	MG KG	39800	100%	0	0	119	119	23800 J	23000 J	27300 J	20200	27200	24600	22800	19000	25000	19600	18800
Lead	MG KG	1860	100%	63	2	119	119	20.1	18	21.7	18.4	18	12.5	22.1	12.8	17.6	13.3 J	25.5 J
Magnesium	MG KG	27600	100%	0	0	119	119	3500	3360	3780	2760	3340	3310	3150	2970	3420	2910	3040
Manganese	MG KG	2580	100%	1600	5	119	119	1220 J	931 J	1540 J	335 J	**1990** J	406 J	359 J	568 J	**2270** J	728	224 J
Mercury	MG KG	0.15	75%	0.18	0	89	119	0.11 J	0.09	0.11	0.09 J	0.14 J	0.1 J	0.13	0.09 J	0.11 J	0.05 U	0.07 UJ
Nickel	MG KG	54.1	100%	30	37	119	119	22.8 J	18.4 J	27.4 J	16.4 J	25.3 J	25.2 J	21 J	17.2 J	19.6 J	17.1	19.1
Potassium	MG KG	3250	100%	0	0	119	119	1400	1290	1830	1280 J	1480	1440	1370	1170 J	1190 J	1030 J	1110 J
Selenium	MG KG	2.7	63%	3.9	0	75	119	2.1 J	0.88 J	1.8 J	0.74 J	1.8 J	1.1 J	0.7 J	1.3 J	2.7 J	0.78 J	0.58 U
Silver	MG KG	1.7	38%	2	0	45	119	0.35 UJ	0.31 UJ	0.36 UJ	0.35 UJ	0.36 UJ	0.26 UJ	0.34 UJ	0.31 UJ	0.32 UJ	0.5 J	0.45 J
Sodium	MG KG	270	34%	0	0	41	119	77.3 U	68.2 U	79.6 U	78.1 U	80.2 U	58.6 U	75.3 U	69.4 U	70.2 U	99.1 J	90.7 J
Thallium	MG KG	6.7	82%	0	0	98	119	3.9	3.6	5.4	2.1 J	5.7	2.5	1.8 J	2.2 J	6.6	4	1.6 J
Vanadium	MG KG	104	99%	0	0	118	119	24.3	25.2	30.6	21.6	27.2	26.2	23.4	22.1	25.8	22.2	21.9
Zinc	MG KG	1250	93%	109	11	111	119	71.4 J	53.1 J	75.4 J	57.7 J	79.1 J	68.5 J	69.1 J	50.1 J	51.7 J	49.9	57.8
Other Analyses																		
Cation exchange capacity	MEQ 100G	31.4	100%	0	0	32	32											
Nitrate Nitrite Nitrogen	MG KG	4.4	98%	0	0	99	101	0.78 J	0.72 J	0.37 J	0.46 J	0.26 J	0.41 J	0.45 J	0.01 U	0.1 J	0.04	0.42
Percent Solids	% WW	94	100%	0	0	101	101	70.5	77.8	69.8	74	72.1	70	73.1	78.6	74.2	77.2	71.8
Soil pH (std. units)	pH units	7.83	100%	0	0	33	33											
Total Organic Carbon	MG KG	70500	100%	0	0	32	32											

Notes
(1) Criteria based on NYSDEC Brownfield Unrestricted Use Soil Cleanup Objectives,
http://www.dec.state.ny.us/website/regs/subpart375_6.html
(2) Sample-duplicate pairs were treated as discreet samples
(3) A bolded and outlined cell indicates a concentration that exceeded the criteria

U – compound was not detected
J – the reported value is an estimated concentration
UJ – the compound was not detected, the associated reporting limit is approximate
R – the analytical result was rejected during data validation

TABLE 1
SEAD-57 SOIL SAMPLE RESULTS
SENECA ARMY DEPOT ACTIVITY

Parameter	Units	Maximum Concentration	Frequency of Detection	Criteria Value [1]	Number of Exceedances	Number of Times Detected	Number of Samples Analyzed [2]	SEAD-57 SS57-45 SOIL 574058 0 0.2 12/21/99 SA PISI RI Value (Q)	SEAD-57 SS57-46 SOIL 574060 0 0.2 12/21/99 SA PISI RI Value (Q)	SEAD-57 SS57-47 SOIL 574061 0 0.2 12/21/99 SA PISI RI Value (Q)	SEAD-57 SS57-48 SOIL 574062 0 0.2 12/21/99 SA PISI RI Value (Q)	SEAD-57 SS57-49 SOIL 574063 0 0.2 12/21/99 SA PISI RI Value (Q)	SEAD-57 SS57-5 SOIL SS57-5-1 0 0.2 10/26/93 SA PISI RI Value (Q)	SEAD-57 SS57-5 SOIL SS57-5-2 0 0.2 12/08/93 SA PISI RI Value (Q)	SEAD-57 SS57-50 SOIL 574064 0 0.2 12/21/99 SA PISI RI Value (Q)	SEAD-57 SS57-51 SOIL 574065 0 0.2 12/21/99 SA PISI RI Value (Q)	SEAD-57 SS57-52 SOIL 574066 0 0.2 12/21/99 SA PISI RI Value (Q)	SEAD-57 SS57-53 SOIL 574067 0 0.2 12/21/99 SA PISI RI Value (Q)
Anthracene	UG/KG	8.2	3%	100000	0	3	119	90 UJ	86 U	82 U	92 U	90 U	470 U		94 U	100 U	96 U	100 U
Benzo(a)anthracene	UG/KG	62	21%	1000	0	25	119	90 UJ	86 U	82 U	92 U	90 U	470 U		94 U	100 U	96 U	5 J
Benzo(a)pyrene	UG/KG	76	17%	1000	0	20	119	90 UJ	86 U	82 U	4.6 J	90 U	470 U		4.8 J	100 U	6.9 J	8 J
Benzo(b)fluoranthene	UG/KG	67	24%	1000	0	29	119	90 UJ	86 U	82 U	92 U	5.4 J	470 U		4.6 J	100 U	6.6 J	8.4 J
Benzo(ghi)perylene	UG/KG	54	13%	100000	0	15	119	90 UJ	86 U	82 U	92 U	90 U	470 U		94 U	100 U	96 U	100 U
Benzo(k)fluoranthene	UG/KG	50	24%	800	0	29	119	90 UJ	86 UJ	82 UJ	92 UJ	5.4 J	470 U		5.7 J	100 U	8.5 J	7.2 J
Bis(2-Chloroethoxy)methane	UG/KG	0	0%	0	0	0	119	90 UJ	86 U	82 U	92 U	90 U	470 U		94 U	100 U	96 U	100 U
Bis(2-Chloroethyl)ether	UG/KG	0	0%	0	0	0	119	90 UJ	86 U	82 U	92 U	90 U	470 U		94 U	100 U	96 U	100 U
Bis(2-Chloroisopropyl)ether	UG/KG	0	0%	0	0	0	101	90 UJ	86 U	82 U	92 U	90 U			94 U	100 U	96 U	100 U
Bis(2-Ethylhexyl)phthalate	UG/KG	3400	15%	0	0	18	119	90 UJ	86 UJ	82 UJ	92 UJ	90 UJ	580 U		94 UJ	100 UJ	96 UJ	100 UJ
Butylbenzylphthalate	UG/KG	0	0%	0	0	0	119	90 UJ	86 UJ	82 UJ	92 UJ	90 UJ	470 U		94 UJ	100 UJ	96 UJ	100 UJ
Carbazole	UG/KG	0	0%	0	0	0	119	90 UJ	86 UJ	82 UJ	92 UJ	90 UJ	470 U		94 UJ	100 U	96 U	100 U
Chrysene	UG/KG	110	33%	1000	0	39	119	90 UJ	86 U	82 U	4.8 J	4.8 J	470 U		5.3 J	100 U	8.3 J	9.2 J
Di-n-butylphthalate	UG/KG	390	34%	0	0	40	119	90 UJ	86 U	82 U	92 U	90 U	470 U		94 U	100 U	96 U	100 U
Di-n-octylphthalate	UG/KG	2.6	1%	0	0	1	119	90 UJ	86 U	82 U	92 U	90 U	470 U		94 U	100 U	96 U	2.6 J
Dibenz(a,h)anthracene	UG/KG	24	6%	330	0	7	119	90 UJ	86 U	82 U	92 U	90 U	470 U		94 U	100 U	96 U	100 U
Dibenzofuran	UG/KG	0	0%	7000	0	0	119	90 UJ	86 U	82 U	92 U	90 U	470 U		94 U	100 U	96 U	100 U
Diethyl phthalate	UG/KG	8.8	2%	0	0	2	119	90 UJ	86 UJ	82 UJ	92 UJ	90 UJ	470 U		94 UJ	100 UJ	96 UJ	100 UJ
Dimethylphthalate	UG/KG	0	0%	0	0	0	119	90 UJ	86 U	82 U	92 U	90 U	470 U		94 U	100 U	96 U	100 U
Fluoranthene	UG/KG	150	50%	100000	0	60	119	90 UJ	86 UJ	82 UJ	8.6 J	7.7 J	470 U		9.2 J	9.2 J	12 J	14 J
Fluorene	UG/KG	120	2%	30000	0	2	119	90 UJ	86 U	82 U	92 U	90 U	470 U		94 U	100 U	96 U	100 U
Hexachlorobenzene	UG/KG	0	0%	330	0	0	119	90 UJ	86 U	82 U	92 U	90 U	470 U		94 U	100 U	96 U	100 U
Hexachlorobutadiene	UG/KG	0	0%	0	0	0	119	90 UJ	86 U	82 U	92 U	90 U	470 U		94 U	100 U	96 U	100 U
Hexachlorocyclopentadiene	UG/KG	0	0%	0	0	0	119	90 UJ	86 UJ	82 UJ	92 UJ	90 UJ	470 U		94 UJ	100 UJ	96 UJ	100 UJ
Hexachloroethane	UG/KG	0	0%	0	0	0	119	90 UJ	86 U	82 U	92 U	90 U	470 U		94 U	100 U	96 U	100 U
Indeno(1,2,3-cd)pyrene	UG/KG	37	13%	500	0	15	119	90 UJ	86 U	82 U	92 U	90 U	470 U		94 U	100 U	96 U	100 U
Isophorone	UG/KG	0	0%	0	0	0	119	90 UJ	86 U	82 U	92 U	90 U	470 U		94 U	100 U	96 U	100 U
N-Nitrosodiphenylamine	UG/KG	75	2%	0	0	2	119	90 UJ	86 U	82 U	92 U	90 U	470 U		94 U	100 U	96 U	100 U
N-Nitrosodipropylamine	UG/KG	0	0%	0	0	0	119	90 UJ	86 U	82 U	92 U	90 U	470 U		94 U	100 UJ	96 UJ	100 UJ
Naphthalene	UG/KG	180	1%	12000	0	1	119	90 UJ	86 U	82 U	92 U	90 U	470 U		94 U	100 U	96 U	100 U
Nitrobenzene	UG/KG	0	0%	0	0	0	119	90 UJ	86 U	82 U	92 U	90 U	470 U		94 U	100 U	96 U	100 U
Pentachlorophenol	UG/KG	0	0%	800	0	0	119	220 UJ	210 U	200 U	220 U	220 U	1100 U		230 U	250 UJ	230 UJ	240 UJ
Phenanthrene	UG/KG	230	37%	100000	0	44	119	90 UJ	86 U	82 U	4.8 J	4.7 J	470 U		4.7 J	5.5 J	7.2 J	7.8 J
Phenol	UG/KG	51	13%	330	0	16	119	4.3 J	86 U	82 U	92 U	90 U	470 U		94 U	100 U	96 U	100 U
Pyrene	UG/KG	230	52%	100000	3	62	119	90 UJ	86 U	82 U	5.4 J	6.5 J	470 U		6.6 J	7.6 J	10 J	10 J
Explosives																		
1,3,5-Trinitrobenzene	UG/KG	0	0%	0	0	0	119	120 UJ	120 U	120 U	120 U	120 U	130 U		120 U	120 U	120 U	120 U
1,3-Dinitrobenzene	UG/KG	0	0%	0	0	0	119	120 UJ	120 U	120 U	120 U	120 U	130 U		120 U	120 U	120 U	120 U
2,4,6-Trinitrotoluene	UG/KG	0	0%	0	0	0	119	120 UJ	120 U	120 U	120 U	120 U	130 U		120 U	120 U	120 U	120 U
2,4-Dinitrotoluene	UG/KG	0	0%	0	0	0	119	120 UJ	120 U	120 U	120 U	120 U	130 U		120 U	120 U	120 U	120 U
2,6-Dinitrotoluene	UG/KG	0	0%	0	0	0	119	120 UJ	120 U	120 U	120 U	120 U	130 U		120 U	120 U	120 U	120 U
2-Nitrotoluene	UG/KG	0	0%	0	0	0	101	120 UJ	120 U	120 U	120 U	120 U			120 U	120 U	120 U	120 U
2-amino-4,6-Dinitrotoluene	UG/KG	0	0%	0	0	0	119	120 UJ	120 U	120 U	120 U	120 U	130 U		120 U	120 U	120 U	120 U
3-Nitrotoluene	UG/KG	0	0%	0	0	0	101	120 UJ	120 U	120 U	120 U	120 U			120 U	120 U	120 U	120 U
4-Nitrotoluene	UG/KG	0	0%	0	0	0	101	120 UJ	120 U	120 U	120 U	120 U			120 U	120 U	120 U	120 U
4-amino-2,6-Dinitrotoluene	UG/KG	0	0%	0	0	0	119	120 UJ	120 U	120 U	120 U	120 U	130 U		120 U	120 U	120 U	120 U
HMX	UG/KG	0	0%	0	0	0	119	120 UJ	120 U	120 U	120 U	120 U	130 U		120 U	120 U	120 U	120 U
Nitrobenzene	UG/KG	0	0%	0	0	0	101	120 UJ	120 U	120 U	120 U	120 U			120 U	120 U	120 U	120 U
RDX	UG/KG	0	0%	0	0	0	119	120 UJ	120 U	120 U	120 U	120 U	130 U		120 U	120 U	120 U	120 U
Tetryl	UG/KG	0	0%	0	0	0	119	120 UJ	120 U	120 U	120 U	120 U	130 U		120 U	120 U	120 U	120 U
Pesticides and PCBs																		
4,4'-DDD	UG/KG	54	7%	3.3	5	8	119	4.5 U	4.3 U	4.1 U	4.6 U	4.5 U	4.7 U		4.7 U	5.1 U	4.8 U	5 U
4,4'-DDE	UG/KG	32	8%	3.3	7	9	119	4.5 U	4.3 U	4.1 U	4.6 U	4.5 U	4.7 U		4.7 U	5.1 U	4.8 U	5 U
4,4'-DDT	UG/KG	23	5%	3.3	5	6	119	4.5 U	4.3 U	4.1 U	4.6 U	4.5 U	4.7 U		4.7 U	5.1 U	4.8 U	5 U
Aldrin	UG/KG	0	0%	5	0	0	119	2.3 U	2.2 U	2.1 U	2.4 U	2.3 U	2.4 U		2.4 U	2.6 U	2.5 U	2.6 U
Alpha-BHC	UG/KG	1.4	2%	20	0	2	119	2.3 U	2.2 U	2.1 U	2.4 U	2.3 U	2.4 U		2.4 U	2.6 U	2.5 U	2.6 U
Alpha-Chlordane	UG/KG	16	6%	94	0	7	119	2.3 U	2.2 U	2.1 U	2.4 U	2.3 U	2.4 U		2.4 U	2.6 U	2.5 U	2.6 U
Aroclor-1016	UG/KG	0	0%	100	0	0	119	45 U	43 U	41 U	46 U	45 U	47 U		47 U	51 U	48 U	50 U
Aroclor-1221	UG/KG	0	0%	100	0	0	119	91 U	88 U	83 U	93 U	92 U	95 U		96 U	100 U	97 U	100 U
Aroclor-1232	UG/KG	0	0%	100	0	0	119	45 U	43 U	41 U	46 U	45 U	47 U		47 U	51 U	48 U	50 U
Aroclor-1242	UG/KG	0	0%	100	0	0	119	45 U	43 U	41 U	46 U	45 U	47 U		47 U	51 U	48 U	50 U
Aroclor-1248	UG/KG	0	0%	100	0	0	119	45 U	43 U	41 U	46 U	45 U	47 U		47 U	51 U	48 U	50 U
Aroclor-1254	UG/KG	0	0%	100	0	0	119	45 U	43 U	41 U	46 U	45 U	47 U		47 U	51 U	48 U	50 U
Aroclor-1260	UG/KG	27	2%	100	0	2	119	45 U	43 U	41 U	46 U	45 U	27 J		47 U	51 U	48 U	50 U
Beta-BHC	UG/KG	4.5	1%	36	0	1	119	2.3 U	2.2 U	2.1 U	2.4 U	2.3 U	2.4 U		2.4 U	2.6 U	2.5 U	2.6 U
Delta-BHC	UG/KG	0	0%	40	0	0	119	2.3 U	2.2 U	2.1 U	2.4 U	2.3 U	2.4 U		2.4 U	2.6 U	2.5 U	2.6 U
Dieldrin	UG/KG	27	6%	5	5	7	119	4.5 U	4.3 U	4.1 U	4.6 U	4.5 U	4.7 U		4.7 U	5.1 U	4.8 U	5 U

TABLE 1
SEAD-57 SOIL SAMPLE RESULTS
SENECA ARMY DEPOT ACTIVITY

Parameter	Units	Maximum Concentration	Frequency of Detection	Criteria Value [1]	Number of Exceedances	Number of Times Detected	Number of Samples Analyzed [2]	SEAD-57 SS57-6 SOIL SS57-6-1 0 0.2 10/26/93 SA P1S1 RI Value (Q)	SEAD-57 SS57-6 SOIL SS57-6-2 0 0.2 12/08/93 SA P1S1 RI Value (Q)	SEAD-57 SS57-7 SOIL SS57-7-1 0 0.2 10/26/93 SA P1S1 RI Value (Q)	SEAD-57 SS57-7 SOIL SS57-7-2 0 0.2 12/08/93 SA P1S1 RI Value (Q)	SEAD-57 SS57-8 SOIL SS57-8-1 0 0.2 10/26/93 SA P1S1 RI Value (Q)	SEAD-57 SS57-8 SOIL SS57-8-2 0 0.2 12/08/93 SA P1S1 RI Value (Q)	SEAD-57 SS57-9 SOIL SS57-9-1 0 0.2 10/26/93 SA P1S1 RI Value (Q)	SEAD-57 SS57-9 SOIL SS57-9-2 0 0.2 12/08/93 SA P1S1 RI Value (Q)	SEAD-57 TP57-1 SOIL TP57-1 3 3 11/08/93 SA P1S1 RI Value (Q)	SEAD-57 TP57-10 SOIL TP57-10 3 3 34305 SA P1S1 RI Value (Q)	SEAD-57 TP57-11 SOIL TP57-11 3 3 34281 SA P1S1 RI Value (Q)
Volatile Organic Compounds																		
1,1,1-Trichloroethane	UG/KG	9	0%	680	0	0	127	13 U	14 U	11 U	11 U	11 U	12 U	11 U	11 U	13 U	12 U	11 U
1,1,2,2-Tetrachloroethane	UG/KG	0	0%	0	0	0	127	13 U	14 U	11 U	11 U	11 U	12 U	11 U	11 U	13 U	12 U	11 U
1,1,2-Trichloroethane	UG/KG	0	0%	0	0	0	127	13 U	14 U	11 U	11 U	11 U	12 U	11 U	11 U	13 U	12 U	11 U
1,1-Dichloroethane	UG/KG	0	0%	270	0	0	127	13 U	14 U	11 U	11 U	11 U	12 U	11 U	11 U	13 U	12 U	11 U
1,1-Dichloroethene	UG/KG	0	0%	330	0	0	127	13 U	14 U	11 U	11 U	11 U	12 U	11 U	11 U	13 U	12 U	11 U
1,2-Dichloroethane	UG/KG	0	0%	20	0	0	127	13 U	14 U	11 U	11 U	11 U	12 U	11 U	11 U	13 U	12 U	11 U
1,2-Dichloroethene (total)	UG/KG	0	0%	190	0	0	127	13 U	14 U	11 U	11 U	11 U	12 U	11 U	11 U	13 U	12 U	11 U
1,2-Dichloropropane	UG/KG	0	0%	0	0	0	127	13 U	14 U	11 U	11 U	11 U	12 U	11 U	11 U	13 U	12 U	11 U
Acetone	UG/KG	700	74%	50	87	94	127	13 U	14 U	11 U	11 U	11 U	12 U	11 U	11 U	13 U	12 U	11 U
Benzene	UG/KG	1	2%	60	0	2	127	13 U	14 U	11 U	11 U	11 U	12 U	11 U	11 U	13 U	4 J	11 U
Bromodichloromethane	UG/KG	0	0%	0	0	0	127	13 U	14 U	11 U	11 U	11 U	12 U	11 U	11 U	13 U	12 U	11 U
Bromoform	UG/KG	0	0%	0	0	0	127	13 U	14 U	11 U	11 U	11 U	12 U	11 U	11 U	13 U	12 U	11 U
Carbon disulfide	UG/KG	22	11%	0	0	14	127	13 U	14 U	11 U	11 U	11 U	12 U	11 U	11 U	13 U	12 U	11 U
Carbon tetrachloride	UG/KG	0	0%	760	0	0	127	13 U	14 U	11 U	11 U	11 U	12 U	11 U	11 U	13 U	12 U	11 U
Chlorobenzene	UG/KG	0	0%	1100	0	0	127	13 U	14 U	11 U	11 U	11 U	12 U	11 U	11 U	13 U	12 U	11 U
Chlorodibromomethane	UG/KG	0	0%	0	0	0	127	13 U	14 U	11 U	11 U	11 U	12 U	11 U	11 U	13 U	12 U	11 U
Chloroethane	UG/KG	0	0%	0	0	0	127	13 U	14 U	11 U	11 U	11 U	12 U	11 U	11 U	13 U	12 U	11 U
Chloroform	UG/KG	7	1%	370	0	1	127	13 U	14 U	11 U	11 U	11 U	12 U	11 U	11 U	13 U	12 U	11 U
Cis-1,3-Dichloropropene	UG/KG	0	0%	0	0	0	127	13 U	14 U	11 U	11 U	11 U	12 U	11 U	11 U	13 U	12 U	11 U
Ethyl benzene	UG/KG	0	0%	1000	0	0	127	13 U	14 U	11 U	11 U	11 U	12 U	11 U	11 U	13 U	12 U	11 U
Methyl bromide	UG/KG	0	0%	0	0	0	127	13 U	14 U	11 U	11 U	11 U	12 U	11 U	11 U	13 U	12 U	11 U
Methyl butyl ketone	UG/KG	0	0%	0	0	0	127	13 U	14 U	11 U	11 U	11 U	12 U	11 U	11 U	13 U	12 U	11 U
Methyl chloride	UG/KG	0	0%	0	0	0	127	13 U	14 U	11 U	11 U	11 U	12 U	11 U	11 U	13 U	12 U	11 U
Methyl ethyl ketone	UG/KG	64	62%	120	0	79	127	13 U	14 U	11 U	11 U	11 U	12 U	11 U	11 U	13 U	12 U	11 U
Methyl isobutyl ketone	UG/KG	0	0%	0	0	0	127	13 U	14 U	11 U	11 U	11 U	12 U	11 U	11 U	13 U	12 U	11 U
Methylene chloride	UG/KG	1	2%	50	0	2	127	13 U	14 U	11 U	11 U	11 U	12 U	11 U	11 U	13 U	12 U	11 U
Styrene	UG/KG	0	0%	0	0	0	127	13 U	14 U	11 U	11 U	11 U	12 U	12 U	11 U	13 U	12 U	11 U
Tetrachloroethene	UG/KG	6	6%	1300	0	7	127	1 J	14 U	11 U	11 U	6 J	12 U	1 J	11 U	13 U	12 U	11 U
Toluene	UG/KG	33	65%	700	0	82	127	13 U	14 U	11 U	11 U	11 U	12 U	11 U	11 U	13 U	12 U	11 U
Total Xylenes	UG/KG	2	2%	260	0	3	127	13 U	14 U	11 U	11 U	11 U	12 U	11 U	11 U	13 U	12 U	11 U
Trans-1,3-Dichloropropene	UG/KG	0	0%	0	0	0	127	13 U	14 U	11 U	11 U	11 U	12 U	11 U	11 U	13 U	12 U	11 U
Trichloroethene	UG/KG	0	0%	470	0	0	127	13 U	14 U	11 U	11 U	11 U	12 U	11 U	11 U	13 U	12 U	11 U
Vinyl chloride	UG/KG	0	0%	20	0	0	127	13 U	14 U	11 U	11 U	11 U	12 U	11 U	11 U	13 U	12 U	11 U
Semivolatile Organic Compounds																		
1,2,4-Trichlorobenzene	UG/KG	0	0%	0	0	0	119	420 U		360 U		360 UR		350 U		360 U	390 U	410 U
1,2-Dichlorobenzene	UG/KG	0	0%	1100	0	0	119	420 U		360 U		360 UR		350 U		360 U	390 U	410 U
1,3-Dichlorobenzene	UG/KG	0	0%	2400	0	0	119	420 U		360 U		360 UR		350 U		360 U	390 U	410 U
1,4-Dichlorobenzene	UG/KG	0	0%	1800	0	0	119	420 U		360 U		360 UR		350 U		360 U	390 U	410 U
2,2'-oxybis(1-Chloropropane)	UG/KG	0	0%	0	0	0	18	420 U		360 U		360 UR		350 U		360 U	390 U	410 U
2,4,5-Trichlorophenol	UG/KG	0	0%	0	0	0	119	1000 U		880 U		860 UR		860 U		880 U	940 U	990 U
2,4,6-Trichlorophenol	UG/KG	0	0%	0	0	0	119	420 U		360 U		360 UR		350 U		360 U	390 U	410 U
2,4-Dichlorophenol	UG/KG	0	0%	0	0	0	119	420 U		360 U		360 UR		350 U		360 U	390 U	410 U
2,4-Dimethylphenol	UG/KG	0	0%	0	0	0	119	420 U		360 U		360 UR		350 U		360 U	390 U	410 U
2,4-Dinitrophenol	UG/KG	0	0%	0	0	0	119	1000 U		880 U		860 UR		860 U		880 U	940 U	990 U
2,4-Dinitrotoluene	UG/KG	0	0%	0	0	0	119	420 U		360 U		360 UR		350 U		360 U	390 U	410 U
2,6-Dinitrotoluene	UG/KG	0	0%	0	0	0	119	420 U		360 U		360 UR		350 U		360 U	390 U	410 U
2-Chloronaphthalene	UG/KG	0	0%	0	0	0	119	420 U		360 U		360 UR		350 U		360 U	390 U	410 U
2-Chlorophenol	UG/KG	0	0%	0	0	0	119	420 U		360 U		360 UR		350 U		360 U	390 U	410 U
2-Methylnaphthalene	UG/KG	750	3%	0	0	3	119	420 U		360 U		360 UR		350 U		360 U	390 U	410 U
2-Methylphenol	UG/KG	0	0%	330	0	0	119	420 U		360 U		360 UR		350 U		360 U	390 U	410 U
2-Nitroaniline	UG/KG	0	0%	0	0	0	119	1000 U		880 U		860 UR		860 U		880 U	940 U	990 U
2-Nitrophenol	UG/KG	0	0%	0	0	0	119	420 U		360 U		360 UR		350 U		360 U	390 U	410 U
3,3'-Dichlorobenzidine	UG/KG	0	0%	0	0	0	119	420 U		360 U		360 UR		350 U		360 U	390 U	410 U
3-Nitroaniline	UG/KG	0	0%	0	0	0	119	1000 U		880 U		860 UR		860 U		880 U	940 U	990 U
4,6-Dinitro-2-methylphenol	UG/KG	0	0%	0	0	0	119	1000 U		880 U		860 UR		860 U		880 U	940 U	990 U
4-Bromophenyl phenyl ether	UG/KG	0	0%	0	0	0	119	420 U		360 U		360 UR		350 U		360 U	390 U	410 U
4-Chloro-3-methylphenol	UG/KG	0	0%	0	0	0	119	420 U		360 U		360 UR		350 U		360 U	390 U	410 U
4-Chloroaniline	UG/KG	0	0%	0	0	0	119	420 U		360 U		360 UR		350 U		360 U	390 U	410 U
4-Chlorophenyl phenyl ether	UG/KG	0	0%	0	0	0	119	420 U		360 U		360 UR		350 U		360 U	390 U	410 U
4-Methylphenol	UG/KG	13	3%	330	0	3	119	420 U		360 U		360 UR		350 U		360 U	390 U	410 U
4-Nitroaniline	UG/KG	0	0%	0	0	0	119	1000 U		880 U		860 UR		860 U		880 U	940 U	990 U
4-Nitrophenol	UG/KG	0	0%	0	0	0	119	1000 U		880 U		860 UR		860 U		880 U	940 U	990 U
Acenaphthene	UG/KG	0	0%	20000	0	0	119	420 U		360 U		360 UR		350 U		360 U	390 U	410 U
Acenaphthylene	UG/KG	0	0%	100000	0	0	119	420 U		360 U		360 UR		350 U		360 U	390 U	410 U

TABLE 1
SEAD-57 SOIL SAMPLE RESULTS
SENECA ARMY DEPOT ACTIVITY

Parameter	Units	Maximum Concentration	Frequency of Detection	Criteria Value [1]	Number of Exceedances	Number of Times Detected	Number of Samples Analyzed [2]	SEAD-57 SS57-6 SOIL SS57-6-1 0 0.2 10/26/93 SA PISI RI Value (Q)	SEAD-57 SS57-6 SOIL SS57-6-2 0 0.2 12/08/93 SA PISI RI Value (Q)	SEAD-57 SS57-7 SOIL SS57-7-1 0 0.2 10/26/93 SA PISI RI Value (Q)	SEAD-57 SS57-7 SOIL SS57-7-2 0 0.2 12/08/93 SA PISI RI Value (Q)	SEAD-57 SS57-8 SOIL SS57-8-1 0 0.2 10/26/93 SA PISI RI Value (Q)	SEAD-57 SS57-8 SOIL SS57-8-2 0 0.2 12/08/93 SA PISI RI Value (Q)	SEAD-57 SS57-9 SOIL SS57-9-1 0 0.2 10/26/93 SA PISI RI Value (Q)	SEAD-57 SS57-9 SOIL SS57-9-2 0 0.2 12/08/93 SA PISI RI Value (Q)	SEAD-57 TP57-1 SOIL TP57-1 3 3 11/08/93 34305 SA PISI RI Value (Q)	SEAD-57 TP57-10 SOIL TP57-10 3 3 34305 SA PISI RI Value (Q)	SEAD-57 TP57-11 SOIL TP57-11 3 3 34281 SA PISI RI Value (Q)
Endosulfan I	UG/KG	5.2	1%	2400	0	1	119	2.2 U		1.9 U		1.8 U		1.8 UJ		1.9 U	2 U	2.1 U
Endosulfan II	UG/KG	3.1	1%	2400	0	1	119	4.3 U		3.6 U		3.6 U		3.5 UJ		3.6 U	3.9 U	4.1 U
Endosulfan sulfate	UG/KG	0	0%	2400	0	0	119	4.3 U		3.6 U		3.6 U		3.5 UJ		3.6 U	3.9 U	4.1 U
Endrin	UG/KG	0	0%	14	0	0	119	4.3 U		3.6 U		3.6 U		3.5 UJ		3.6 U	3.9 U	4.1 U
Endrin aldehyde	UG/KG	3.8	1%	0	0	1	119	4.3 U		3.6 U		3.6 U		3.5 UJ		3.6 U	3.9 U	4.1 U
Endrin ketone	UG/KG	4	1%	0	0	1	119	4.3 U		3.6 U		3.6 U		3.5 UJ		3.6 U	3.9 U	4.1 U
Gamma-BHC Lindane	UG/KG	0	0%	100	0	0	119	2.2 U		1.9 U		1.8 U		1.8 UJ		1.9 U	2 U	2.1 U
Gamma-Chlordane	UG/KG	0	0%	0	0	0	119	2.2 U		1.9 U		1.8 U		1.8 UJ		1.9 U	2 U	2.1 U
Heptachlor	UG/KG	1.6	1%	42	0	1	119	2.2 U		1.9 U		1.8 U		1.8 UJ		1.9 U	2 U	2.1 U
Heptachlor epoxide	UG/KG	2	1%	0	0	1	119	2.2 U		2 J		1.8 U		1.8 UJ		1.9 U	2 U	2.1 U
Methoxychlor	UG/KG	0	0%	0	0	0	119	22 U		19 U		18 U		18 UJ		19 U	20 U	21 U
Toxaphene	UG/KG	0	0%	0	0	0	119	220 U		190 U		180 U		180 UJ		190 U	200 U	210 U
Herbicides								6.5 U		5.5 U		5.4 U		5.4 U		5.5 U		
2,4,5-T	UG/KG	0	0%	0	0	0	18	6.5 U		5.5 U		5.4 U		5.4 U		5.5 U	6 UJ	6.2 U
2,4,5-TP Silvex	UG/KG	0	0%	3800	0	0	18	65 U		55 U		54 U		54 U		55 U	6 UJ	6.2 U
2,4-D	UG/KG	0	0%	0	0	0	18	65 U		55 U		54 U		54 U		55 U	60 UJ	62 U
2,4-DB	UG/KG	0	0%	0	0	0	18	160 U		140 U		130 U		130 U		140 U	60 UJ	62 U
Dalapon	UG/KG	0	0%	0	0	0	18	6.5 U		5.5 U		5.4 U		5.4 U		5.5 U	150 UJ	150 U
Dicamba	UG/KG	0	0%	0	0	0	18	65 U		55 U		54 U		54 U		55 U	6 UJ	6.2 U
Dichloroprop	UG/KG	0	0%	0	0	0	18	33 U		28 U		27 U		27 UJ		28 U	60 UJ	62 U
Dinoseb	UG/KG	0	0%	0	0	0	18	6500 U		5500 U		5400 U		5400 UJ		5500 U	30 UJ	31 U
MCPA	UG/KG	0	0%	0	0	0	18	6500 U		5500 U		5400 U		5400 U		5500 U	6000 UJ	6200 U
MCPP	UG/KG	0	0%	0	0	0	18										6000 UJ	6200 U
Metals and Cyanide																		
Aluminum	MG/KG	22900	100%	0	0	119	119	13500		12600		3940		10300		10700	12600	14600
Antimony	MG/KG	6.5	49%	0	0	58	119	12.1 UJ		10.1 UJ		10.1 UJ		10.7 UJ		6.4 UJ	7.6 U	11.3 UJ
Arsenic	MG/KG	17.8	92%	13	1	110	119	122 UR		4.2 UR		4 UR		5.6 R		4.9	6.8	5.9
Barium	MG/KG	237	100%	350	0	119	119	83.7		64.2		25.5 J		56.5		58.7	97.5	120
Beryllium	MG/KG	1.8	100%	7.2	0	119	119	0.64 J		0.61 J		0.33 J		0.59 J		0.56 J	0.55 J	0.81 J
Cadmium	MG/KG	28.6	22%	2.5	6	26	119	0.76 U		0.63 U		0.63 U		0.67 U		0.4 U	0.35 UR	0.71 U
Calcium	MG/KG	213000	100%	0	0	119	119	2790		24300		213000		104000		16600	33000	22300
Chromium	MG/KG	32.1	100%	30	2	119	119	18.9		24.3		7.4		20.7		20.5	17.1	20.1
Cobalt	MG/KG	29.7	100%	0	6	119	119	9.3 J		13.2		7.8 J		10.6		12.1	8.7	8.8 J
Copper	MG/KG	2930	92%	50	2	109	119	17.4		33.4		12		47		34.3	22.4 J	21.7
Cyanide	MG/KG	0	0%	27	0	0	119	0.78 U		0.64 U		0.62 U		0.61 U		0.52 U	0.71 U	0.54 U
Iron	MG/KG	39800	100%	0	0	119	119	21700		28400		7540		23000		24700	20500	24900
Lead	MG/KG	1860	100%	63	2	119	119	30.2		18.4		9.5		42.4		28.2	10.9	11.3
Magnesium	MG/KG	27600	100%	0	0	119	119	3230		6660		11600		9650		5050	6400	5360
Manganese	MG/KG	2580	100%	1600	5	119	119	464		347		401		356		392	387 J	329
Mercury	MG/KG	0.15	75%	0.18	0	89	119	0.07 J		0.02 J		0.04 U		0.04 J		0.03 J	0.03 J	0.04 J
Nickel	MG/KG	54.1	100%	30	37	119	119	19.8		**46**		17.2		**38.7**		**45**	24.5	25.7
Potassium	MG/KG	3250	100%	0	0	119	119	1650		1550		1210		1570		898	1680	1430
Selenium	MG/KG	2.7	63%	3.9	0	75	119	0.31 J		0.18 UJ		0.2 UJ		0.37 J		0.48 J	0.61 J	0.46 J
Silver	MG/KG	1.7	38%	2	0	45	119	1.5 UJ		1.3 UJ		1.3 UJ		1.4 UJ		0.81 UJ	0.69 U	1.4 UJ
Sodium	MG/KG	270	34%	0	0	41	119	46.3 J		119 J		214 J		188 J		56.9 J	93.6 J	93 J
Thallium	MG/KG	6.7	82%	0	0	98	119	0.17 U		0.2 U		2.2 U		0.23 U		0.3 J	0.21 UJ	0.17 U
Vanadium	MG/KG	104	99%	0	0	118	119	26.2		19		11.2		18.8		26.9	22.9	27.8
Zinc	MG/KG	1250	93%	109	11	111	119	64 UR		53.4 R		42.1 UR		266 UR		81.1	54.1 J	57.9
Other Analyses																		
Cation exchange capacity	MEQ/100G	31.4	100%	0	0	32	32											
Nitrate/Nitrite Nitrogen	MG/KG	4.4	98%	0	0	99	101											
Percent Solids	% WW	94	100%	0	0	101	101											
Soil pH (std. units)	pH units	7.83	100%	0	0	33	33											
Total Organic Carbon	MG/KG	70500	100%	0	0	32	32											

Notes
(1) Criteria based on NYSDEC Brownfield Unrestricted Use Soil Cleanup Objectives,
http://www.dec.state.ny.us/website/regs/subpart375_6.html
(2) Sample-duplicate pairs were treated as discreet samples
(3) A bolded and outlined cell indicates a concentration that exceeded the criteria

U = compound was not detected
J = the reported value is an estimated concentration
UJ = the compound was not detected, the associated reporting limit is approximate
R = the analytical result was rejected during data validation

TABLE 1
SEAD-57 SOIL SAMPLE RESULTS
SENECA ARMY DEPOT ACTIVITY

Parameter	Units	Maximum Concentration	Frequency of Detection	Criteria Value [1]	Number of Exceedances	Number of Times Detected	Number of Samples Analyzed [2]	SEAD-57 TP57-2 SOIL TP57-2 3 3 12/02/93 SA P1S1 RI Value (Q)	SEAD-57 TP57-3 SOIL TP57-3 3 3 11/09/93 SA P1S1 RI Value (Q)	SEAD-57 TP57-4 SOIL TP57-4 3 3 11/09/93 SA P1S1 RI Value (Q)	SEAD-57 TP57-6 SOIL TP57-6 3 3 12/02/93 SA P1S1 RI Value (Q)	SEAD-57 TP57-7 SOIL TP57-7 3 3 12/02/93 SA P1S1 RI Value (Q)	SEAD-57 TP57-8 SOIL TP57-8 3 3 12/02/93 SA P1S1 RI Value (Q)	SEAD-57 TP57-9 SOIL TP57-9 3 3 12/02/93 SA P1S1 RI Value (Q)
Benzo(b)fluoranthene	UG/KG	67	24%	1000	0	29	119	2000 U	370 U	370 U	430 U	390 U	380 U	380 U
Benzo(ghi)perylene	UG/KG	54	13%	100000	0	15	119	2000 U	370 U	370 U	430 U	390 U	380 U	380 U
Benzo(k)fluoranthene	UG/KG	50	24%	800	0	29	119	2000 U	370 U	370 U	430 U	390 U	380 U	380 U
Bis(2-Chloroethoxy)methane	UG/KG	0	0%	0	0	0	119	2000 U	370 U	370 U	430 U	390 U	380 U	380 U
Bis(2-Chloroethyl)ether	UG/KG	0	0%	0	0	0	119	2000 U	370 U	370 U	430 U	390 U	380 U	380 U
Bis(2-Chloroisopropyl)ether	UG/KG	0	0%	0	0	0	101							
Bis(2-Ethylhexyl)phthalate	UG/KG	3400	15%	0	0	18	119	2000 U	370 U	370 U	430 U	390 U	380 U	380 U
Butylbenzylphthalate	UG/KG	0	0%	0	0	0	119	2000 U	370 U	370 U	430 U	390 U	380 U	380 U
Carbazole	UG/KG	0	0%	0	0	0	119	2000 U	370 U	370 U	430 U	390 U	380 U	380 U
Chrysene	UG/KG	110	33%	1000	0	39	119	2000 U	370 U	25 J	430 U	390 U	380 U	380 U
Di-n-butylphthalate	UG/KG	390	34%	0	0	40	119	390 J	370 U	370 U	430 U	390 U	380 U	380 U
Di-n-octylphthalate	UG/KG	2.6	1%	0	0	1	119	2000 U	370 U	370 U	430 U	390 U	380 U	380 U
Dibenz(a,h)anthracene	UG/KG	24	6%	330	0	7	119	2000 U	370 U	370 U	430 U	390 U	380 U	380 U
Dibenzofuran	UG/KG	0	0%	7000	0	0	119	2000 U	370 U	370 U	430 U	390 U	380 U	380 U
Diethyl phthalate	UG/KG	8.8	2%	0	0	2	119	2000 U	370 U	370 U	430 U	390 U	380 U	380 U
Dimethylphthalate	UG/KG	0	0%	0	0	0	119	2000 U	370 U	370 U	430 U	390 U	380 U	380 U
Fluoranthene	UG/KG	150	50%	100000	0	60	119	2000 U	370 U	34 J	430 U	390 U	380 U	380 U
Fluorene	UG/KG	120	2%	30000	0	2	119	120 J	370 U	370 U	430 U	390 U	380 U	380 U
Hexachlorobenzene	UG/KG	0	0%	330	0	0	119	2000 U	370 U	370 U	430 U	390 U	380 U	380 U
Hexachlorobutadiene	UG/KG	0	0%	0	0	0	119	2000 U	370 U	370 U	430 U	390 U	380 U	380 U
Hexachlorocyclopentadiene	UG/KG	0	0%	0	0	0	119	2000 U	370 U	370 U	430 U	390 U	380 U	380 U
Hexachloroethane	UG/KG	0	0%	0	0	0	119	2000 U	370 U	370 U	430 U	390 U	380 U	380 U
Indeno(1,2,3-cd)pyrene	UG/KG	37	13%	500	0	15	119	2000 U	370 U	370 U	430 U	390 U	380 U	380 U
Isophorone	UG/KG	0	0%	0	0	0	119	2000 U	370 U	370 U	430 U	390 U	380 U	380 U
N-Nitrosodiphenylamine	UG/KG	75	2%	0	0	2	119	2000 U	370 U	370 U	430 U	390 U	380 U	380 U
N-Nitrosodipropylamine	UG/KG	0	0%	0	0	0	119	2000 U	370 U	370 U	430 U	390 U	380 U	380 U
Naphthalene	UG/KG	180	1%	12000	0	1	119	180 J	370 U	370 U	430 U	390 U	380 U	380 U
Nitrobenzene	UG/KG	0	0%	0	0	0	119	2000 U	370 U	370 U	430 U	390 U	380 U	380 U
Pentachlorophenol	UG/KG	0	0%	800	0	0	119	4900 U	900 U	900 U	1000 U	950 U	930 U	920 U
Phenanthrene	UG/KG	230	37%	100000	0	44	119	230 J	370 U	20 J	430 U	390 U	380 U	380 U
Phenol	UG/KG	51	13%	330	0	16	119	2000 U	370 U	370 U	430 U	390 U	380 U	380 U
Pyrene	UG/KG	230	52%	100000	3	62	119	2000 U	370 U	33 J	430 U	390 U	380 U	380 U
Explosives														
1,3,5-Trinitrobenzene	UG/KG	0	0%	0	0	0	119	130 U	130 U	130 U	130 U	130 U	130 U	130 U
1,3-Dinitrobenzene	UG/KG	0	0%	0	0	0	119	130 U	130 U	130 U	130 U	130 U	130 U	130 U
2,4,6-Trinitrotoluene	UG/KG	0	0%	0	0	0	119	130 U	130 U	130 U	130 U	130 U	130 U	130 U
2,4-Dinitrotoluene	UG/KG	0	0%	0	0	0	119	130 U	130 U	130 U	130 U	130 U	130 U	130 U
2,6-Dinitrotoluene	UG/KG	0	0%	0	0	0	119	130 U	130 U	130 U	130 U	130 U	130 U	130 U
2-Nitrotoluene	UG/KG	0	0%	0	0	0	101							
2-amino-4,6-Dinitrotoluene	UG/KG	0	0%	0	0	0	119	130 U	130 U	130 U	130 U	130 U	130 U	130 U
3-Nitrotoluene	UG/KG	0	0%	0	0	0	101							
4-Nitrotoluene	UG/KG	0	0%	0	0	0	101							
4-amino-2,6-Dinitrotoluene	UG/KG	0	0%	0	0	0	119	130 U	130 U	130 U	130 U	130 U	130 U	130 U
HMX	UG/KG	0	0%	0	0	0	119	130 U	130 U	130 U	130 U	130 U	130 U	130 U
Nitrobenzene	UG/KG	0	0%	0	0	0	101							
RDX	UG/KG	0	0%	0	0	0	119	130 U	130 U	130 U	130 U	130 U	130 U	130 U
Tetryl	UG/KG	0	0%	0	0	0	119	140 U	130 U	130 U	130 U	130 U	130 U	180 U
Pesticides and PCBs														
4,4'-DDD	UG/KG	54	7%	3.3	5	8	119	4.1 U	5.5	8.9	4.3 U	4 U	3.8 U	3.8 U
4,4'-DDE	UG/KG	32	8%	3.3	7	9	119	4.1 U	12	20	4.3 U	4 U	3.8 U	3.8 U
4,4'-DDT	UG/KG	23	5%	3.3	5	6	119	4.1 U	12	23	4.3 U	4 U	3.8 U	3.8 U
Aldrin	UG/KG	0	0%	5	0	0	119	2.1 U	1.9 U	1.9 U	2.2 U	2 U	2 U	2 U
Alpha-BHC	UG/KG	1.4	2%	20	0	2	119	2.1 U	1.9 U	1.9 U	2.2 U	2 U	2 U	2 U
Alpha-Chlordane	UG/KG	16	6%	94	0	7	119	2.1 U	1.9 U	1.9 U	2.2 U	2 U	2 U	2 U
Aroclor-1016	UG/KG	0	0%	100	0	0	119	41 U	37 U	37 U	43 U	40 U	38 U	38 U
Aroclor-1221	UG/KG	0	0%	100	0	0	119	82 U	76 U	76 U	88 U	80 U	77 U	78 U
Aroclor-1232	UG/KG	0	0%	100	0	0	119	41 U	37 U	37 U	43 U	40 U	38 U	38 U
Aroclor-1242	UG/KG	0	0%	100	0	0	119	41 U	37 U	37 U	43 U	40 U	38 U	38 U
Aroclor-1248	UG/KG	0	0%	100	0	0	119	41 U	37 U	37 U	43 U	40 U	38 U	38 U
Aroclor-1254	UG/KG	0	0%	100	0	0	119	41 U	37 U	37 U	43 U	40 U	38 U	38 U
Aroclor-1260	UG/KG	27	2%	100	0	2	119	41 U	37 U	37 U	43 U	40 U	38 U	38 U
Beta-BHC	UG/KG	4.5	1%	36	0	1	119	2.1 U	1.9 U	1.9 U	2.2 U	2 U	2 U	2 U
Delta-BHC	UG/KG	0	0%	40	0	0	119	2.1 U	1.9 U	1.9 U	2.2 U	2 U	2 U	2 U
Dieldrin	UG/KG	27	6%	5	5	7	119	4.1 U	3.7 U	3.7 U	4.3 U	4 U	3.8 U	3.8 U
Endosulfan I	UG/KG	5.2	1%	2400	0	1	119	2.1 U	1.9 U	1.9 U	2.2 U	2 U	2 U	2 U
Endosulfan II	UG/KG	3.1	1%	2400	0	1	119	4.1 U	3.7 U	3.7 U	4.3 U	4 U	3.8 U	3.8 U
Endosulfan sulfate	UG/KG	0	0%	2400	0	0	119	4.1 U	3.7 U	3.7 U	4.3 U	4 U	3.8 U	3.8 U
Endrin	UG/KG	0	0%	14	0	0	119	4.1 U	3.7 U	3.7 U	4.3 U	4 U	3.8 U	3.8 U

TABLE 2
SEAD-57 GROUNDWATER SAMPLE RESULTS
SENECA ARMY DEPOT ACTIVITY

								SEAD-57	SEAD-57	SEAD-57	SEAD-57	SEAD-57
								MW57-1	MW57-1	MW57-1	MW57-1	MW57-1
								GW	GW	GW	GW	GW
								MW57-1	122029	122227	572002	572100
								3.1	7	7	7	7
								5.2	7	7	7	7
								2/3/1994	4/23/1999	12/2/1999	1/23/2000	4/26/2000
								SA	SA	SA	SA	SA
		Maximum	Frequency of	Criteria	Number of	Number of Times	Number of Samples	ESI 0	RI PHASE 1 STEP 1 1	RI PHASE 1 STEP 1-PLUT RESAMP 2	RI PHASE 1 STEP 1 1	RI PHASE 1 STEP 1 2
Parameter	**Units**	**Value**	**Detection**	**Level**	**Exceedances**	**Detected**	**Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Volatile Organic Compounds												
1,1,1,2-Tetrachloroethane	UG/L	0	0%	5	0	0	16				0.5 U	0.5 U
1,1,1-Trichloroethane	UG/L	0	0%	5	0	0	19	10 U			0.5 U	0.5 U
1,1,2,2-Tetrachloroethane	UG/L	0	0%	5	0	0	11	10 U			0.5 U	0.5 UR
1,1,2-Trichloroethane	UG/L	0	0%	1	0	0	19	10 U			0.5 U	0.5 U
1,1-Dichloroethane	UG/L	0	0%	5	0	0	19	10 U			0.5 U	0.5 U
1,1-Dichloroethene	UG/L	0	0%	5	0	0	19	10 U			0.5 U	0.5 U
1,1-Dichloropropene	UG/L	0	0%	5	0	0	16				0.5 U	0.5 U
1,2,3-Trichlorobenzene	UG/L	0	0%	5	0	0	16				0.5 U	0.5 U
1,2,3-Trichloropropane	UG/L	0	0%	0.04	0	0	16				0.5 U	0.5 U
1,2,4-Trichlorobenzene	UG/L	0	0%	5	0	0	16				0.5 U	0.5 U
1,2,4-Trimethylbenzene	UG/L	0	0%	5	0	0	16				0.5 U	0.5 U
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0.04	0	0	16				0.5 U	0.5 U
1,2-Dibromoethane	UG/L	0	0%	0.0006	0	0	16				0.5 U	0.5 U
1,2-Dichlorobenzene	UG/L	0	0%	3	0	0	16				0.5 U	0.5 U
1,2-Dichloroethane	UG/L	0	0%	0.6	0	0	19	10 U			0.5 U	0.5 U
1,2-Dichloroethene (total)	UG/L	0	0%	5	0	0	3	10 U				
1,2-Dichloropropane	UG/L	0	0%	1	0	0	19	10 U			0.5 U	0.5 U
1,3,5-Trimethylbenzene	UG/L	0	0%	5	0	0	16				0.5 U	0.5 U
1,3-Dichlorobenzene	UG/L	0	0%	3	0	0	16				0.5 U	0.5 U
1,3-Dichloropropane	UG/L	0	0%	5	0	0	16				0.5 U	0.5 U
1,4-Dichlorobenzene	UG/L	0	0%	3	0	0	16				0.5 U	0.5 U
2,2-Dichloropropane	UG/L	0	0%		0	0	16				0.5 U	0.5 U
2-Chlorotoluene	UG/L	0	0%	5	0	0	16				0.5 U	0.5 U
2-Nitropropane	UG/L	0	0%		0	0	16				25 U	25 UJ
Acetone	UG/L	0	0%		0	0	19	10 U			5 U	5 U
Acrylonitrile	UG/L	0	0%	5	0	0	16				0.5 U	0.5 U
Allyl chloride	UG/L	0	0%	5	0	0	16				0.5 U	0.5 U
Benzene	UG/L	0	0%	1	0	0	19	10 U			0.5 U	0.5 U
Bromobenzene	UG/L	0	0%	5	0	0	16				0.5 U	0.5 U
Bromochloromethane	UG/L	0	0%	5	0	0	16				0.5 U	0.5 U
Bromodichloromethane	UG/L	0	0%	80	0	0	19	10 U			0.5 U	0.5 U
Bromoform	UG/L	0	0%	80	0	0	19	10 U			0.5 U	0.5 U
Butyl chloride	UG/L	0	0%	5	0	0	16				0.5 U	0.5 U
Carbon disulfide	UG/L	0	0%		0	0	19	10 U			0.5 U	0.5 U
Carbon tetrachloride	UG/L	0	0%	5	0	0	19	10 U			0.5 U	0.5 U
Chloroacetonitrile	UG/L	0	0%		0	0	16				25 U	25 U
Chlorobenzene	UG/L	0	0%	5	0	0	19	10 U			0.5 U	0.5 U
Chlorodibromomethane	UG/L	0	0%	80	0	0	19	10 U			0.5 U	0.5 U
Chloroethane	UG/L	0	0%	5	0	0	19	10 U			0.5 U	0.5 U
Chloroform	UG/L	0	0%	7	0	0	19	10 U			0.5 U	0.5 U
Cis-1,2-Dichloroethene	UG/L	0	0%	5	0	0	16				0.5 U	0.5 U
Cis-1,3-Dichloropropene	UG/L	0	0%	0.4	0	0	19	10 U			0.5 U	0.5 U
Dichlorodifluoromethane	UG/L	0	0%	5	0	0	16				0.5 U	0.5 U
Dichloromethyl methyl ketone	UG/L	0	0%		0	0	11				25 U	25 UJ
Ethyl benzene	UG/L	0	0%	5	0	0	19	10 U			0.5 U	0.5 U
Ethyl ether	UG/L	0	0%		0	0	16				0.5 U	0.5 U
Ethyl methacrylate	UG/L	0	0%		0	0	16				0.5 U	0.5 U
Hexachlorobutadiene	UG/L	0	0%	0.5	0	0	16				0.5 U	0.5 U
Hexachloroethane	UG/L	0	0%	5	0	0	16				0.5 U	0.5 U
Isopropylbenzene	UG/L	0	0%	5	0	0	16				0.5 U	0.5 U
Meta/Para Xylene	UG/L	0	0%		0	0	16				0.5 U	0.5 U
Methacrylonitrile	UG/L	0	0%	5	0	0	16				0.5 U	0.5 U
Methyl 2-propenoate	UG/L	0	0%		0	0	16				0.5 U	0.5 U
Methyl Tertbutyl Ether	UG/L	0	0%		0	0	16				0.5 U	0.5 U
Methyl bromide	UG/L	0	0%	5	0	0	19	10 U			0.5 U	0.5 U

TABLE 2
SEAD-57 GROUNDWATER SAMPLE RESULTS
SENECA ARMY DEPOT ACTIVITY

								SEAD-57	SEAD-57	SEAD-57	SEAD-57	SEAD-57
								MW57-1	MW57-1	MW57-1	MW57-1	MW57-1
								GW	GW	GW	GW	GW
								MW57-1	122029	122227	572002	572100
								3.1	7	7	7	7
								5.2	7	7	7	7
								2/3/1994	4/23/1999	12/2/1999	1/23/2000	4/26/2000
								SA	SA	SA	SA	SA
		Maximum	Frequency of	Criteria	Number of	Number of Times	Number of Samples	ESI 0	RI PHASE 1 STEP 1 1	RI PHASE 1 STEP 1-PLUT RESAMP 2	RI PHASE 1 STEP 1 1	RI PHASE 1 STEP 1 2
Parameter	**Units**	**Value**	**Detection**	**Level**	**Exceedances**	**Detected**	**Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
4-Methylphenol	UG/L	0	0%		0	0	18	10 U			1 U	1.1 U
4-Nitroaniline	UG/L	0	0%	5	0	0	19	25 U			2.5 UJ	2.8 UJ
4-Nitrophenol	UG/L	0	0%	1	0	0	17	25 U			2.5 U	2.8 U
Acenaphthene	UG/L	0	0%		0	0	19	10 U			1 U	1.1 U
Acenaphthylene	UG/L	0	0%		0	0	19	10 U			1 U	1.1 U
Anthracene	UG/L	0	0%		0	0	19	10 U			1 U	1.1 U
Benzo(a)anthracene	UG/L	0	0%		0	0	19	10 U			1 U	1.1 U
Benzo(a)pyrene	UG/L	0	0%	0	0	0	19	10 U			1 U	1.1 U
Benzo(b)fluoranthene	UG/L	0	0%		0	0	19	10 U			1 U	1.1 U
Benzo(ghi)perylene	UG/L	0	0%		0	0	19	10 U			1 U	1.1 U
Benzo(k)fluoranthene	UG/L	0	0%		0	0	19	10 U			1 U	1.1 U
Bis(2-Chloroethoxy)methane	UG/L	0	0%	5	0	0	19	10 U			1 U	1.1 U
Bis(2-Chloroethyl)ether	UG/L	0	0%	1	0	0	19	10 U			1 U	1.1 U
Bis(2-Chloroisopropyl)ether	UG/L	0	0%	5	0	0	16				1 U	1.1 U
Bis(2-Ethylhexyl)phthalate	UG/L	20	5%	5	1	1	19	10 U			1 U	1.1 U
Butylbenzylphthalate	UG/L	0.077	5%		0	1	19	10 U			1 U	1.1 U
Carbazole	UG/L	0	0%		0	0	19	10 U			1 U	1.1 UJ
Chrysene	UG/L	0	0%		0	0	19	10 U			1 U	1.1 U
Di-n-butylphthalate	UG/L	0	0%	50	0	0	19	10 U			1 U	1.1 U
Di-n-octylphthalate	UG/L	0	0%		0	0	19	10 U			1 U	1.1 U
Dibenz(a,h)anthracene	UG/L	0	0%		0	0	19	10 U			1 U	1.1 U
Dibenzofuran	UG/L	0	0%		0	0	19	10 U			1 U	1.1 U
Diethyl phthalate	UG/L	1.9	5%		0	1	19	10 U			1 U	1.1 U
Dimethylphthalate	UG/L	0	0%		0	0	19	10 U			1 U	1.1 U
Fluoranthene	UG/L	0	0%		0	0	19	10 U			1 U	1.1 U
Fluorene	UG/L	0	0%		0	0	19	10 U			1 U	1.1 U
Hexachlorobenzene	UG/L	0	0%	0.04	0	0	19	10 U			1 U	1.1 U
Hexachlorobutadiene	UG/L	0	0%	0.5	0	0	19	10 U			1 U	1.1 U
Hexachlorocyclopentadiene	UG/L	0	0%	5	0	0	19	10 U			1 U	1.1 U
Hexachloroethane	UG/L	0	0%	5	0	0	19	10 U			1 U	1.1 U
Indeno(1,2,3-cd)pyrene	UG/L	0	0%		0	0	19	10 U			1 U	1.1 U
Isophorone	UG/L	0	0%		0	0	19	10 U			1 U	1.1 U
N-Nitrosodiphenylamine	UG/L	0	0%		0	0	19	10 U			1 U	1.1 U
N-Nitrosodipropylamine	UG/L	0	0%		0	0	19	10 U			1 U	1.1 U
Naphthalene	UG/L	0	0%		0	0	19	10 U			1 U	1.1 U
Nitrobenzene	UG/L	0	0%	0.4	0	0	19	10 U			1 U	1.1 U
Pentachlorophenol	UG/L	0	0%	1	0	0	18	25 U			2.5 U	2.8 U
Phenanthrene	UG/L	0	0%		0	0	19	10 U			1 U	1.1 U
Phenol	UG/L	0	0%	1	0	0	18	10 U			1 U	1.1 U
Pyrene	UG/L	0	0%		0	0	19	10 U			1 U	1.1 U
Explosives												
1,3,5-Trinitrobenzene	UG/L	0	0%	5	0	0	20	0.13 U			0.25 U	0.25 U
1,3-Dinitrobenzene	UG/L	0	0%	5	0	0	20	0.13 U			0.25 U	0.25 U
2,4,6-Trinitrotoluene	UG/L	0	0%	5	0	0	20	0.13 U			0.25 U	0.25 U
2,4-Dinitrotoluene	UG/L	0	0%	5	0	0	20	0.13 U			0.25 U	0.25 U
2,6-Dinitrotoluene	UG/L	0	0%	5	0	0	20	0.13 U			0.25 U	0.25 U
2-Nitrotoluene	UG/L	0	0%	5	0	0	16				0.25 U	0.25 U
2-amino-4,6-Dinitrotoluene	UG/L	0	0%		0	0	20	0.13 U			0.25 U	0.25 U
3-Nitrotoluene	UG/L	0	0%	5	0	0	16				0.25 U	0.25 U
4-Nitrotoluene	UG/L	0	0%	5	0	0	16				0.25 U	0.25 U
4-amino-2,6-Dinitrotoluene	UG/L	0	0%		0	0	20	0.13 U			0.25 U	0.25 U
HMX	UG/L	0	0%		0	0	20	0.13 U			0.25 U	0.25 U
Nitrobenzene	UG/L	0	0%	0.4	0	0	16				0.25 U	0.25 U
RDX	UG/L	0	0%		0	0	20	0.13 U			0.25 U	0.25 U
Tetryl	UG/L	0	0%		0	0	20	0.13 U			0.25 U	0.25 U
Pesticides and PCBs												

TABLE 2
SEAD-57 GROUNDWATER SAMPLE RESULTS
SENECA ARMY DEPOT ACTIVITY

								SEAD-57	SEAD-57	SEAD-57	SEAD-57	SEAD-57	SEAD-57
								MW57-1	MW57-1	MW57-1	MW57-1	MW57-1	MW57-1
								GW	GW	GW	GW	GW	GW
								MW57-1	122029	122227	572002	572100	572100
								3.1	7	7	7	7	7
								5.2	7	7	7	7	7
								2/3/1994	4/23/1999	12/2/1999	1/23/2000	4/26/2000	4/26/2000
								SA	SA	SA	SA	SA	SA
			Frequency		Number	Number	Number	ESI	RI PHASE 1 STEP 1	RI PHASE 1 STEP 1-PLUT RESAMP	RI PHASE 1 STEP 1	RI PHASE 1 STEP 1	RI PHASE 1 STEP 1
		Maximum	of	Criteria	of	of Times	of Samples	0	1	2	1	2	2
Parameter	**Units**	**Value**	**Detection**	**Level**	**Exceedances**	**Detected**	**Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Manganese	UG/L	327	90%	300	1	19	21	245	5 J	5.1 J	11 J	23.2	23.2
Mercury	UG/L	0	0%	0.7	0	0	21	0.04 U	0.1 U	0.1 UJ	0.1 U	0.1 U	0.1 U
Nickel	UG/L	18.8	29%	100	0	6	21	8.2 J	2 J	1.7 U	1.9 J	2.9 U	2.9 U
Potassium	UG/L	4600	100%		0	21	21	3860 J	567 J	629 J	481 J	551 J	551 J
Selenium	UG/L	2.4	10%	10	0	2	21	0.69 U	1.8 U	2.4 U	2.5 U	4 U	4 U
Silver	UG/L	3.1	14%	50	0	3	21	4.2 U	0.9 U	1.9 UJ	1.3 U	1.9 U	1.9 U
Sodium	UG/L	26100	100%	20000	2	21	21	4080 J	5730 J	7750	7000 J	7570	7570
Thallium	UG/L	6.7	19%	2	4	4	21	1.2 U	1.9 U	5.2 J	3.2	3.9 U	3.9 U
Vanadium	UG/L	9.2	24%		0	5	21	7.6 J	1.6 U	1.5 U	1.8 U	2.9 U	2.9 U
Zinc	UG/L	85.1	95%		0	20	21	57.4	4.5 J	7.1 J	22	2.8 J	2.8 J
Other Analytes													
COD	MG/L	16	40%		0	6	15				5 U	12	12
Nitrate Nitrite Nitrogen	MG/L	0.49	94%	10000	0	15	16				0.06	0.01 U	0.01 U
Total Dissolved Solids	MG/L	1030	100%		0	15	15				233	234	234
Total Hardness-CaCO3	MG/L	790	100%		0	15	15				180	210	210

Notes:
(1) GA = NYSDEC Class GA Groundwater Standard (TOGS 1.1.1, June 1998)
MCL = Maximum Contaminant Level - Drinking Water Standards and Health Advisory (EPA 822-B-00-001)
(2) Shading indicates a concentration above the groundwater standard.

U = compound was not detected
J = the reported value is an estimated concentration
R = the analytical result was rejected during data validation.

TABLE 2
SEAD-57 GROUNDWATER SAMPLE RESULTS
SENECA ARMY DEPOT ACTIVITY

Parameter	Units	Maximum Value	Frequency of Detection	Criteria Level	Number of Exceedances	Number of Times Detected	Number of Samples Analyzed	SEAD-57 MW57-2 GW MW57-2 4.1 6.1 2/3/1994 SA ESI Value (Q)	SEAD-57 MW57-2 GW 572006 8 8 1/23/2000 DU RI PHASE 1 STEP 1 1 Value (Q)	SEAD-57 MW57-2 GW 572000 8 8 1/23/2000 SA RI PHASE 1 STEP 1 1 Value (Q)	SEAD-57 MW57-2 GW 572108 8 8 4/27/2000 DU RI PHASE 1 STEP 1 2 Value (Q)	SEAD-57 MW57-2 GW 572101 8 8 4/27/2000 SA RI PHASE 1 STEP 1 2 Value (Q)	SEAD-57 MW57-3 GW MW57-4 4.1 6.1 2/3/1994 DU ESI Value (Q)	SEAD-57 MW57-3 GW MW57-3 4.1 6.1 2/3/1994 SA ESI Value (Q)
Methyl butyl ketone	UG/L	0	0%		0	0	19	10 U	2.5 U	2.5 U	2.5 U	2.5 U		10 U
Methyl chloride	UG/L	0	0%	5	0	0	19	10 U	0.5 U	0.5 U	0.5 U	0.5 U		10 U
Methyl ethyl ketone	UG/L	0	0%		0	0	19	10 U	5 U	5 U	5 U	5 U		10 U
Methyl iodide	UG/L	0	0%	5	0	0	16		0.5 U	0.5 U	0.5 U	0.5 U		
Methyl isobutyl ketone	UG/L	0	0%		0	0	19	10 U	2.5 U	2.5 U	2.5 U	2.5 U		10 U
Methyl methacrylate	UG/L	0	0%	50	0	0	16		0.5 U	0.5 U	0.5 U	0.5 U		
Methylene bromide	UG/L	0	0%	5	0	0	16		0.5 U	0.5 U	0.5 U	0.5 U		
Methylene chloride	UG/L	0	0%	5	0	0	19	10 U	0.5 U	0.5 U	0.5 U	0.5 U		10 U
Naphthalene	UG/L	0	0%		0	0	16		0.5 U	0.5 U	0.5 U	0.5 U		
Nitrobenzene	UG/L	0	0%	0.4	0	0	16		25 UJ	25 UJ	25 U	25 U		
Ortho Xylene	UG/L	0	0%	5	0	0	16		0.5 U	0.5 U	0.5 U	0.5 U		
Pentachloroethane	UG/L	0	0%	5	0	0	8		0.5 UJ	0.5 UJ	2 UR	2 UR		
Propionitrile	UG/L	0	0%		0	0	16		25 U	25 U	25 U	25 U		
Propylbenzene	UG/L	0	0%	5	0	0	16		0.5 U	0.5 U	0.5 U	0.5 U		
Styrene	UG/L	0	0%	5	0	0	19	10 U	0.5 U	0.5 U	0.5 U	0.5 U		10 U
Tetrachloroethene	UG/L	0	0%	5	0	0	19	10 U	0.5 U	0.5 U	0.5 U	0.5 U		10 U
Tetrahydrofuran	UG/L	0	0%		0	0	16		2.5 U	2.5 U	2.5 U	2.5 U		
Toluene	UG/L	0	0%	5	0	0	19	10 U	0.5 U	0.5 U	0.5 U	0.5 U		10 U
Total Xylenes	UG/L	0	0%	5	0	0	19	10 U	0.5 U	0.5 U	0.5 U	0.5 U		10 U
Trans-1,2-Dichloroethene	UG/L	0	0%	5	0	0	16		0.5 U	0.5 U	0.5 U	0.5 U		
Trans-1,3-Dichloropropene	UG/L	0	0%	0.4	0	0	19	10 U	0.5 U	0.5 U	0.5 U	0.5 U		10 U
Trans-1,4-Dichloro-2-butene	UG/L	0	0%		0	0	16		0.5 U	0.5 U	0.5 U	0.5 U		
Trichloroethene	UG/L	0	0%	5	0	0	19	10 U	0.5 U	0.5 U	0.5 U	0.5 U		10 U
Trichlorofluoromethane	UG/L	0	0%	5	0	0	16		0.5 U	0.5 U	0.5 U	0.5 U		
Vinyl chloride	UG/L	0	0%	2	0	0	19	10 U	0.5 U	0.5 U	0.5 U	0.5 U		10 U
n-Butylbenzene	UG/L	0	0%	5	0	0	16		0.5 U	0.5 U	0.5 U	0.5 U		
p-Chlorotoluene	UG/L	0	0%	5	0	0	16		0.5 U	0.5 U	0.5 U	0.5 U		
p-Isopropyltoluene	UG/L	0	0%	5	0	0	16		0.5 U	0.5 U	0.5 U	0.5 U		
sec-Butylbenzene	UG/L	0	0%	5	0	0	16		0.5 U	0.5 U	0.5 U	0.5 U		
tert-Butylbenzene	UG/L	0	0%	5	0	0	16		0.5 U	0.5 U	0.5 U	0.5 U		
Semivolatile Organic Compounds														
1,2,4-Trichlorobenzene	UG/L	0	0%	5	0	0	19	10 U	1 U	1 UJ	1 U	1 U		10 U
1,2-Dichlorobenzene	UG/L	0	0%	3	0	0	19	10 U	1 U	1 UJ	1 U	1 U		10 U
1,3-Dichlorobenzene	UG/L	0	0%	3	0	0	19	10 U	1 U	1 UJ	1 U	1 U		10 U
1,4-Dichlorobenzene	UG/L	0	0%	3	0	0	19	10 U	1 U	1 UJ	1 U	1 U		10 U
2,2'-oxybis(1-Chloropropane)	UG/L	0	0%		0	0	3	10 U						10 U
2,4,5-Trichlorophenol	UG/L	0	0%	1	0	0	18	25 U	2.6 U	2.5 UJ	2.6 U	2.8 UR		25 U
2,4,6-Trichlorophenol	UG/L	0	0%	1	0	0	18	10 U	1 U	1 UJ	1 U	1.1 UR		10 U
2,4-Dichlorophenol	UG/L	0	0%	5	0	0	18	10 U	1 U	1 UJ	1 U	1.1 UR		10 U
2,4-Dimethylphenol	UG/L	0	0%		0	0	18	10 U	1 U	1 UJ	1 U	1.1 UR		10 U
2,4-Dinitrophenol	UG/L	0	0%		0	0	17	25 U	2.6 UJ	2.5 UR	2.6 UJ	2.8 UR		25 U
2,4-Dinitrotoluene	UG/L	0	0%	5	0	0	19	10 U	1 U	1 UJ	1 U	1 U		10 U
2,6-Dinitrotoluene	UG/L	0	0%	5	0	0	19	10 U	1 U	1 UJ	1 U	1 U		10 U
2-Chloronaphthalene	UG/L	0	0%		0	0	19	10 U	1 U	1 UJ	1 U	1 U		10 U
2-Chlorophenol	UG/L	0	0%		0	0	18	10 U	1 U	1 UJ	1 U	1.1 UR		10 U
2-Methylnaphthalene	UG/L	0	0%		0	0	19	10 U	1 U	1 UJ	1 U	1 U		10 U
2-Methylphenol	UG/L	0	0%		0	0	18	10 U	1 U	1 UJ	1 U	1 UR		10 U
2-Nitroaniline	UG/L	0	0%	5	0	0	19	25 U	2.6 U	2.5 UJ	2.6 U	2.5 U		25 U
2-Nitrophenol	UG/L	0	0%	1	0	0	18	10 U	1 U	1 UJ	1 U	1 UR		10 U
3,3'-Dichlorobenzidine	UG/L	0	0%	5	0	0	11	10 U	1 U	1 UJ	1 UR	1 UR		10 U
3-Nitroaniline	UG/L	0	0%	5	0	0	19	25 U	2.6 UJ	2.5 UJ	2.6 UJ	2.5 UJ		25 U
4,6-Dinitro-2-methylphenol	UG/L	0	0%	1	0	0	18	25 U	2.6 U	2.5 UJ	2.6 U	2.5 UR		25 U
4-Bromophenyl phenyl ether	UG/L	0	0%		0	0	19	10 U	1 U	1 UJ	1 U	1 U		10 U
4-Chloro-3-methylphenol	UG/L	0	0%	1	0	0	18	10 U	1 U	1 UJ	1 U	1 UR		10 U
4-Chloroaniline	UG/L	0	0%	5	0	0	19	10 U	1 U	1 UJ	1 UJ	1 UJ		10 U
4-Chlorophenyl phenyl ether	UG/L	0	0%		0	0	19	10 U	1 U	1 UJ	1 U	1 U		10 U

TABLE 2
SEAD-57 GROUNDWATER SAMPLE RESULTS
SENECA ARMY DEPOT ACTIVITY

Parameter	Units	Maximum Value	Frequency of Detection	Criteria Level	Number of Exceedances	Number of Times Detected	Number of Samples Analyzed	SEAD-57 MW57-2 GW MW57-2 4.1 6.1 2/3/1994 SA ESI Value (Q)	SEAD-57 MW57-2 GW 572006 8 8 1/23/2000 DU RI PHASE 1 STEP 1 1 Value (Q)	SEAD-57 MW57-2 GW 572000 8 8 1/23/2000 SA RI PHASE 1 STEP 1 1 Value (Q)	SEAD-57 MW57-2 GW 572108 8 8 4/27/2000 DU RI PHASE 1 STEP 1 2 Value (Q)	SEAD-57 MW57-2 GW 572101 8 8 4/27/2000 SA RI PHASE 1 STEP 1 2 Value (Q)	SEAD-57 MW57-3 GW MW57-4 4.1 6.1 2/3/1994 DU ESI Value (Q)	SEAD-57 MW57-3 GW MW57-3 4.1 6.1 2/3/1994 SA ESI Value (Q)
4,4'-DDD	UG/L	0	0%	0.3	0	0	19	0.11 U	0.01 U	0.01 U	0.012 U	0.011 U		0.12 U
4,4'-DDE	UG/L	0	0%	0.2	0	0	19	0.11 U	0.01 U	0.01 U	0.012 U	0.011 U		0.12 U
4,4'-DDT	UG/L	0	0%	0.2	0	0	19	0.11 U	0.01 U	0.01 U	0.012 U	0.011 U		0.12 U
Aldrin	UG/L	0	0%	0	0	0	19	0.054 U	0.0052 U	0.0051 U	0.0059 U	0.0056 U		0.059 U
Alpha-BHC	UG/L	0	0%	0.01	0	0	19	0.054 U	0.0052 U	0.0051 U	0.0059 U	0.0056 U		0.059 U
Alpha-Chlordane	UG/L	0	0%		0	0	19	0.054 U	0.0052 U	0.0051 U	0.0059 U	0.0056 U		0.059 U
Aroclor 1016	UG/L	0	0%	0.09	0	0	19	1.1 U	0.1 U	0.1 U	0.12 U	0.11 U		1.2 U
Aroclor-1221	UG/L	0	0%	0.09	0	0	19	2.2 U	0.21 U	0.2 U	0.24 U	0.22 U		2.4 U
Aroclor-1232	UG/L	0	0%	0.09	0	0	19	1.1 U	0.1 U	0.1 U	0.12 U	0.11 U		1.2 U
Aroclor-1242	UG/L	0	0%	0.09	0	0	19	1.1 U	0.1 U	0.1 U	0.12 U	0.11 U		1.2 U
Aroclor-1248	UG/L	0	0%	0.09	0	0	19	1.1 U	0.1 U	0.1 U	0.12 U	0.11 U		1.2 U
Aroclor-1254	UG/L	0	0%	0.09	0	0	19	1.1 U	0.1 U	0.1 U	0.12 U	0.11 U		1.2 U
Aroclor-1260	UG/L	0	0%	0.09	0	0	19	1.1 U	0.1 U	0.1 U	0.12 U	0.11 U		1.2 U
Beta-BHC	UG/L	0	0%	0.04	0	0	19	0.054 U	0.0052 U	0.0051 U	0.0059 U	0.0056 U		0.059 U
Delta-BHC	UG/L	0	0%	0.04	0	0	19	0.054 U	0.0052 U	0.0051 U	0.0059 U	0.0056 U		0.059 U
Dieldrin	UG/L	0	0%	0.004	0	0	19	0.11 U	0.01 U	0.01 U	0.012 U	0.011 U		0.12 U
Endosulfan I	UG/L	0	0%		0	0	19	0.054 U	0.0052 U	0.0051 U	0.0059 U	0.0056 U		0.059 U
Endosulfan II	UG/L	0	0%		0	0	19	0.11 U	0.01 U	0.01 U	0.012 U	0.011 U		0.12 U
Endosulfan sulfate	UG/L	0	0%		0	0	19	0.11 U	0.01 U	0.01 U	0.012 U	0.011 U		0.12 U
Endrin	UG/L	0	0%	0	0	0	19	0.11 U	0.01 U	0.01 U	0.012 U	0.011 U		0.12 U
Endrin aldehyde	UG/L	0	0%	5	0	0	19	0.11 U	0.01 U	0.01 U	0.012 U	0.011 U		0.12 U
Endrin ketone	UG/L	0	0%	5	0	0	19	0.11 U	0.01 U	0.01 U	0.012 U	0.011 U		0.12 U
Gamma-BHC/Lindane	UG/L	0	0%	0.05	0	0	19	0.054 U	0.0052 U	0.0051 U	0.0059 U	0.0056 U		0.059 U
Gamma-Chlordane	UG/L	0	0%		0	0	19	0.054 U	0.0052 U	0.0051 U	0.0059 U	0.0056 U		0.059 U
Heptachlor	UG/L	0	0%	0.04	0	0	19	0.054 U	0.0052 U	0.0051 U	0.0059 U	0.0056 U		0.059 U
Heptachlor epoxide	UG/L	0	0%	0.03	0	0	19	0.054 U	0.0052 U	0.0051 U	0.0059 U	0.0056 U		0.059 U
Hexachlorobenzene	UG/L	0	0%	0.04	0	0	16		0.01 U	0.01 U	0.012 U	0.011 U		
Methoxychlor	UG/L	0	0%	35	0	0	19	0.54 U	0.052 U	0.051 U	0.059 U	0.056 U		0.59 U
Toxaphene	UG/L	0	0%	0.06	0	0	19	5.4 U	0.52 U	0.51 U	0.59 U	0.56 U		5.9 U
Herbicides														
2,4,5-T	UG/L	0	0%	35	0	0	3	0.11 U						0.11 U
2,4,5-TP/Silvex	UG/L	0	0%	0.26	0	0	3	0.11 U						0.11 U
2,4-D	UG/L	0	0%	50	0	0	3	1.1 U						1.1 U
2,4-DB	UG/L	0	0%		0	0	3	1.1 U						1.1 U
Dalapon	UG/L	0	0%	50	0	0	3	2.5 U						2.5 U
Dicamba	UG/L	0	0%	0.44	0	0	3	0.11 U						0.11 U
Dichloroprop	UG/L	0	0%		0	0	3	1.1 U						1.1 U
Dinoseb	UG/L	0	0%	1	0	0	3	0.54 U						0.53 U
MCPA	UG/L	0	0%	0.44	0	0	3	110 U						110 U
MCPP	UG/L	0	0%		0	0	3	110 U						110 U
Metals														
Aluminum	UG/L	6540	100%		0	21	21	6540	51.4 J	43.9 J	25.1 J	18.4 J		482
Antimony	UG/L	44.7	14%	3	2	3	21	21.6 UJ	5.4 U	5.4 U	4.6 U	4.6 U		**35.7** J
Arsenic	UG/L	4.1	10%	10	0	2	21	1.4 U	2.4 U	2.4 U	2.5 U	2.5 U		1.4 U
Barium	UG/L	129	100%	1000	0	21	21	83.5 J	20.3 J	22 J	23.6 J	23.4 J		65.5 J
Beryllium	UG/L	0.63	5%	4	0	1	21	0.63 J	0.6 U	0.6 U	0.3 U	0.3 U		0.4 U
Cadmium	UG/L	3.1	10%	5	0	2	21	3.1 J	0.8 U	0.8 U	0.3 U	0.3 U		2.1 U
Calcium	UG/L	297000	100%		0	21	21	288000	227000	233000	297000 J	297000 J		97900
Chromium	UG/L	14.5	62%	50	0	13	21	14.5	1.2 J	1 J	2.2 U	2.2 U		3.7 J
Cobalt	UG/L	14.8	5%		0	1	21	14.8 J	3.5 U	3.5 U	3 U	3 U		4.4 U
Copper	UG/L	19.5	48%	200	0	10	21	5.2 J	1.6 U	1.6 U	2.1 U	2.1 U		3.1 U
Cyanide	UG/L	0	0%		0	0	21	5 U	10 U	10 U	10 U	10 U		5 U
Iron	UG/L	9260	90%	300	12	19	21	**9260**	142 J	138 J	24.9 U	24.9 U		**652**
Iron+Manganese	UG/L	9587	90%	500	6	19	21	**9587**	213.6 J	182.1 J	25.9 U	25.9 U		**774**
Lead	UG/L	2.2	14%	15	0	3	21	2.2 J	1 U	1 U	2.3 U	2.3 U		1.1 J
Magnesium	UG/L	36900	100%		0	21	21	36900	28500	29600	31200	31200		21100

TABLE 2
SEAD-57 GROUNDWATER SAMPLE RESULTS
SENECA ARMY DEPOT ACTIVITY

Parameter	Units	Maximum Value	Frequency of Detection	Criteria Level	Number of Exceedances	Number of Times Detected	Number of Samples Analyzed	SEAD-57 MW57-3 GW 572001 8 8 1/23/2000 SA RI PHASE 1 STEP 1 1 Value (Q)	SEAD-57 MW57-3 GW 572102 8 8 4/27/2000 SA RI PHASE 1 STEP 1 2 Value (Q)	SEAD-57 MW57-4 GW 572007 11 11 1/25/2000 SA RI PHASE 1 STEP 1 1 Value (Q)	SEAD-57 MW57-4 GW 572103 11 11 4/26/2000 SA RI PHASE 1 STEP 1 2 Value (Q)	SEAD-57 MW57-5 GW 572005 22 22 1/24/2000 SA RI PHASE 1 STEP 1 1 Value (Q)	SEAD-57 MW57-5 GW 572104 22 22 4/26/2000 SA RI PHASE 1 STEP 1 2 Value (Q)
Volatile Organic Compounds													
1,1,1,2-Tetrachloroethane	UG/L	0	0%	5	0	0	16	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,1-Trichloroethane	UG/L	0	0%	5	0	0	19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2,2-Tetrachloroethane	UG/L	0	0%	5	0	0	11	0.5 U	0.5 UR	0.5 U	0.5 UR	0.5 U	0.5 UR
1,1,2-Trichloroethane	UG/L	0	0%	1	0	0	19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethane	UG/L	0	0%	5	0	0	19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethene	UG/L	0	0%	5	0	0	19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloropropene	UG/L	0	0%	5	0	0	16	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,3-Trichlorobenzene	UG/L	0	0%	5	0	0	16	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,3-Trichloropropane	UG/L	0	0%	0.04	0	0	16	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,4-Trichlorobenzene	UG/L	0	0%	5	0	0	16	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,4-Trimethylbenzene	UG/L	0	0%	5	0	0	16	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0.04	0	0	16	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 U
1,2-Dibromoethane	UG/L	0	0%	0.0006	0	0	16	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichlorobenzene	UG/L	0	0%	3	0	0	16	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethane	UG/L	0	0%	0.6	0	0	19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethene (total)	UG/L	0	0%	5	0	0	3						
1,2-Dichloropropane	UG/L	0	0%	1	0	0	19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3,5-Trimethylbenzene	UG/L	0	0%	5	0	0	16	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3-Dichlorobenzene	UG/L	0	0%	3	0	0	16	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3-Dichloropropane	UG/L	0	0%	5	0	0	16	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,4-Dichlorobenzene	UG/L	0	0%	3	0	0	16	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2,2-Dichloropropane	UG/L	0	0%		0	0	16	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-Chlorotoluene	UG/L	0	0%	5	0	0	16	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-Nitropropane	UG/L	0	0%		0	0	16	25 U	25 UJ	25 U	25 UJ	25 U	25 UJ
Acetone	UG/L	0	0%		0	0	19	5 U	5 U	5 UJ	5 U	5 U	5 U
Acrylonitrile	UG/L	0	0%	5	0	0	16	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Allyl chloride	UG/L	0	0%	5	0	0	16	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Benzene	UG/L	0	0%	1	0	0	19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromobenzene	UG/L	0	0%	5	0	0	16	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromochloromethane	UG/L	0	0%	5	0	0	16	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromodichloromethane	UG/L	0	0%	80	0	0	19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromoform	UG/L	0	0%	80	0	0	19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Butyl chloride	UG/L	0	0%	5	0	0	16	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon disulfide	UG/L	0	0%		0	0	19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon tetrachloride	UG/L	0	0%	5	0	0	19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroacetonitrile	UG/L	0	0%		0	0	16	25 U	25 U	25 U	25 U	25 U	25 U
Chlorobenzene	UG/L	0	0%	5	0	0	19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorodibromomethane	UG/L	0	0%	80	0	0	19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroethane	UG/L	0	0%	5	0	0	19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroform	UG/L	0	0%	7	0	0	19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Cis-1,2-Dichloroethene	UG/L	0	0%	5	0	0	16	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Cis-1,3-Dichloropropene	UG/L	0	0%	0.4	0	0	19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Dichlorodifluoromethane	UG/L	0	0%	5	0	0	16	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Dichloromethyl methyl ketone	UG/L	0	0%		0	0	11	25 U	25 UR	25 U	25 UJ	25 U	25 UJ
Ethyl benzene	UG/L	0	0%	5	0	0	19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Ethyl ether	UG/L	0	0%		0	0	16	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Ethyl methacrylate	UG/L	0	0%		0	0	16	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Hexachlorobutadiene	UG/L	0	0%	0.5	0	0	16	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Hexachloroethane	UG/L	0	0%	5	0	0	16	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Isopropylbenzene	UG/L	0	0%	5	0	0	16	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Meta/Para Xylene	UG/L	0	0%		0	0	16	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methacrylonitrile	UG/L	0	0%	5	0	0	16	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methyl 2-propenoate	UG/L	0	0%		0	0	16	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methyl Tertbutyl Ether	UG/L	0	0%		0	0	16	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methyl bromide	UG/L	0	0%	5	0	0	19	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U

TABLE 2
SEAD-57 GROUNDWATER SAMPLE RESULTS
SENECA ARMY DEPOT ACTIVITY

								SEAD-57 MW57-3 GW 572001 8 8 1/23/2000 SA	SEAD-57 MW57-3 GW 572102 8 8 4/27/2000 SA	SEAD-57 MW57-4 GW 572007 11 11 1/25/2000 SA	SEAD-57 MW57-4 GW 572103 11 11 4/26/2000 SA	SEAD-57 MW57-5 GW 572005 22 22 1/24/2000 SA	SEAD-57 MW57-5 GW 572104 22 22 4/26/2000 SA
								RI PHASE 1 STEP 1	RI PHASE 1 STEP 1	RI PHASE 1 STEP 1	RI PHASE 1 STEP 1	RI PHASE 1 STEP 1	RI PHASE 1 STEP 1
		Maximum	Frequency of	Criteria	Number of	Number of Times	Number of Samples	1	2	1	2	1	2
Parameter	**Units**	**Value**	**Detection**	**Level**	**Exceedances**	**Detected**	**Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
4-Methylphenol	UG/L	0	0%		0	0	18	1 U	1.2 U	1 U	1.2 U	1 U	1.1 U
4-Nitroaniline	UG/L	0	0%	5	0	0	19	2.6 UJ	2.9 UJ	2.6 U	2.9 UJ	2.6 UJ	2.7 UJ
4-Nitrophenol	UG/L	0	0%	1	0	0	17	2.6 U	2.9 U	2.6 U	2.9 U	2.6 U	2.7 UJ
Acenaphthene	UG/L	0	0%		0	0	19	1 U	1.2 U	1 U	1.2 U	1 U	1.1 U
Acenaphthylene	UG/L	0	0%		0	0	19	1 U	1.2 U	1 U	1.2 U	1 U	1.1 U
Anthracene	UG/L	0	0%		0	0	19	1 U	1.2 U	1 U	1.2 U	1 U	1.1 U
Benzo(a)anthracene	UG/L	0	0%		0	0	19	1 U	1.2 U	1 U	1.2 U	1 U	1.1 U
Benzo(a)pyrene	UG/L	0	0%	0	0	0	19	1 U	1.2 U	1 U	1.2 U	1 U	1.1 U
Benzo(b)fluoranthene	UG/L	0	0%		0	0	19	1 U	1.2 U	1 U	1.2 U	1 U	1.1 U
Benzo(ghi)perylene	UG/L	0	0%		0	0	19	1 U	1.2 U	1 U	1.2 U	1 U	1.1 U
Benzo(k)fluoranthene	UG/L	0	0%		0	0	19	1 U	1.2 U	1 U	1.2 U	1 U	1.1 U
Bis(2-Chloroethoxy)methane	UG/L	0	0%	5	0	0	19	1 U	1.2 U	1 U	1.2 U	1 U	1.1 UJ
Bis(2-Chloroethyl)ether	UG/L	0	0%	1	0	0	19	1 U	1.2 U	1 U	1.2 U	1 U	1.1 U
Bis(2-Chloroisopropyl)ether	UG/L	0	0%	5	0	0	16	1 U	1.2 U	1 U	1.2 U	1 U	1.1 U
Bis(2-Ethylhexyl)phthalate	UG/L	20	5%	5	1	1	19	1 U	1.2 U	1 U	1.2 U	1 U	1.1 U
Butylbenzylphthalate	UG/L	0.077	5%		0	1	19	1 U	1.2 U	1 U	1.2 U	1 U	1.1 U
Carbazole	UG/L	0	0%		0	0	19	1 U	1.2 UJ	1 U	1.2 UJ	1 U	1.1 UJ
Chrysene	UG/L	0	0%		0	0	19	1 U	1.2 U	1 U	1.2 U	1 U	1.1 U
Di-n-butylphthalate	UG/L	0	0%	50	0	0	19	1 U	1.2 U	1 U	1.2 U	1 U	1.1 U
Di-n-octylphthalate	UG/L	0	0%		0	0	19	1 U	1.2 U	1 U	1.2 U	1 U	1.1 U
Dibenz(a,h)anthracene	UG/L	0	0%		0	0	19	1 U	1.2 U	1 U	1.2 U	1 U	1.1 U
Dibenzofuran	UG/L	0	0%		0	0	19	1 U	1.2 U	1 U	1.2 U	1 U	1.1 U
Diethyl phthalate	UG/L	1.9	5%		0	1	19	1 U	1.2 U	1.9	1.2 U	1 U	1.1 U
Dimethylphthalate	UG/L	0	0%		0	0	19	1 U	1.2 U	1 U	1.2 U	1 U	1.1 U
Fluoranthene	UG/L	0	0%		0	0	19	1 U	1.2 U	1 U	1.2 U	1 U	1.1 U
Fluorene	UG/L	0	0%		0	0	19	1 U	1.2 U	1 U	1.2 U	1 U	1.1 U
Hexachlorobenzene	UG/L	0	0%	0.04	0	0	19	1 U	1.2 U	1 UJ	1.2 U	1 U	1.1 U
Hexachlorobutadiene	UG/L	0	0%	0.5	0	0	19	1 U	1.2 U	1 U	1.2 U	1 U	1.1 U
Hexachlorocyclopentadiene	UG/L	0	0%	5	0	0	19	1 U	1.2 U	1 U	1.2 U	1 U	1.1 U
Hexachloroethane	UG/L	0	0%	5	0	0	19	1 U	1.2 U	1 U	1.2 U	1 U	1.1 U
Indeno(1,2,3-cd)pyrene	UG/L	0	0%		0	0	19	1 U	1.2 U	1 U	1.2 U	1 U	1.1 U
Isophorone	UG/L	0	0%		0	0	19	1 U	1.2 U	1 U	1.2 U	1 U	1.1 U
N-Nitrosodiphenylamine	UG/L	0	0%		0	0	19	1 U	1.2 U	1 U	1.2 U	1 U	1.1 U
N-Nitrosodipropylamine	UG/L	0	0%		0	0	19	1 U	1.2 U	1 U	1.2 U	1 U	1.1 U
Naphthalene	UG/L	0	0%		0	0	19	1 U	1.2 U	1 U	1.2 U	1 U	1.1 U
Nitrobenzene	UG/L	0	0%	0.4	0	0	19	1 U	1.2 U	1 U	1.2 U	1 U	1.1 U
Pentachlorophenol	UG/L	0	0%	1	0	0	18	2.6 U	2.9 U	2.6 U	2.9 U	2.6 U	2.7 U
Phenanthrene	UG/L	0	0%		0	0	19	1 U	1.2 U	1 U	1.2 U	1 U	1.1 U
Phenol	UG/L	0	0%	1	0	0	18	1 U	1.2 U	1 U	1.2 U	1 U	1.1 U
Pyrene	UG/L	0	0%		0	0	19	1 U	1.2 U	1 U	1.2 U	1 U	1.1 U
Explosives													
1,3,5-Trinitrobenzene	UG/L	0	0%	5	0	0	20	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,3-Dinitrobenzene	UG/L	0	0%	5	0	0	20	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
2,4,6-Trinitrotoluene	UG/L	0	0%	5	0	0	20	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
2,4-Dinitrotoluene	UG/L	0	0%	5	0	0	20	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
2,6-Dinitrotoluene	UG/L	0	0%	5	0	0	20	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
2-Nitrotoluene	UG/L	0	0%	5	0	0	16	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
2-amino-4,6-Dinitrotoluene	UG/L	0	0%		0	0	20	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
3-Nitrotoluene	UG/L	0	0%	5	0	0	16	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
4-Nitrotoluene	UG/L	0	0%	5	0	0	16	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
4-amino-2,6-Dinitrotoluene	UG/L	0	0%		0	0	20	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
HMX	UG/L	0	0%		0	0	20	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Nitrobenzene	UG/L	0	0%	0.4	0	0	16	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
RDX	UG/L	0	0%		0	0	20	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Tetryl	UG/L	0	0%		0	0	20	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Pesticides and PCBs													

TABLE 2
SEAD-57 GROUNDWATER SAMPLE RESULTS
SENECA ARMY DEPOT ACTIVITY

								SEAD-57	SEAD-57	SEAD-57	SEAD-57	SEAD-57	SEAD-57
								MW57-3	MW57-3	MW57-4	MW57-4	MW57-5	MW57-5
								GW	GW	GW	GW	GW	GW
								572001	572102	572007	572103	572005	572104
								8	8	11	11	22	22
								8	8	11	11	22	22
								1/23/2000	4/27/2000	1/25/2000	4/26/2000	1/24/2000	4/26/2000
								SA	SA	SA	SA	SA	SA
		Maximum	Frequency of	Criteria	Number of	Number of Times	Number of Samples	RI PHASE 1 STEP 1	RI PHASE 1 STEP 1	RI PHASE 1 STEP 1	RI PHASE 1 STEP 1	RI PHASE 1 STEP 1	RI PHASE 1 STEP 1
								1	2	1	2	1	2
Parameter	**Units**	**Value**	**Detection**	**Level**	**Exceedances**	**Detected**	**Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Manganese	UG/L	327	90%	300	1	19	21	1.1 J	20.6	64.1	2.5 J	61.4	43.8
Mercury	UG/L	0	0%	0.7	0	0	21	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Nickel	UG/L	18.8	29%	100	0	6	21	4.2 U	4.3 J	4.2 U	2.9 U	6.2 J	2.9 U
Potassium	UG/L	4600	100%		0	21	21	1030 J	2940 J	3870 J	1130 J	3770 J	3020 J
Selenium	UG/L	2.4	10%	10	0	2	21	2.2 U	4 U	2.4 J	4 U	2.5 U	4 UJ
Silver	UG/L	3.1	14%	50	0	3	21	1 U	1.9 U	1 U	1.9 U	1.3 U	1.9 U
Sodium	UG/L	26100	100%	20000	2	21	21	6730	9620	9100	5060	**20100** J	**26100**
Thallium	UG/L	6.7	19%	2	4	4	21	3.6 U	3.9 U	**6.7** J	3.9 U	3.2 U	3.9 UJ
Vanadium	UG/L	9.2	24%		0	5	21	2.8 U	2.9 U	2.8 U	2.9 U	5.2 J	2.9 U
Zinc	UG/L	85.1	95%		0	20	21	7.4 J	3.5 J	3.4 J	6.7 J	8.2 J	10.6 J
Other Analytes													
COD	MG/L	16	40%		0	6	15	5 U	8	6	5 U	5 U	6
Nitrate/Nitrite Nitrogen	MG/L	0.49	94%	10000	0	15	16	0.03	0.09	0.1	0.13	0.02	0.03
Total Dissolved Solids	MG/L	1030	100%		0	15	15	297	416	435	291	372	334
Total Hardness-CaCO3	MG/L	790	100%		0	15	15	260	380	325	320	315	280

Notes
(1) GA = NYSDEC Class GA Groundwater Standard (TOGS 1.1.1, June 1998)
MCL = Maximum Contaminant Level - Drinking Water Standards and Health Advisory (EPA 822-B-00-001)
(2) Shading indicates a concentration above the groundwater standard.

U = compound was not detected
J = the reported value is an estimated concentration
R = the analytical result was rejected during data validation.

TABLE 2
SEAD-57 GROUNDWATER SAMPLE RESULTS
SENECA ARMY DEPOT ACTIVITY

Parameter	Units	Maximum Value	Frequency of Detection	Criteria Level	Number of Exceedances	Number of Times Detected	Number of Samples Analyzed	SEAD-57 MW57-6 GW 572004 12.04 12.04 1/24/2000 SA RI PHASE 1 STEP 1 1 Value (Q)	SEAD-57 MW57-6 GW 572105 12 12 4/27/2000 SA RI PHASE 1 STEP 1 2 Value (Q)	SEAD-57 MW57-7 GW 572003 12 12 1/24/2000 SA RI PHASE 1 STEP 1 1 Value (Q)	SEAD-57 MW57-7 GW 572106 12 12 4/28/2000 SA RI PHASE 1 STEP 1 2 Value (Q)
Methyl butyl ketone	UG/L	0	0%		0	0	19	2.5 U	2.5 U	2.5 U	2.5 U
Methyl chloride	UG/L	0	0%	5	0	0	19	0.5 U	0.5 U	0.5 U	0.5 U
Methyl ethyl ketone	UG/L	0	0%		0	0	19	5 U	5 U	5 U	5 U
Methyl iodide	UG/L	0	0%	5	0	0	16	0.5 U	0.5 U	0.5 U	0.5 U
Methyl isobutyl ketone	UG/L	0	0%		0	0	19	2.5 U	2.5 U	2.5 U	2.5 U
Methyl methacrylate	UG/L	0	0%	50	0	0	16	0.5 U	0.5 U	0.5 U	0.5 U
Methylene bromide	UG/L	0	0%	5	0	0	16	0.5 U	0.5 U	0.5 U	0.5 U
Methylene chloride	UG/L	0	0%	5	0	0	19	0.5 U	0.5 U	0.5 U	0.5 U
Naphthalene	UG/L	0	0%		0	0	16	0.5 U	0.5 U	0.5 U	0.5 U
Nitrobenzene	UG/L	0	0%	0.4	0	0	16	25 UJ	25 U	25 UJ	25 U
Ortho Xylene	UG/L	0	0%	5	0	0	16	0.5 U	0.5 U	0.5 U	0.5 U
Pentachloroethane	UG/L	0	0%	5	0	0	8	0.5 UJ	2 UR	0.5 UJ	2 UR
Propionitrile	UG/L	0	0%		0	0	16	25 U	25 U	25 U	25 U
Propylbenzene	UG/L	0	0%	5	0	0	16	0.5 U	0.5 U	0.5 U	0.5 U
Styrene	UG/L	0	0%	5	0	0	19	0.5 U	0.5 U	0.5 U	0.5 U
Tetrachloroethene	UG/L	0	0%	5	0	0	19	0.5 U	0.5 U	0.5 U	0.5 U
Tetrahydrofuran	UG/L	0	0%		0	0	16	2.5 U	2.5 U	2.5 U	2.5 U
Toluene	UG/L	0	0%	5	0	0	19	0.5 U	0.5 U	0.5 U	0.5 U
Total Xylenes	UG/L	0	0%	5	0	0	19	0.5 U	0.5 U	0.5 U	0.5 U
Trans-1,2-Dichloroethene	UG/L	0	0%	5	0	0	16	0.5 U	0.5 U	0.5 U	0.5 U
Trans-1,3-Dichloropropene	UG/L	0	0%	0.4	0	0	19	0.5 U	0.5 U	0.5 U	0.5 U
Trans-1,4-Dichloro-2-butene	UG/L	0	0%		0	0	16	0.5 U	0.5 U	0.5 U	0.5 U
Trichloroethene	UG/L	0	0%	5	0	0	19	0.5 U	0.5 U	0.5 U	0.5 U
Trichlorofluoromethane	UG/L	0	0%	5	0	0	16	0.5 U	0.5 U	0.5 U	0.5 U
Vinyl chloride	UG/L	0	0%	2	0	0	19	0.5 U	0.5 U	0.5 U	0.5 U
n-Butylbenzene	UG/L	0	0%	5	0	0	16	0.5 U	0.5 U	0.5 U	0.5 U
p-Chlorotoluene	UG/L	0	0%	5	0	0	16	0.5 U	0.5 U	0.5 U	0.5 U
p-Isopropyltoluene	UG/L	0	0%	5	0	0	16	0.5 U	0.5 U	0.5 U	0.5 U
sec-Butylbenzene	UG/L	0	0%	5	0	0	16	0.5 U	0.5 U	0.5 U	0.5 U
tert-Butylbenzene	UG/L	0	0%	5	0	0	16	0.5 U	0.5 U	0.5 U	0.5 U
Semivolatile Organic Compounds											
1,2,4-Trichlorobenzene	UG/L	0	0%	5	0	0	19	1 U	1 U	1 U	1 U
1,2-Dichlorobenzene	UG/L	0	0%	3	0	0	19	1 U	1 U	1 U	1 U
1,3-Dichlorobenzene	UG/L	0	0%	3	0	0	19	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene	UG/L	0	0%	3	0	0	19	1 U	1 U	1 U	1 U
2,2'-oxybis(1-Chloropropane)	UG/L	0	0%		0	0	3				
2,4,5-Trichlorophenol	UG/L	0	0%	1	0	0	18	2.5 U	2.6 U	2.6 U	2.5 U
2,4,6-Trichlorophenol	UG/L	0	0%	1	0	0	18	1 U	1 U	1 U	1 U
2,4-Dichlorophenol	UG/L	0	0%	5	0	0	18	1 U	1 U	1 U	1 U
2,4-Dimethylphenol	UG/L	0	0%		0	0	18	1 U	1 U	1 U	1 U
2,4-Dinitrophenol	UG/L	0	0%		0	0	17	2.5 UJ	2.6 UJ	2.6 UJ	2.5 U
2,4-Dinitrotoluene	UG/L	0	0%	5	0	0	19	1 U	1 U	1 U	1 U
2,6-Dinitrotoluene	UG/L	0	0%	5	0	0	19	1 U	1 U	1 U	1 U
2-Chloronaphthalene	UG/L	0	0%		0	0	19	1 U	1 U	1 U	1 U
2-Chlorophenol	UG/L	0	0%		0	0	18	1 U	1 U	1 U	1 U
2-Methylnaphthalene	UG/L	0	0%		0	0	19	1 U	1 U	1 U	1 U
2-Methylphenol	UG/L	0	0%		0	0	18	1 U	1 U	1 U	1 U
2-Nitroaniline	UG/L	0	0%	5	0	0	19	2.5 U	2.6 U	2.6 U	2.5 U
2-Nitrophenol	UG/L	0	0%	1	0	0	18	1 U	1 U	1 U	1 U
3,3'-Dichlorobenzidine	UG/L	0	0%	5	0	0	11	1 U	1 UR	1 U	1 UR
3-Nitroaniline	UG/L	0	0%	5	0	0	19	2.5 UJ	2.6 UJ	2.6 UJ	2.5 UJ
4,6-Dinitro-2-methylphenol	UG/L	0	0%	1	0	0	18	2.5 U	2.6 U	2.6 U	2.5 U
4-Bromophenyl phenyl ether	UG/L	0	0%		0	0	19	1 U	1 U	1 U	1 U
4-Chloro-3-methylphenol	UG/L	0	0%	1	0	0	18	1 U	1 U	1 U	1 U
4-Chloroaniline	UG/L	0	0%	5	0	0	19	1 U	1 UJ	1 U	1 UJ
4-Chlorophenyl phenyl ether	UG/L	0	0%		0	0	19	1 U	1 U	1 U	1 U

TABLE 2
SEAD-57 GROUNDWATER SAMPLE RESULTS
SENECA ARMY DEPOT ACTIVITY

Parameter	Units	Maximum Value	Frequency of Detection	Criteria Level	Number of Exceedances	Number of Times Detected	Number of Samples Analyzed	SEAD-57 MW57-6 GW 572004 12.04 12.04 1/24/2000 SA RI PHASE 1 STEP 1 1 Value (Q)	SEAD-57 MW57-6 GW 572105 12 12 4/27/2000 SA RI PHASE 1 STEP 1 2 Value (Q)	SEAD-57 MW57-7 GW 572003 12 12 1/24/2000 SA RI PHASE 1 STEP 1 1 Value (Q)	SEAD-57 MW57-7 GW 572106 12 12 4/28/2000 SA RI PHASE 1 STEP 1 2 Value (Q)
4,4'-DDD	UG/L	0	0%	0.3	0	0	19	0.01 U	0.011 U	0.01 U	0.012 U
4,4'-DDE	UG/L	0	0%	0.2	0	0	19	0.01 U	0.011 U	0.01 U	0.012 U
4,4'-DDT	UG/L	0	0%	0.2	0	0	19	0.01 U	0.011 U	0.01 U	0.012 U
Aldrin	UG/L	0	0%	0	0	0	19	0.005 U	0.0054 U	0.005 U	0.006 U
Alpha-BHC	UG/L	0	0%	0.01	0	0	19	0.005 U	0.0054 U	0.005 U	0.006 U
Alpha-Chlordane	UG/L	0	0%		0	0	19	0.005 U	0.0054 U	0.005 U	0.006 U
Aroclor-1016	UG/L	0	0%	0.09	0	0	19	0.1 U	0.11 U	0.1 U	0.12 U
Aroclor-1221	UG/L	0	0%	0.09	0	0	19	0.2 U	0.22 U	0.2 U	0.24 U
Aroclor-1232	UG/L	0	0%	0.09	0	0	19	0.1 U	0.11 U	0.1 U	0.12 U
Aroclor-1242	UG/L	0	0%	0.09	0	0	19	0.1 U	0.11 U	0.1 U	0.12 U
Aroclor-1248	UG/L	0	0%	0.09	0	0	19	0.1 U	0.11 U	0.1 U	0.12 U
Aroclor-1254	UG/L	0	0%	0.09	0	0	19	0.1 U	0.11 U	0.1 U	0.12 U
Aroclor-1260	UG/L	0	0%	0.09	0	0	19	0.1 U	0.11 U	0.1 U	0.12 U
Beta-BHC	UG/L	0	0%	0.04	0	0	19	0.005 U	0.0054 U	0.005 U	0.006 U
Delta-BHC	UG/L	0	0%	0.04	0	0	19	0.005 U	0.0054 U	0.005 U	0.006 U
Dieldrin	UG/L	0	0%	0.004	0	0	19	0.01 U	0.011 U	0.01 U	0.012 U
Endosulfan I	UG/L	0	0%		0	0	19	0.005 U	0.0054 U	0.005 U	0.006 U
Endosulfan II	UG/L	0	0%		0	0	19	0.01 U	0.011 U	0.01 U	0.012 U
Endosulfan sulfate	UG/L	0	0%		0	0	19	0.01 U	0.011 U	0.01 U	0.012 U
Endrin	UG/L	0	0%	0	0	0	19	0.01 U	0.011 U	0.01 U	0.012 U
Endrin aldehyde	UG/L	0	0%	5	0	0	19	0.01 U	0.011 U	0.01 U	0.012 U
Endrin ketone	UG/L	0	0%	5	0	0	19	0.01 U	0.011 U	0.01 U	0.012 U
Gamma-BHC Lindane	UG/L	0	0%	0.05	0	0	19	0.005 U	0.0054 U	0.005 U	0.006 U
Gamma-Chlordane	UG/L	0	0%		0	0	19	0.005 U	0.0054 U	0.005 U	0.006 U
Heptachlor	UG/L	0	0%	0.04	0	0	19	0.005 U	0.0054 U	0.005 U	0.006 U
Heptachlor epoxide	UG/L	0	0%	0.03	0	0	19	0.005 U	0.0054 U	0.005 U	0.006 U
Hexachlorobenzene	UG/L	0	0%	0.04	0	0	16	0.01 U	0.011 U	0.01 U	0.012 U
Methoxychlor	UG/L	0	0%	35	0	0	19	0.05 U	0.054 U	0.05 U	0.06 U
Toxaphene	UG/L	0	0%	0.06	0	0	19	0.5 U	0.54 U	0.5 U	0.6 U
Herbicides											
2,4,5-T	UG/L	0	0%	35	0	0	3				
2,4,5-TP/Silvex	UG/L	0	0%	0.26	0	0	3				
2,4-D	UG/L	0	0%	50	0	0	3				
2,4-DB	UG/L	0	0%		0	0	3				
Dalapon	UG/L	0	0%	50	0	0	3				
Dicamba	UG/L	0	0%	0.44	0	0	3				
Dichloroprop	UG/L	0	0%		0	0	3				
Dinoseb	UG/L	0	0%	1	0	0	3				
MCPA	UG/L	0	0%	0.44	0	0	3				
MCPP	UG/L	0	0%		0	0	3				
Metals											
Aluminum	UG/L	6540	100%		0	21	21	1500 J	504 J	250 J	149 J
Antimony	UG/L	44.7	14%	3	2	3	21	5.4 U	4.6 U	5.4 U	4.6 U
Arsenic	UG/L	4.1	10%	10	0	2	21	2.4 U	2.9 J	2.4 U	4.1 J
Barium	UG/L	129	100%	1000	0	21	21	46.7 J	46.5 J	91.2 J	90.4 J
Beryllium	UG/L	0.63	5%	4	0	1	21	0.6 U	0.3 U	0.6 U	0.3 U
Cadmium	UG/L	3.1	10%	5	0	2	21	0.8 U	0.3 U	0.8 U	0.3 U
Calcium	UG/L	297000	100%		0	21	21	74800	78100 J	113000	115000 J
Chromium	UG/L	14.5	62%	50	0	13	21	3.5 J	2.3 J	1 U	2.2 U
Cobalt	UG/L	14.8	5%		0	1	21	3.5 U	3 U	3.5 U	3 U
Copper	UG/L	19.5	48%	200	0	10	21	1.8 J	4 J	2.2 J	2.1 U
Cyanide	UG/L	0	0%		0	0	21	10 U	10 U	10 U	10 U
Iron	UG/L	9260	90%	300	12	19	21	**1190** J	**545** J	270 J	162 J
Iron+Manganese	UG/L	9587	90%	500	6	19	21	**1227.2** J	**581.2** J	307 J	173.5 J
Lead	UG/L	2.2	14%	15	0	3	21	1 U	2.3 U	1 U	2.3 U
Magnesium	UG/L	36900	100%		0	21	21	11600	11700	21800	21200

TABLE 3A
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN IN SEAD-57 SOIL
SENECA ARMY DEPOT ACTIVITY

Scenario Time frame:	Curent/Future
Medium:	Soil
Exposure Medium:	Soil
Exposure Point:	SEAD-57

CAS Number	Chemical	Minimum Detected Concentration [1] (mg/kg)	Q	Maximum Detected Concentration [1] (mg/kg)	Q	Location of Maximum Concentration	Detection Frequency [1]	Range of Reporting Limits [1] (mg/kg)	Concentration Used for Screening [2] (mg/kg)	Background Value [3] (mg/kg)	Screening Value [4] (mg/kg)	Potential ARAR/TBC Source	ARAR / TBC Value [5] (mg/kg)	COPC Flag	Rationale for Contaminant Deletion or Selection [6]
VOC															
67-64-1	Acetone	0.002	J	0.7	J	SD57-6	95 / 133	0.008 - 0.028	0.7		6100	NYSDEC Subpart 375-6	0.05	NO	BSL
71-43-2	Benzene	0.001	J	0.001	J	SS57-5	2 / 125	0.033 - 0.062	0.001		1.1	NYSDEC Subpart 375-6	0.1	NO	BSL
75-15-0	Carbon disulfide	0.0009	J	0.022		SS57-8	130 / 130	0 - 0	0.022		67			NO	BSL
67-66-3	Chloroform	0.007	J	0.007		SS57-8	130 / 130	0 - 0	0.007		0.3			NO	BSL
78-93-3	Methyl ethyl ketone	0.006		0.064		SD57-6	100 / 130	0.02 - 0.07	0.064		2800	NYSDEC Subpart 375-6	0.18	NO	BSL
75-09-2	Methylene chloride	0.001		0.001		SD57-6	100 / 130	0.02 - 0.07	0.001		11	NYSDEC Subpart 375-6	0.18	NO	BSL
127-18-4	Tetrachloroethene	0.00037	J	0.006	J	SB57-2	52 / 130	0 - 230	0.006		0.57			NO	BSL
108-88-3	Toluene	0.001	J	0.033		SS57-51	98 / 130	0.16 - 2.2	0.033		500			NO	BSL
1330-20-7	Total Xylenes	0.001	J	0.002		SS57-51	98 / 130	0.16 - 2.2	0.002		60			NO	BSL
SVOC															
91-57-6	2-Methylnaphthalene	0.0037	J	0.75	J	TP57-2	3 / 124	0.07 - 0.78	0.75		31			NO	BSL
106-44-5	4-Methylphenol	0.0049	J	0.013	J	SD57-4	3 / 124	0.07 - 2	0.013		31	NYSDEC Subpart 375-6	0.33	NO	BSL
120-12-7	Anthracene	0.0051	J	0.0082	J	SS57-7	7 / 125	0.0017 - 0.0032	0.0082		1700	NYSDEC Subpart 375-6	0.094	NO	BSL
56-55-3	Benzo(a)anthracene	0.0047	J	0.062	J	SS57-5	2 / 125	0.033 - 0.062	0.062		0.15	NYSDEC Subpart 375-6	0.1	NO	CSG
50-32-8	Benzo(a)pyrene	0.0046	J	0.076	J	SS57-5	2 / 125	0.033 - 0.062	0.076		0.015	NYSDEC Subpart 375-6	0.1	YES	ASL
205-99-2	Benzo(b)fluoranthene	0.0046	J	0.067	J	SS57-5	2 / 125	0.033 - 0.062	0.067		0.15	NYSDEC Subpart 375-6	0.1	NO	CSG
191-24-2	Benzo(ghi)perylene	0.0054	J	0.054	J	SS57-5	2 / 125	0.033 - 0.062	0.054			NYSDEC Subpart 375-6	0.1		NSV
207-08-9	Benzo(k)fluoranthene	0.0054	J	0.05	J	SS57-5	2 / 125	0.033 - 0.062	0.05		1.5	NYSDEC Subpart 375-6	0.1	NO	CSG
117-81-7	Bis(2-Ethylhexyl)phthalate	0.0057	J	3.4	J	SD57-14	1 / 125	0.0017 - 0.0032	3.4		35	NYSDEC Subpart 375-6	0.036	NO	BSL
218-01-9	Chrysene	0.0044		0.11		SB57-3	130 / 130	0 - 0	0.11		15	NYSDEC Subpart 375-6	30	NO	CSG
84-74-2	Di-n-butylphthalate	0.0041		0.39	J	TP57-2	120 / 130	0 - 31.6	0.39		610	NYSDEC Subpart 375-6	50	NO	BSL
117-81-7	Di-n-octylphthalate	0.0026		0.0026	J	TP57-2	120 / 130	0 - 31.6	0.0026		35	NYSDEC Subpart 375-6	50	NO	BSL
53-70-3	Dibenz(a,h)anthracene	0.0042		0.024	J	TP57-2	120 / 130	0 - 31.6	0.024		0.015	NYSDEC Subpart 375-6	50	YES	ASL
84-66-2	Diethyl phthalate	0.0026		0.0088	J	TP57-2	120 / 130	0 - 31.6	0.0088		4900	NYSDEC Subpart 375-6	50	NO	BSL
206-44-0	Fluoranthene	0.0041		0.15	J	TP57-2	120 / 130	0 - 31.6	0.15		230	NYSDEC Subpart 375-6	50	NO	BSL
86-73-7	Fluorene	0.0081		0.12	J	TP57-2	120 / 130	0 - 31.6	0.12		230	NYSDEC Subpart 375-6	50	NO	BSL
193-39-5	Indeno(1,2,3-cd)pyrene	0.006		0.037	J	TP57-2	120 / 130	0 - 31.6	0.037		0.15	NYSDEC Subpart 375-6	50	NO	CSG
86-30-6	N-Nitrosodiphenylamine	0.0092	J	0.075		S-57-Berm-EX-FL	130 / 130	0 - 0	0.075		99	NYSDEC Subpart 375-6	30	NO	BSL
91-20-3	Naphthalene	0.18		0.18		SD57-6	100 / 130	0.02 - 0.07	0.18		3.9	NYSDEC Subpart 375-6	0.18	NO	BSL
85-01-8	Phenanthrene	0.0029	J	0.23		S-57-Berm-EX-FL	130 / 130	0 - 0	0.23			NYSDEC Subpart 375-6	30		NSV
108-95-2	Phenol	0.0039	J	0.051		S-57-Berm-EX-FL	130 / 130	0 - 0	0.051			NYSDEC Subpart 375-6	30		NSV
129-00-0	Pyrene	0.004	J	0.23		TP57-6	130 / 130	0 - 0	0.23		170			NO	BSL
Pesticides/PCBS															
72-54-8	4,4'-DDD	0.0017	J	0.054		SS57-24	8 / 125	0.0033 - 0.0062	0.054		2	NYSDEC Subpart 375-6	0.0033	NO	BSL
72-55-9	4,4'-DDE	0.0025	J	0.032		SS57-8	9 / 125	0.0033 - 0.0062	0.032		1.4	NYSDEC Subpart 375-6	0.0033	NO	BSL
50-29-3	4,4'-DDT	0.0029	J	0.023		TP57-4	6 / 125	0.0033 - 0.0062	0.023		1.7	NYSDEC Subpart 375-6	0.0033	NO	BSL
319-84-6	Alpha-BHC	0.0011	J	0.0014	J	SD57-14	2 / 125	0.0017 - 0.0032	0.0014		0.077	NYSDEC Subpart 375-6	0.02	NO	BSL
12789-03-6	Alpha-Chlordane	0.0012	J	0.016	J	SS57-7	7 / 125	0.0017 - 0.0032	0.016		1.6	NYSDEC Subpart 375-6	0.094	NO	BSL
11096-82-5	Aroclor-1260	0.024	J	0.027	J	SS57-5	2 / 125	0.033 - 0.062	0.027		0.22	NYSDEC Subpart 375-6	0.1	NO	BSL
319-85-7	Beta-BHC	0.0045	J	0.0045	J	SD57-14	1 / 125	0.0017 - 0.0032	0.0045		0.27	NYSDEC Subpart 375-6	0.036	NO	BSL
60-57-1	Dieldrin	0.0034		0.027	J	TP57-2	120 / 130	0 - 31.6	0.027		0.03	NYSDEC Subpart 375-6	50	NO	BSL
115-29-7	Endosulfan I	0.0052		0.0052	J	TP57-2	120 / 130	0 - 31.6	0.0052		37	NYSDEC Subpart 375-6	50	NO	BSL
891-86-1	Endosulfan II	0.0031		0.0031	J	TP57-2	120 / 130	0 - 31.6	0.0031			NYSDEC Subpart 375-6	50		NSV
7421-93-4	Endrin aldehyde	0.0038		0.0038	J	TP57-2	120 / 130	0 - 31.6	0.0038			NYSDEC Subpart 375-6	50		NSV
53494-70-5	Endrin ketone	0.004		0.004	J	TP57-2	120 / 130	0 - 31.6	0.004			NYSDEC Subpart 375-6	50		NSV
76-44-8	Heptachlor	0.0016		0.0016	J	TP57-2	120 / 130	0 - 31.6	0.0016		0.11	NYSDEC Subpart 375-6	50	NO	BSL
66240-71-9	Heptachlor epoxide	0.002		0.002	J	TP57-2	120 / 130	0 - 31.6	0.002			NYSDEC Subpart 375-6	50		NSV
Metals															
7429-90-5	Aluminum	3940	J	22900	J	SS57-7	7 / 125	0.0017 - 0.0032	22900	20,500	7700	NYSDEC Subpart 375-6	0.094	YES	ASL
7440-36-0	Antimony	0.36	J	6.5	J	SS57-7	7 / 125	0.0017 - 0.0032	6.5	6.55	3.1	NYSDEC Subpart 375-6	0.094	YES	ASL
7440-38-2	Arsenic	1.6	J	17.8	J	SS57-5	2 / 125	0.033 - 0.062	17.8	21.5	0.39	NYSDEC Subpart 375-6	0.1	YES	ASL
7440-39-3	Barium	25.5	J	237	J	SS57-5	2 / 125	0.033 - 0.062	237	159	1500	NYSDEC Subpart 375-6	0.1	NO	BSL
7440-41-7	Beryllium	0.091	J	1.8	J	SS57-5	2 / 125	0.033 - 0.062	1.8	1.4	16	NYSDEC Subpart 375-6	0.1	NO	BSL
7440-43-9	Cadmium	0.06	J	28.6	J	SD57-14	1 / 125	0.0017 - 0.0032	28.6	2.9	7	NYSDEC Subpart 375-6	0.036	YES	ASL
111-11-1	Calcium	835	J	213000		SS57-8	130 / 130	0 - 0	213000	293,000					NUT
7440-47-3	Chromium	7.4		32.1		SB57-3	130 / 130	0 - 0	32.1	32.7	280	NYSDEC Subpart 375-6	30	NO	BSL
7440-48-4	Cobalt	3.6	J	29.7		SD57-10	130 / 130	0 - 0	29.7	29.1	2.3			YES	ASL
7440-50-8	Copper	7.6		2930	J	TP57-2	120 / 130	0 - 31.6	2930	62.8	310	NYSDEC Subpart 375-6	50	YES	ASL
7439-89-6	Iron	7540		39800	J	SB57-3	130 / 130	0 - 0	39800	381,600	5500			YES	ASL
7439-92-1	Lead	3.6		1860		TP57-2	130 / 130	0 - 0	1860	266	40	NYSDEC Subpart 375-6	63	YES	ASL
7439-95-4	Magnesium	1420	J	27600		TP57-9	130 / 130	0 - 0	27600	29,100					NUT
7439-96-5	Manganese	99.3		2580	J	SD57-13	130 / 130	0 - 0	2580	2,380	180	NYSDEC Subpart 375-6	1600	YES	ASL
7439-97-6	Mercury	0.02		0.15		SD57-6	100 / 130	0.02 - 0.07	0.15	0.13	0.43	NYSDEC Subpart 375-6	0.18	NO	BSL
7440-02-0	Nickel	6.5	J	59.2		S-57-Berm-EX-FL	130 / 130	0 - 0	59.2	62.3	150	NYSDEC Subpart 375-6	30	NO	BSL
7440-09-7	Potassium	351	J	3250		TP57-6	130 / 130	0 - 0	3250	3,160					NUT
7782-49-2	Selenium	0.31	J	2.7	J	SS57-43	84 / 130	0.18 - 0.9	2.7	1.7	39	NYSDEC Subpart 375-6	3.9	NO	BSL
7440-22-4	Silver	0.22		1.7	J	SS57-1	51 / 130	0.099 - 1.5	1.7	0.87	39	NYSDEC Subpart 375-6	2	NO	BSL

TABLE 3B
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN IN SEAD-57 GROUNDWATER
SENECA ARMY DEPOT ACTIVITY

Scenario Time frame:	Current/Future
Medium:	Groundwater
Exposure Medium:	Groundwater
Exposure Point:	Aquifer -- Tap Water

CAS Number	Chemical	Minimum Detected Concentration [1] (ug/L)	Q	Maximum Detected Concentration [1] (ug/L)	Q	Location of Maximum Concentration	Detection Frequency [1]	Range of Reporting Limits [1] (ug/L)	Concentration Used for Screening [2] (ug/L)	Background Value [3] (ug/L)	Screening Value [4] (ug/L)	Potential ARAR /TBC Value (ug/L)	Potential ARAR/TBC Source	COPC Flag	Rationale for Contaminant Deletion or Selection [5]
SVOC															
117-81-7	Bis(2-Ethylhexyl)phthalate	20		20		MW57-3	1 / 19	1 - 10	20		4.80	5	GA	YES	ASL
85-68-7	Butylbenzylphthalate	0.077	J	0.077	J	MW57-7	1 / 19	1 - 10	0.077		35			NO	BSL
84-66-2	Diethyl phthalate	1.9		1.9		MW57-4	1 / 19	1 - 10	1.9		29,000			NO	BSL
Metals															
7429-90-5	Aluminum	18.4	J	6540		MW57-2	21 / 21	0 - 0	6540	2,730	37,000			NO	BSL
7440-36-0	Antimony	3	J	44.7	J	MW57-1	3 / 21	2.2 - 21.6	44.7	8	15	3	GA	YES	ASL
7440-38-2	Arsenic	2.9	J	4.1	J	MW57-7	2 / 21	1.4 - 2.5	4.1	2	0.05	10	MCL	YES	ASL
7440-39-3	Barium	15.7	J	129	J	MW57-5	21 / 21	0 - 0	129	78.2	7,300	1,000	GA	NO	BSL
7440-41-7	Beryllium	0.63	J	0.63	J	MW57-2	1 / 21	0.1 - 0.6	0.63	0.21	73	4	MCL	NO	BSL
7440-43-9	Cadmium	0.25	J	3.1	J	MW57-2	2 / 21	0.2 - 2.1	3.1	0.5		5	GA	NO	NSV
7440-70-2	Calcium	49400	J	297000	J	MW57-2	21 / 21	0 - 0	297000	116,000				YES	NUT
7440-47-3	Chromium	1	J	14.5		MW57-2	13 / 21	0.9 - 2.2	14.5	4.7		50	GA	NO	NSV
7440-48-4	Cobalt	14.8	J	14.8	J	MW57-2	1 / 21	1.3 - 4.4	14.8	3.7	11			YES	ASL
7440-50-8	Copper	1.8	J	19.5	J	MW57-1	10 / 21	1.6 - 3.1	19.5	3.3	1,500	200	GA	NO	BSL
7439-89-6	Iron	29.5	J	9260		MW57-2	19 / 21	24.9 - 24.9	9260	4,480	26,000	300	GA	NO	BSL
	Iron+Manganese	30.6	J	9587		MW57-2	19 / 21	25.9 - 25.9	9587			500	GA	YES	NA
7439-92-1	Lead	1.1	J	2.2	J	MW57-2	3 / 21	0.9 - 2.3	2.2	3	0.00	15	MCL	NO	BSL
7439-95-4	Magnesium	6330	J	36900		MW57-2	21 / 21	0 - 0	36900	28,600				YES	NUT
7439-96-5	Manganese	1.1	J	327		MW57-2	19 / 21	1 - 1	327	224	880			NO	BSL
7440-02-0	Nickel	1.9	J	18.8	J	MW57-2	6 / 21	1.7 - 4.2	18.8	7	730	100	GA	NO	BSL
7440-09-7	Potassium	481	J	4600	J	MW57-2	21 / 21	0 - 0	4600	3,830				YES	NUT
7782-49-2	Selenium	2.2	J	2.4	J	MW57-4	2 / 21	0.69 - 4	2.4	2	180	10	GA	NO	BSL
7440-22-4	Silver	2	J	3.1	J	MW57-6	3 / 21	0.9 - 4.2	3.1	1	180	50	GA	NO	BSL
17341-25-2	Sodium	3610	J	26100		MW57-5	21 / 21	0 - 0	26100	14,600		20,000	GA	YES	NUT
7440-28-0	Thallium	3.2		6.7	J	MW57-4	4 / 21	1.2 - 3.9	6.7	2	2.40	2	MCL	YES	ASL
7440-62-2	Vanadium	3	J	9.2	J	MW57-2	5 / 21	1.5 - 2.9	9.2	5.2	260			NO	BSL
7440-66-6	Zinc	1.5	J	85.1		MW57-2	20 / 21	1.5 - 1.5	85.1	23.1	11,000			NO	BSL
Other Analytes															
14797-55-8	Nitrate/Nitrite Nitrogen	20		490		MW57-2	15 / 16	0.01 - 0.01	490	23.1	58,000	10,000	GA	NO	BSL

Notes:

1. Analytical results are from the 1994 ESI, 1999 RI, and 2000 OE EE/CA sampling rounds.
   Laboratory duplicates were not included in the assessment. Range of reporting limits were presented for nondetects only.
2. The maximum detected concentration was used for screening.
3. Background values are average concentrations of background sample results.
4. EPA Regional Screening Levels for tap water. On-line resources available at
   http://www.epa.gov/region09/superfund/prg/index.html. Last updated April 2009.
   Target Cancer Risk = 1E-6; Target Hazard Quotient =0.1. Ingestion from drinking and inhalation of volatiles during showering are evaluated to derive the PRGs.
   Screening values for calcium, magnesium, potassium, and sodium were calculated based on an assumption of 2L/day water intake
   and recommended dietary allowances and adequate intakes for 1-3 yr children (500 mg/day and 80 mg/day for calcium and magnesium) and
   minimum requirements for 2-5 yr children (1400 mg/day for potassium) from Marilyn Wright (2001) Dietary Reference Intakes.
   For sodium, an upper limit intake of 2,400 mg/day (http://www.mealformation.com/dailyval.html) was used.
   PRG for chromium (VI) was used as screening value for chromium.
5. Rationale codes
   Selection Reason: Above Screening Levels (ASL); No Screening Value (NSV)
   Deletion Reason: Essential Nutrient (NUT); Below Screening Level (BSL)

Definitions:
COPC = Chemical of Potential Concern
ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered
MCL = Federal Maximum Contaminant Level
GA = New York State Class GA Groundwater Standard (TOGS 1.1.1, June 1998 with updates)
NA = Not Applicable
Q = Qualifier
J = Estimated Value

TABLE 4A
SEAD-57 SURFACE SOIL EXPOSURE POINT CONCENTRATION SUMMARY
SENECA ARMY DEPOT ACTIVITY

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Soil
Exposure Point:	SEAD-57

CAS #	Chemical of Potential Concern	Units	Arithmetic Mean (1)	EPA ProUCL Student-t 95th UCL Value (1, 2)	Maximum Detected Concentration (1)	Q	EPC Units	Reasonable Maximum Exposure (2)		
								EPA ProUCL Recommended UCL Value	Medium EPC Statistic	Medium EPC Rationale
56-55-3	Benzo(a)anthracene	mg/kg	0.016	0.022	0.062	J	mg/kg	0.022	95% KM Student-t	Non-parametric
50-32-8	Benzo(a)pyrene	mg/kg	0.022	0.030	0.076	J	mg/kg	0.030	95% KM Student-t	Non-parametric
205-99-2	Benzo(b)fluoranthene	mg/kg	0.016	0.021	0.067	J	mg/kg	0.021	95% KM Student-t	Non-parametric
191-24-2	Benzo(ghi)perylene	mg/kg	0.019	0.025	0.054	J	mg/kg	0.025	95% KM Student-t	Non-parametric
207-08-9	Benzo(k)fluoranthene	mg/kg	0.015	0.018	0.050	J	mg/kg	0.018	95% KM Student-t	Non-parametric
218-01-9	Chrysene	mg/kg	0.019	0.023	0.110		mg/kg	0.023	95% KM Student-t	Non-parametric
53-70-3	Dibenz(a,h)anthracene	mg/kg	0.013	0.017	0.024	J	mg/kg	0.017	95% KM Student-t	Non-parametric
193-39-5	Indeno(1,2,3-cd)pyrene	mg/kg	0.015	0.020	0.037	J	mg/kg	0.020	95% KM Student-t	Non-parametric
85-01-8	Phenanthrene	mg/kg	0.020	0.018	0.230		mg/kg	0.018	95% KM Student-t	Non-parametric
108-95-2	Phenol	mg/kg	0.011	0.011	0.051		mg/kg	0.011	95% KM Student-t	Non-parametric
891-86-1	Endosulfan II	mg/kg	0.003	- (3)	0.003	J	mg/kg	0.003	-	-
7421-93-4	Endrin aldehyde	mg/kg	0.004	- (3)	0.004	J	mg/kg	0.004	-	-
53494-70-5	Endrin ketone	mg/kg	0.004	- (3)	0.004	J	mg/kg	0.004	-	-
66240-71-9	Heptachlor epoxide	mg/kg	0.002	- (3)	0.002	J	mg/kg	0.002	-	-
7429-90-5	Aluminum	mg/kg	13995	14450	22,900	J	mg/kg	14,450	95% Student's-t UCL	Normal
7440-36-0	Antimony	mg/kg	1.126	0.817	6.50	J	mg/kg	0.8	95% KM (BCA) UCL	Non-parametric
7440-38-2	Arsenic	mg/kg	4.794	5.0	17.80	J	mg/kg	5.0	95% KM (BCA) UCL	Non-parametric
7440-43-9	Cadmium	mg/kg	2.613	2.3	28.60	J	mg/kg	2.3	95% KM (Chebyshev) UCL	Non-parametric
7440-48-4	Cobalt	mg/kg	11	10.8	29.70		mg/kg	10.78	95% Approximate Gamma	Gamma
7440-50-8	Copper	mg/kg	48	21.2	2,930	J	mg/kg	21.18	95% KM (BCA) UCL	Non-parametric
7439-89-6	Iron	mg/kg	24607	24889	39,800	J	mg/kg	24,889	95% Student's-t UCL	Normal
7439-92-1	Lead	mg/kg	36	23.2	1,860		mg/kg	23.2	95% Chebyshev (Mean, Sd) UCL	Non-parametric
7439-96-5	Manganese	mg/kg	578	679.1	2,580	J	mg/kg	679	95% H-UCL	Lognormal
7440-28-0	Thallium	mg/kg	2	2.6	6.70		mg/kg	2.57	95% KM (BCA) UCL	Non-parametric
7440-62-2	Vanadium	mg/kg	26	26.3	104		mg/kg	26.28	95% KM (BCA) UCL	Non-parametric

Notes:

1. Field duplicates were not averaged and presented as discreet samples. Laboratory duplicates were not included in the assessment.
   Non-detectes were included in the dataset and 95% UCL analysis was performed as 'With ND' in ProUCL.
2. The EPCs were calculated using the ProUCL (Version 4.00.02) and the EPCs were selected in accordance with the ProUCL Version 4.0 User Guide (USEPA, 2004)
   and the Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites (USEPA, 2002).
   Q - qualifier
   J = Estimated Value
   KM = Kaplan-Meier statistical method
3. Insufficient number of detects in the dataset to perform 95th UCL analysis in ProUCL. This typical means there was a single detect in the dataset for this compound.

TABLE 4B
SEAD-57 GROUNDWATER EXPOSURE POINT CONCENTRATION SUMMARY
SENECA ARMY DEPOT ACTIVITY

Scenario Timeframe:	Current/Future
Medium:	Groundwater
Exposure Medium:	Groundwater
Exposure Point:	Aquifer--Tap Water

CAS #	Chemical of Potential Concern	Units	Arithmetic Mean	Maximum Detected Concentration (mg/L)	Q	Reasonable Maximum Exposure (2)		
						Medium EPC Value (mg/L)	Medium EPC Statistic	Medium EPC Rationale
117-81-7	Bis(2-Ethylhexyl)phthalate	mg/L	2.0E-02	2.0E-02		2.0E-02	MDC	See note
7440-36-0	Antimony	mg/L	4.5E-02	4.5E-02	J	1.9E-02	97.5% KM (Chebyshev) UCL	Gamma
7440-38-2	Arsenic	mg/L	3.5E-03	4.1E-03	J	3.1E-03	95% KM Student-t [3]	Non-parametric
7440-48-4	Cobalt	mg/L	1.5E-02	1.5E-02	J	1.5E-02	MDC	See note
7440-28-0	Thallium	mg/L	5.3E-03	6.7E-03	J	4.1E-03	95% KM Student-t [3]	Non-parametric

Notes:

1. Laboratory duplicates were not included in the assessment.
   Concentrations for nondetects were assumed to be half the detection limits.
2. The maximum detected concentration was used as EPC for the RME scenario.
   As residential use of groundwater has been based on the assumption that a single private well can be placed anywhere in the contaminated plume, the MDC across several rounds of monitoring was used as the EPC for groundwater as a conservative step for both the RME scenario.

   EPC = Exposure Point Concentration
   MDC = Maximum Detected Concentration
   RME = Reasonable Maximum Exposure
   KM = Kaplan-Meier statistical method

3. Insufficient number of detects in dataset to get meaningful results from ProUCL. Warning message from ProUCL regarding dataset:
"This may not be adequate enough to compute meaningful and reliable test statistics and estimates."
"The number of detected data may not be adequate enough to perform GOF tests, bootstrap, and ROS methods."

TABLE 4C
SEAD-57 AMBIENT AIR EXPOSURE POINT CONCENTRATIONS FOR
PARK WORKERS, VISITORS, & RESIDENTS
SENECA ARMY DEPOT ACTIVITY

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Air
Exposure Point:	SEAD-57

Equation for Air EPC from Surface Soil (mg/m^3) = CSsurf x PM10 x CF

Variables:
CSsurf = Chemical Concentration in Surface Soil, from EPC data (mg/kg)
PM10 = Average Measured PM10 Concentration = 44 ug/m^3
CF = Conversion Factor = 1E-9 kg/ug

Analyte	Reasonable Maximum Exposure	
	EPC Data for Surface Soil (mg/kg)	**Calculated Air EPC Surface Soil** (mg/m^3)
Benzo(a)anthracene	2.2E-02	9.9E-10
Benzo(a)pyrene	3.0E-02	5.2E-10
Benzo(b)fluoranthene	2.1E-02	3.6E-10
Benzo(ghi)perylene	2.5E-02	4.3E-10
Benzo(k)fluoranthene	1.8E-02	3.1E-10
Chrysene	2.3E-02	4.0E-10
Dibenz(a,h)anthracene	1.7E-02	2.9E-10
Indeno(1,2,3-cd)pyrene	2.0E-02	3.3E-10
Phenanthrene	1.8E-02	3.0E-10
Phenol	1.1E-02	1.9E-10
Endosulfan II	3.1E-03	5.3E-11
Endrin aldehyde	3.8E-03	6.5E-11
Endrin ketone	4.0E-03	6.8E-11
Heptachlor epoxide	2.0E-03	3.4E-11
Aluminum	1.4E+04	2.5E-04
Antimony	8.2E-01	1.4E-08
Arsenic	5.0E+00	8.5E-08
Cadmium	2.3E+00	3.8E-08
Cobalt	1.1E+01	1.8E-07
Copper	2.1E+01	3.6E-07
Iron	2.5E+04	4.2E-04
Lead	2.3E+01	3.9E-07
Manganese	6.8E+02	1.2E-05
Thallium	2.6E+00	4.4E-08
Vanadium	2.6E+01	4.5E-07

TABLE 4E
SEAD-57 CALCULATION OF AIR CONCENTRATION IN SHOWER FROM VOLATILIZATION OF GROUNDWATER (DAILY)
SENECA ARMY DEPOT ACTIVITY

Scenario Timeframe:	Current/Future
Medium:	Groundwater
Exposure Medium:	Air
Exposure Point:	SEAD-57

Analyte	Residential Adult Time of Shower -T_{event} (min)	Residential Adult EPC Air (mg/m^3)	Residential Child Time of Shower -T_{event} (min)	Residential Child EPC Air (mg/m^3)	Flow Rate of Shower - (L/min)	Reasonable Maximum Exposure								
						EPC Groundwater (mg/l)	Flow Rate of in Shower-Fa (m^3/min)	Volume of Bathroom- (m^3)	Henry Laws Constant-H (m^3-atm/mol)	Asymptotic Conc.-Cinf (mg/m^3)	Rate Constant- (1/min)	Efficiency Release-E (unitless)	Efficiency of Release for TCE - E-TCE	Henry Laws Constant- H- (m^3-atm/mol)
Bis(2-Ethylhexyl)phthalate	35	1.02E-06	60	1.02E-06	19	2.00E-02	2.4	12	1.07E-07	1.12E-06	0.20	7.05E-06	0.6	0.0091
Antimony	35	1.36E-01	60	1.36E-01	19	1.87E-02	2.4	12	2.45E-02	1.48E-01	0.20	1.00E+00	0.6	0.0091
Arsenic	35	NA	60	NA	19	3.10E-03	2.4	12	NA					
Cobalt	35	NA	60	NA	19	1.48E-02	2.4	12	NA					
Thallium	35	NA	60	NA	19	4.06E-03	2.4	12	NA					

Concentration in Air (mg/m^3) = Cinf[1+(1/(kTs)(exp(-kTs)-1)]

Asymptotic Air Conc. - Cinf (mg/m^3) = |(E)(Fw)(EPCgw)|/Fa

Rate Constant - k (l/min) = Fa/Vb

Efficiency of Release - E (unitless) = (E-tce)(H)/(H-tce)

Variables:

CA = Chemical Concentration in Air (mg/m^3)
Ts = Time of Shower (minutes)
Fw = Flow Rate of Shower (L/min)
Fa = Flow Rate of Air in Shower (m^3/min)
Vb = Volume of Bathroom (m^3)

Assumptions:

EPC - Groundwater Data - RME
35 and 60 minutes for adult and child, respectively

2.4 (Average Air Flow)
12 (Average Bathroom Volume)

Note:
Henry's law constants not available for the inorganic COPC.

TABLE 5
SEAD-57 CALCULATION OF INTAKE AND RISK FROM THE INGESTION OF SOIL
REASONABLE MAXIMUM EXPOSURE (RME)
SENECA ARMY DEPOT ACTIVITY

Equation for Intake (mg/kg-day) = $\frac{EPC \times IR \times CF \times FI \times EF \times ED \times B}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):

EPC – Exposure Point Concentration in Soil, mg/kg
IR = Ingestion Rate
CF = Conversion Factor
FI = Fraction Ingested
B = Bioavailability
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Oral RfD	Carc. Slope Oral	Bioavailability	EPC Surface Soil	Park Worker				Construction Worker				Recreational Child Visitor			
					Intake (mg/kg-day)		Hazard Quotient	Cancer Risk	Intake (mg/kg-day)		Hazard Quotient	Cancer Risk	Intake (mg/kg-day)		Hazard Quotient	Cancer Risk
	(mg/kg-day)	(mg/kg-day)-1	(unitless)	(mg/kg)	(Nc)	(Car)			(Nc)	(Car)			(Nc)	(Car)		
Benzo(a)anthracene	N/A	7.3E-01	1	2.2E-02		5.48E-09		4E-09		1.03E-09		8E-10		8.19E-10		6E-10
Benzo(a)pyrene	N/A	7.3E+00	1	3.0E-02		7.43E-09		5E-08		1.40E-09		1E-08		1.11E-09		8E-09
Benzo(b)fluoranthene	N/A	7.3E-01	1	2.1E-02		5.17E-09		4E-09		9.76E-10		7E-10		7.73E-10		6E-10
Benzo(ghi)perylene	N/A	N/A	1	2.5E-02												
Benzo(k)fluoranthene	N/A	7.3E-02	1	1.8E-02		4.40E-09		3E-10		8.30E-10		6E-11		6.58E-10		5E-11
Chrysene	3.00E-04	7.3E-03	1	2.3E-02	1.61E-08	5.74E-09	5E-05	4E-11	7.57E-08	1.08E-09	3E-04	8E-12	1.20E-08	8.57E-10	4E-05	6E-12
Dibenz(a,h)anthracene	N/A	7.3E+00	1	1.7E-02		4.21E-09		3E-08		7.94E-10		6E-09		6.29E-10		5E-09
Indeno(1,2,3-cd)pyrene	N/A	7.3E-01	1	2.0E-02		4.79E-09		3E-09		9.03E-10		7E-10		7.15E-10		5E-10
Phenanthrene	N/A	N/A	1	1.8E-02												
Phenol	3.00E-01	3.0E-01	1	1.1E-02	7.72E-09	2.76E-09	3E-08	8E-10	3.64E-08	5.20E-10	1E-07	2E-10	5.76E-09	4.12E-10	2E-08	1E-10
Endosulfan II	6.00E-03	N/A	1	3.1E-03	2.12E-09		4E-07		1.00E-08		2E-06		1.59E-09		3E-07	
Endrin aldehyde	N/A	N/A	1	3.8E-03												
Endrin ketone	N/A	N/A	1	4.0E-03												
Heptachlor epoxide	1.30E-05	9.1E+00	1	2.0E-03	1.37E-09	4.89E-10	1E-04	4E-09	6.46E-09	9.23E-11	5E-04	8E-10	1.02E-09	7.31E-11	8E-05	7E-10
Aluminum	1.00E+00	N/A	1	1.4E+04	9.90E-03		1E-02		4.67E-02		5E-02		7.39E-03		7E-03	
Antimony	4.00E-04	N/A	1	8.2E-01	5.60E-07		1E-03		2.64E-06		7E-03		4.18E-07		1E-03	
Arsenic	3.00E-04	1.5E+00	1	5.0E+00	3.42E-06	1.22E-06	1E-02	2E-06	1.61E-05	2.31E-07	5E-02	3E-07	2.56E-06	1.83E-07	9E-03	3E-07
Cadmium	5.00E-04	N/A	1	2.3E+00	1.55E-06		3E-03		7.29E-06		1E-02		1.15E-06		2E-03	
Cobalt	3.00E-04	N/A	1	1.1E+01	7.38E-06		2E-02		3.48E-05		1E-01		5.51E-06		2E-02	
Copper	4.00E-02	N/A	1	2.1E+01	1.45E-05		4E-04		6.84E-05		2E-03		1.08E-05		3E-04	
Iron	3.00E-01	N/A	1	2.5E+04	1.70E-02		6E-02		8.04E-02		3E-01		1.27E-02		4E-02	
Lead	NA	N/A	1	2.3E+01												
Manganese	2.40E-02	N/A	1	6.8E+02	4.65E-04		2E-02		2.19E-03		9E-02		3.47E-04		1E-02	
Thallium	6.47E-04	N/A	1	2.6E+00	1.76E-06		3E-03		8.28E-06		1E-02		1.31E-06		2E-03	
Vanadium	1.00E-03	N/A	1	2.6E+01	1.80E-05		2E-02		8.49E-05		8E-02		1.34E-05		1E-02	
Total Hazard Quotient and Cancer Risk:							**1E-01**	**2E-06**			**7E-01**	**4E-07**			**1E-01**	**3E-07**

Assumptions for Park Worker		Assumptions for Construction Worker		Assumptions for Recreational Child Visitor	
CF –	1E-06 kg/mg	CF –	1E-06 kg/mg	CF –	1E-06 kg/mg
EPC –	EPC Surface Only	EPC –	EPC Surface and Subsurface	EPC –	EPC Surface Only
BW –	70 kg	BW –	70 kg	BW –	15 kg
IR –	100 mg/day	IR –	330 mg/day	IR –	200 mg/day
FI –	1 unitless	FI –	1 unitless	FI –	1 unitless
EF –	175 days/year	EF –	250 days/year	EF –	14 days/year
ED –	25 years	ED –	1 years	ED –	5 years
AT (Nc) –	9,125 days	AT (Nc) –	365 days	AT (Nc) –	1,825 days
AT (Car) –	25,550 days	AT (Car) –	25,550 days	AT (Car) –	25,550 days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.

TABLE 6
SEAD-57 CALCULATION OF INTAKE AND RISK FROM THE INTAKE OF GROUNDWATER
REASONABLE MAXIMUM EXPOSURE (RME)
SENECA ARMY DEPOT ACTIVITY

Equation for Intake (mg/kg-day) = $\frac{EPC \times IR \times EF \times ED}{B W \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):

EPC = Exposure Point Concentration in Groundwater (mg/L)
IR = Intake Rate
EF = Exposure Frequency
ED=Exposure Duration
BW=Bodyweight
AT=Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Oral RfD	Carc. Slope Oral	EPC Groundwater	Park Worker				Construction Worker				Recreational Vistor			
				Intake (mg/kg-day)		Hazard Quotient	Cancer Risk	Intake (mg/kg-day)		Hazard Quotient	Cancer Risk	Intake (mg/kg-day)		Hazard Quotient	Cancer Risk
	(mg/kg-day)	(mg/kg-day)-1	(mg/liter)	(Nc)	(Car)			(Nc)	(Car)			(Nc)	(Car)		
Bis(2-Ethylhexyl)phthalate	2.E-02	1.4E-02	2.00E-02	1.4E-04	4.9E-05	7E-03	7E-07	2.0E-04	2.8E-06	1E-02	4E-08	7.7E-05	5.5E-06	4E-03	8E-08
Antimony	4.E-04	N/A	1.87E-02	1.3E-04	4.6E-05	3E-01		1.8E-04	2.6E-06	5E-01		7.2E-05	5.1E-06	2E-01	
Arsenic	3.E-04	1.5E+00	3.10E-03	2.1E-05	7.6E-06	7E-02	1E-05	3.0E-05	4.3E-07	1E-01	7E-07	1.2E-05	8.5E-07	4E-02	1E-06
Cobalt	3.E-04	N/A	1.48E-02	1.0E-04	3.6E-05	3E-01		1.4E-04	2.1E-06	5E-01		5.7E-05	4.1E-06	2E-01	
Thallium	6.E-04	N/A	4.06E-03	2.8E-05	9.9E-06	4E-02		4.0E-05	5.7E-07	6E-02		1.6E-05	1.1E-06	2E-02	
Total Hazard Quotient and Cancer Risk:						**8E-01**	**1E-05**			**1E+00**	**7E-07**			**4E-01**	**1E-06**

Assumptions for Park Worker		Assumptions for Construction Worker		Assumptions for Recreational child Visitor	
BW =	70 kg	BW =	70 kg	BW =	15 kg
IR =	1 liters/day	IR =	1 liters/day	IR =	1.5 liters/day
EF =	175 days/year	EF =	250 days/year	EF =	14 days/year
ED =	25 years	ED =	1 years	ED =	5 years
AT (Nc) =	9,125 days	AT (Nc) =	365 days	AT (Nc) =	1,825 days
AT (Car) =	25,550 days	AT (Car) =	25,550 days	AT (Car) =	25,550 days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
N/A= Information not available.

TABLE 6A
SEAD-57 CALCULATION OF INTAKE AND RISK FROM THE INTAKE OF GROUNDWATER
REASONABLE MAXIMUM EXPOSURE (RME) EXCLUDING ESI SAMPLES
SENECA ARMY DEPOT ACTIVITY

Equation for Intake (mg/kg-day) = $\frac{EPC \times IR \times EF \times ED}{B W \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):

EPC = Exposure Point Concentration in Groundwater (mg/L) — ED=Exposure Duration
IR = Intake Rate — BW=Bodyweight
EF = Exposure Frequency — AT=Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Oral RfD	Carc. Slope Oral	EPC Groundwater	Park Worker				Construction Worker				Recreational Vistor			
				Intake (mg/kg-day)		Hazard Quotient	Cancer Risk	Intake (mg/kg-day)		Hazard Quotient	Cancer Risk	Intake (mg/kg-day)		Hazard Quotient	Cancer Risk
	(mg/kg-day)	(mg/kg-day)-1	(mg/liter)	(Nc)	(Car)			(Nc)	(Car)			(Nc)	(Car)		
Bis(2-Ethylhexyl)phthalate	2.E-02	1.4E-02	2.00E-02	1.4E-04	4.9E-05	7E-03	7E-07	2.0E-04	2.8E-06	1E-02	4E-08	7.7E-05	5.5E-06	4E-03	8E-08
Antimony	4.E-04	N/A	3.00E-03	2.1E-05	7.3E-06	5E-02		2.9E-05	4.2E-07	7E-02		1.2E-05	8.2E-07	3E-02	
Arsenic	3.E-04	1.5E+00	3.10E-03	2.1E-05	7.6E-06	7E-02	1E-05	3.0E-05	4.3E-07	1E-01	7E-07	1.2E-05	8.5E-07	4E-02	1E-06
Cobalt	3.E-04	N/A		0.0E+00	0.0E+00	0E+00		0.0E+00	0.0E+00	0E+00		0.0E+00	0.0E+00	0E+00	
Thallium	6.E-04	N/A	4.06E-03	2.8E-05	9.9E-06	4E-02		4.0E-05	5.7E-07	6E-02		1.6E-05	1.1E-06	2E-02	
Total Hazard Quotient and Cancer Risk:						**2E-01**	**1E-05**			**2E-01**	**7E-07**			**1E-01**	**1E-06**

Assumptions for Park Worker			Assumptions for Construction Worker			Assumptions for Recreational child Visitor		
BW =	70	kg	BW =	70	kg	BW =	15	kg
IR =	1	liters/day	IR =	1	liters/day	IR =	1.5	liters/day
EF =	175	days/year	EF =	250	days/year	EF =	14	days/year
ED =	25	years	ED =	1	years	ED =	5	years
AT (Nc) =	9,125	days	AT (Nc) =	365	days	AT (Nc) =	1,825	days
AT (Car) =	25,550	days	AT (Car) =	25,550	days	AT (Car) =	25,550	days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
N/A= Information not available.

TABLE 7
SEAD-57 CALCULATION OF ABSORBED DOSE AND RISK FROM DERMAL CONTACT TO SOIL
REASONABLE MAXIMUM EXPOSURE (RME)
SENECA army DEPOT ACTIVITY

Equation for Intake (mg/kg-day) = $\frac{EPC \times CF \times SA \times AF \times ABS \times EV \times EF \times ED}{B \quad W \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):

EPC = Chemical Concentration in Soil, mg/kg
CF = Conversion Factor
SA = Surface Area Contact
AF = Adherence Factor
ABS = Absorption Factor
EV = Event Frequency
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Dermal RfD	Carc. Slope Dermal	Absorption Fraction*	EPC Surface Soil	EPC from Total Soils	Park Worker				Construction Worker				Recreational Child Visitor			
						Absorbed Dose (mg/kg-day)		Hazard Quotient	Cancer Risk	Absorbed Dose (mg/kg-day)		Hazard Quotient	Cancer Risk	Absorbed Dose (mg/kg-day)		Hazard Quotient	Cancer Risk
	(mg/kg-day)	(mg/kg-day)-1	(unitless)	(mg/kg)	(mg/kg)	(Nc)	(Car)			(Nc)	(Car)			(Nc)	(Car)		
Benzo(a)anthracene	N/A	7.3E-01	1.3E-01	2.2E-02	2.2E-02		4.71E-09		3E-09		3.93E-10		3E-10		2.98E-10		2.18E-10
Benzo(a)pyrene	N/A	7.3E+00	1.3E-01	3.0E-02	2.9E-02		6.38E-09		5E-08		5.14E-10		4E-09		4.04E-10		2.95E-09
Benzo(b)fluoranthene	N/A	7.3E-01	1.3E-01	2.1E-02	2.1E-02		4.44E-09		3E-09		3.80E-10		3E-10		2.81E-10		2.05E-10
Benzo(ghi)perylene	N/A	N/A	1.3E-01	2.5E-02	2.5E-02												
Benzo(k)fluoranthene	N/A	7.3E-02	1.3E-01	1.8E-02	1.8E-02		3.78E-09		3E-10		3.24E-10		2E-11		2.39E-10		1.75E-11
Chrysene	3.00E-04	7.3E-03	1.3E-01	2.3E-02	2.1E-02	1.38E-08	4.92E-09	5E-05	4E-11	2.70E-08	3.86E-10	9E-05	3E-12	4.37E-09	3.12E-10	1.46E-05	2.28E-12
Dibenz(a,h)anthracene	N/A	7.3E+00	1.3E-01	1.7E-02	1.7E-02		3.61E-09		3E-08		3.10E-10		2E-09		2.29E-10		1.67E-09
Indeno(1,2,3-cd)pyrene	N/A	7.3E-01	1.3E-01	2.0E-02	2.0E-02		4.11E-09		3E-09		3.52E-10		3E-10		2.60E-10		1.90E-10
Phenanthrene	N/A	N/A	1.3E-01	1.8E-02	2.0E-02												
Phenol	3.00E-01	3.0E-01	2.5E-01	1.1E-02	1.6E-02	1.27E-08	4.55E-09	4E-08	1E-09	3.96E-08	5.65E-10	1E-07	2E-10	4.03E-09	2.88E-10	1.34E-08	8.65E-11
Endosulfan II	6.00E-03	N/A	4E-02	3.1E-03	3.1E-03	5.19E-10		9E-08		1.11E-09		2E-07		1.64E-10		2.74E-08	
Endrin aldehyde	N/A	N/A	4E-02	3.8E-03	3.8E-03												
Endrin ketone	N/A	N/A	4E-02	4.0E-03	4.0E-03												
Heptachlor epoxide	1.30E-05	9.1E+00	4E-02	2.0E-03	2.0E-03	3.35E-10	1.19E-10	3E-05	1E-09	7.17E-10	1.02E-11	6E-05	9E-11	1.06E-10	7.57E-12	8.15E-06	6.89E-11
Aluminum	1.00E+00	N/A	1E-03	1.4E+04	1.4E+04	6.53E-05		7E-05		1.39E-04		1E-04		2.07E-05		2.07E-05	
Antimony	6.00E-05	N/A	1E-03	8.2E-01	1.2E+00	3.69E-09		6E-05		1.16E-08		2E-04		1.17E-09		1.95E-05	
Arsenic	3.00E-04	1.5E+00	3E-02	5.0E+00	5.1E+00	6.78E-07	2.42E-07	2E-03	4E-07	1.48E-06	2.11E-08	5E-03	3E-08	2.15E-07	1.53E-08	7.16E-04	2.30E-08
Cadmium	5.00E-04	N/A	1E-03	2.3E+00	1.9E+00	1.02E-08		2E-05		1.85E-08		4E-05		3.23E-09		6.47E-06	
Cobalt	3.00E-04	N/A	1E-03	1.1E+01	1.1E+01	4.87E-08		2E-04		1.07E-07		4E-04		1.54E-08		5.15E-05	
Copper	4.00E-02	N/A	1E-03	2.1E+01	9.5E+01	9.57E-08		2E-06		9.20E-07		2E-05		3.03E-08		7.58E-07	
Iron	3.00E-01	N/A	1E-03	2.5E+04	2.5E+04	1.13E-04		4E-04		2.46E-04		8E-04		3.56E-05		1.19E-04	
Lead	N/A	N/A	1E-03	2.3E+01	1.0E+02												
Manganese	9.60E-04	N/A	1E-03	6.8E+02	6.2E+02	3.07E-06		3E-03		6.05E-06		6E-03		9.72E-07		1.01E-03	
Thallium	6.47E-04	N/A	1E-03	2.6E+00	2.3E+00	1.16E-08		2E-05		2.24E-08		3E-05		3.67E-09		5.68E-06	
Vanadium	2.60E-05	N/A	1E-03	2.6E+01	2.7E+01	1.19E-07		5E-03		2.63E-07		1E-02		3.76E-08		1.45E-03	
Total Hazard Quotient and Cancer Risk:								**6E-03**	**4E-07**			**1E-02**	**4E-08**			**2E-03**	**3E-08**

Assumptions for Park Worker		Assumptions for Construction Worker		Assumptions for Recreational Child Visitor	
CF	1E-06 kg/mg	CF	1E-06 kg/mg	CF	1E-06 kg/mg
CS	EPC Surface Only	EPC	EPC Surface and Subsurface	EPC	EPC Surface Only
BW	70 kg	BW	70 kg	BW	15 kg
SA	3,300 cm^2	SA	3,300 cm^2	SA	2,800 cm^2
AF	0.2 mg/cm^2-event	AF	0.3 mg/cm^2-event	AF	0.2 mg/cm^2-event
EV	1 event/day	EV	1 event/day	EV	1 event/day
EF	175 days/year	EF	250 days/year	EF	14 days/year
ED	25 years	ED	1 years	ED	5 years
AT (Nc)	9,125 days	AT (Nc)	365 days	AT (Nc)	1,825 days
AT (Car)	25,550 days	AT (Car)	25,550 days	AT (Car)	25,550 days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.
* Absorption factors from Exhibit 3-4 of USEPA (2004) Supplemental Guidance for Dermal Risk Assessment, Part E of Risk Assessment Guidance for Superfund, Human Health Evaluation Manual (Volume I).
Absorption factor for VOC was assumed to be 0.01 and metals not presented in the EPA (2004) document, assumed to be 0.001 in accordance with the USEPA Region 4 (2000)
Supplemental Guidance to RAGS: Region 4 Bulletins, Human Health Risk Assessment Bulletins (http://www.epa.gov/region4/waste/ots/healtbul.htm).
Absorption factor for pesticides was assumed to be 0.037 in accordance with the average absorption factor of chlordane (0.03), DDT (0.04), and lindane (0.04) in accordance with USEPA Region 4 (2000).

TABLE 8
SEAD-57 CALCULATION OF ABSORBED DOSE AND RISK FROM DERMAL CONTACT TO GROUNDWATER
REASONABLE MAXIMUM EXPOSURE (RME)
SENECA ARMY DEPOT ACTIVITY

Equation for Dermal (mg/kg-day) = $\frac{DA \times SA \times EF \times ED \times EV}{B \times W \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):

DA = Absorbed Dose per Event, mg/cm^2-event
SA = Surface Area Contact
EF = Exposure Frequency
EV = Event Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Absorbed Dose per Event (DA):

For inorgani DA = Kp x EPC x t_{event} x C

For organics If $t_{event} <= t^*$, then: $DA_{event} = 2\ FA \times K_p \times EPC \times C\ ((6\ t_{event} \times t_{event}) / p)^{1/2}$

if $t_{event} > t^*$, then: $DA_{event} = FA \times K_p \times EPC \times C\ [(t_{event} / 1 + B) + 2\ t_{event} ((1 + 3\ B + 3\ B^2) / (1 + B)^2)]$

K_p = Permeability Coefficient, cm/hr
EPC = EPC in Groundwater, mg/L
C = Conversion Factor, 10^{-3} L/cm^3

B = Dimensionless ratio of the permeability coefficient of a compound through the stratum corneum relative to its permeability coefficient across the viable epidermis (ve) (dimensionless)
FA = Fraction absorbed water (dimensionless)

$B = Kp\ (MW)^{1/2} / 2.6$

t_{event} is Lag Time per event (hr/event) = $0.105 \times 10^{(0.0056 MW)}$

t* is time to reach steady-state (hr)

t_{event} = duration of event, hr/event

If B<= 0.6, then $t^* = 2.4\ t_{event}$

If B > 0.6, then $t^* = 6 t_{event} (b - SQRT(b^2 - c^2))$

$b = ((2(1+B)^2)/p) - c$

$c = (1+3B+3B^2)/3(1+B)$

Equation for Hazard Quotient = Chronic Daily Intake (Nc) / Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Dermal RfD (mg/kg-day)	Carc. Slope Dermal (mg/kg-day)-1	Permeability Coefficient K_p (cm/hr)	t_{event} (hr/event)	Fraction Absorbed Water	B	t* (hour)	EPC Ground Water (mg/L)	Absorbed Dose/Event (mg/cm^2-event)	Park Worker Intake (mg/kg-day) (Nc)	Park Worker Intake (mg/kg-day) (Car)	Park Worker Hazard Quotient	Park Worker Cancer Risk	Construction Worker Intake (mg/kg-day) (Nc)	Construction Worker Intake (mg/kg-day) (Car)	Construction Worker Hazard Quotient	Construction Worker Cancer Risk	Recreational Child Visitor Intake (mg/kg-day) (Nc)	Recreational Child Visitor Intake (mg/kg-day) (Car)	Recreational Child Visitor Hazard Quotient	Recreational Child Visitor Cancer Risk
Bis(2-Ethylhexyl)phthalate	2.E-02	1.4E-02	6.60E-01	1.1.E-01	1.00E+00	0.0.E+00	2.5.E-01	2.E-02	8.4.E-06												
Antimony	6.E-05	N/A	1.00E-03	1.1.E-01	1.00E+00	0.0.E+00	2.5.E-01	2.E-02	1.2.E-08					1E-07		2E-03					
Arsenic	3.E-04	1.5E+00	1.00E-03	8.9.E-01	1.00E+00	5.0.E-03	2.1.E+00	3.E-03	5.7.E-09					6E-08	8E-10	2E-04	1E-09				
Cobalt	3.E-04	N/A	1.00E-03	1.1.E-01	1.00E+00	0.0.E+00	2.5.E-01	1.E-02	9.4.E-09												
Thallium	6.E-04	N/A	1.00E-03	1.1.E-01	1.00E+00	0.0.E+00	2.5.E-01	4.E-03	2.6.E-09					3E-08		4E-05					
Total Hazard Quotient and Cancer Risk:																**2E-03**	**1E-09**				

Assumptions for Construction Worker

BW =	70	kg
SA =	2,490	cm2
EV=	1	event/day
EF =	100	days/year
ED =	1	years
t_{event} =	0.5	hr/event
AT (Nc) =	365	days
AT (Car) =	25,550	days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA– Information not available.
Kp value from Exhibit B1 or B-2 of "Supplemental Guidance for Dermal Risk Assessment", Part E of Risk Assessment Guidance for Superfund, Human Health Evaluation Manual (Volume 1), August 16, 2004. For chemicals that did not have a Kp value listed in Exibit B-1 or B-2, Kp was calculated using:
Kp = 10^(-2.80+0.66(logKow)-0.0056(MW))

TABLE 8A
SEAD-57 CALCULATION OF ABSORBED DOSE AND RISK FROM DERMAL CONTACT TO GROUNDWATER
REASONABLE MAXIMUM EXPOSURE (RME) EXCLUDING ESI SAMPLES
SENECA ARMY DEPOT ACTIVITY

Equation for Dermal (mg/kg-day) = $\frac{DA \times SA \times EF \times ED \times EV}{B\ W \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):

DA = Absorbed Dose per Event, mg/cm^2-event
SA = Surface Area Contact
EF = Exposure Frequency
EV = Event Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Absorbed Dose per Event (DA): K_p = Permeability Coefficient, cm/hr
EPC = EPC in Groundwater, mg/L
For inorgani DA = Kp x EPC x t_{event} x C C = Conversion Factor, 10^{-3} L/cm^3
For organics If $t_{event} <= t^*$, then: $DA_{event} = 2\ FA \times K_p \times EPC \times C \ ((6\ t_{event} \times t_{event}) / p)^{1/2}$
if $t_{event} > t^*$, then: $DA_{event} = FA \times K_p \times EPC \times C \ [(t_{event} / 1 + B) + 2\ t_{event} \ ((1 + 3\ B + 3\ B^2) / (1 + B)^2)]$

B = Dimensionless ratio of the permeability coefficient of a compound through the stratum corneum relative to its permeability coefficient across the viable epidermis (ve) (dimensionless)
FA = Fraction absorbed water (dimensionless)

$B = Kp\ (MW)^{1/2} / 2.6$
If B <= 0.6, then $t^* = 2.4\ t_{event}$
t_{event} is Lag Time per event (hr/event) = $0.105 \times 10^{(0.0056MW)}$
If B > 0.6, then $t^* = 6t_{event}\ (b - SQRT(b^2 - c^2))$
t* is time to reach steady-state (hr)
$b = ((2(1+B)^2)/p) - c$
t_{event} = duration of event, hr/event
$c = (1+3B+3B^2)/3(1+B)$

Equation for Hazard Quotient = Chronic Daily Intake (Nc) / Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Dermal RfD (mg/kg-day)	Carc. Slope Dermal (mg/kg-day)-1	Permeability Coefficient Kp (cm/hr)	t_{event} (hr/event)	Fraction Absorbed Water	B	t* (hour)	EPC Ground Water (mg/L)	Absorbed Dose/Event (mg/cm^2-event)	Park Worker Intake (mg/kg-day) (Nc)	Park Worker Intake (mg/kg-day) (Car)	Park Worker Hazard Quotient	Park Worker Cancer Risk	Construction Worker Intake (mg/kg-day) (Nc)	Construction Worker Intake (mg/kg-day) (Car)	Construction Worker Hazard Quotient	Construction Worker Cancer Risk	Recreational Child Visitor Intake (mg/kg-day) (Nc)	Recreational Child Visitor Intake (mg/kg-day) (Car)	Recreational Child Visitor Hazard Quotient	Recreational Child Visitor Cancer Risk
Bis(2-Ethylhexyl)phthalate	2.E-02	1.4E-02	6.60E-01	1.1.E-01	1.00E+00	0.0.E+00	2.5.E-01	2.E-02	8.4.E-06												
Antimony	6.E-05	N/A	1.00E-03	1.1.E-01	1.00E+00	0.0.E+00	2.5.E-01	2.E-02	1.2.E-08					1E-07		2E-03					
Arsenic	3.E-04	1.5E+00	1.00E-03	8.9.E-01	1.00E+00	5.0.E-03	2.1.E+00	3.E-03	5.7.E-09					6E-08	8E-10	2E-04	1E-09				
Cobalt	3.E-04	N/A	1.00E-03	1.1.E-01	1.00E+00	0.0.E+00	2.5.E-01	1.E-02	9.4.E-09												
Thallium	6.E-04	N/A	1.00E-03	1.1.E-01	1.00E+00	0.0.E+00	2.5.E-01	4.E-03	2.6.E-09					3E-08		4E-05					
Total Hazard Quotient and Cancer Risk:																**2E-03**	**1E-09**				

Assumptions for Construction Worker

BW =	70	kg
SA =	2,490	cm2
EV=	1	event/day
EF =	100	days/year
ED =	1	years
t_{event} =	0.5	hr/event
AT (Nc) =	365	days
AT (Car) =	25,550	days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.
Kp value from Exhibit B1 or B-2 of "Supplemental Guidance for Dermal Risk Assessment", Part E of Risk Assessment Guidance for Superfund, Human Health Evaluation Manual (Volume 1), August 16, 2004. For chemicals that did not have a Kp value listed in Exibit B-1 or B-2, Kp was calculated using:
Kp = 10^(-2.80+0.66(logKow)-0.0056(MW))

TABLE 9
CALCULATION OF INTAKE AND RISK FROM INHALATION OF GROUNDWATER (WHILE SHOWERING)
REASONABLE MAXIMUM EXPOSURE (RME) SEAD-57
SENECA ARMY DEPOT ACTIVITY

Equation for Intake (mg/kg-day) = $\frac{EPC \times IR \times t_{event} \times EV \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):

EPC =Exposure Point Concentration in Air (mg/m^3)
t_{event} = Event Duration
IR = Inhalation Rate
EF = Exposure Frequency
ED=Exposure Duration
EV = Event Frequency
BW=Body Weight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Inhalation RfD (mg/kg-day)	Carc. Slope Inhalation (mg/kg-day)-1	EPC* Air Adult (mg/m^3)	EPC* Air Child (mg/m^3)	Resident Adult				Resident Child				Resident
					Intake (mg/kg-day)		Hazard Quotient	Contribution to Lifetime Cancer Risk	Intake (mg/kg-day)		Hazard Quotient	Contribution to Lifetime Cancer Risk	Total Lifetime Cancer Risk
					(Nc)	(Car)			(Nc)	(Car)			
Bis(2-Ethylhexyl)phthalate	N/A	N/A	1.02E-06	1.02E-06									
Antimony	N/A	N/A	1.36E-01	1.36E-01									
Arsenic	N/A	4.30E-03	NA	NA									
Cobalt	1.71E-06	9.00E-03	NA	NA									
Thallium	N/A	N/A	NA	NA									
Total Hazard Quotient and Cancer Risk:													

Assumptions for Future Resident (Adult)		Assumptions for Future Resident (Child)	
BW =	70 kg	BW =	15 kg
IR =	1.0 m^3/hr	IR =	1.0 m^3/hr
t_{event} =	0.58 hr/event	t_{event} =	1.0 hr/event
EV =	1 event/day	EV =	1 event/day
EF =	350 days/year	EF =	350 days/year
ED =	24 years	ED =	6 years
AT (Nc) =	8,760 days	AT (Nc) =	2,190 days
AT (Car) =	25,550 days	AT (Car) =	25,550 days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.
* EPC air is the concentration of chemical available for inhalation after accounting for partitioning between the air and water in the shower.

TABLE 10
SEAD-57 CALCULATION OF INTAKE AND RISK FROM INHALATION OF DUST IN AMBIENT AIR
REASONABLE MAXIMUM EXPOSURE (RME)
SENECA army DEPOT ACTIVITY

Equation for Intake (mg/kg-day) = $\frac{EPC \times IR \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):

EPC = EPC in Air, mg/m3
IR = Inhalation Rate
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Inhalation RfD	Carc. Slope Inhalation	Air EPC from Surface Soil	Air EPC from Total Soils	Park Worker				Construction Worker				Recreational Child Visitor			
					Intake (mg/kg-day)		Hazard Quotient	Cancer Risk	Intake (mg/kg-day)		Hazard Quotient	Cancer Risk	Intake (mg/kg-day)		Hazard Quotient	Cancer Risk
	(mg/kg-day)	(mg/kg-day)-1	(mg/m3)	(mg/m3)	(Nc)	(Car)			(Nc)	(Car)			(Nc)	(Car)		
Benzo(a)anthracene	N/A	N/A	9.9E-10	9.6E-10												
Benzo(a)pyrene	N/A	3.85E+00	5.2E-10	1.3E-09		1.01E-11		4E-11		1.83E-12		7E-12		8.21E-13		3E-12
Benzo(b)fluoranthene	N/A	3.85E-01	3.6E-10	9.3E-10		7.04E-12		3E-12		1.36E-12		5E-13		5.71E-13		2E-13
Benzo(ghi)perylene	N/A	N/A	4.3E-10	1.1E-09												
Benzo(k)fluoranthene	N/A	3.85E-01	3.1E-10	7.9E-10		5.99E-12		2E-12		1.16E-12		4E-13		4.86E-13		2E-13
Chrysene	N/A	3.85E-02	4.0E-10	9.5E-10		7.80E-12		3E-13		1.38E-12		5E-14		6.33E-13		2E-14
Dibenz(a,h)anthracene	N/A	4.20E+00	2.9E-10	7.6E-10		5.73E-12		2E-11		1.10E-12		5E-12		4.65E-13		2E-12
Indeno(1,2,3-cd)pyrene	N/A	3.85E-01	3.3E-10	8.6E-10		6.51E-12		3E-12		1.26E-12		5E-13		5.29E-13		2E-13
Phenanthrene	N/A	N/A	3.0E-10	8.9E-10												
Phenol	5.71E-02	N/A	1.9E-10	7.2E-10	1.05E-11		2E-10		7.34E-11		1E-09		4.26E-12		7E-11	
Endosulfan II	N/A	N/A	5.3E-11	1.4E-10												
Endrin aldehyde	N/A	N/A	6.5E-11	1.7E-10												
Endrin ketone	N/A	N/A	6.8E-11	1.8E-10												
Heptachlor epoxide	N/A	9.10E+00	3.4E-11	8.8E-11		6.65E-13		6E-12		1.28E-13		1E-12		5.40E-14		5E-13
Aluminum	1.43E-03	N/A	2.5E-04	6.3E-04	1.35E-05		9E-03		6.46E-05		5E-02		5.46E-06		4E-03	
Antimony	N/A	N/A	1.4E-08	5.3E-08												
Arsenic	N/A	1.51E+01	8.5E-08	2.2E-07		1.66E-09		3E-08		3.26E-10		5E-09		1.35E-10		2E-09
Cadmium	2.86E-06	6.30E+00	3.8E-08	8.4E-08	2.10E-09	7.51E-10	7E-04	5E-09	8.59E-09	1.23E-10	3E-03	8E-10	8.54E-10	6.10E-11	3E-04	4E-10
Cobalt	1.71E-06	3.15E+01	1.8E-07	4.9E-07	1.00E-08	3.59E-09	6E-03	1E-07	4.95E-08	7.07E-10	3E-02	2E-08	4.08E-09	2.91E-10	2E-03	9E-09
Copper	N/A	N/A	3.6E-07	4.2E-06												
Iron	N/A	N/A	4.2E-04	1.1E-03												
Lead	N/A	N/A	3.9E-07	4.6E-06												
Manganese	1.43E-05	N/A	1.2E-05	2.8E-05	6.33E-07		4E-02		2.81E-06		2E-01		2.57E-07		2E-02	
Thallium	N/A	N/A	4.4E-08	1.0E-07												
Vanadium	N/A	N/A	4.5E-07	1.2E-06												
Total Hazard Quotient and Cancer Risk:							**6E-02**	**1E-07**			**3E-01**	**3E-08**			**2E-02**	**1E-08**

Assumptions for Park Worker		Assumptions for Construction Worker		Assumptions for Recreational Child Visitor	
CA =	EPC Surface Only	CA =	EPC Surface and Sub-Surface	CA =	EPC Surface Only
BW =	70 kg	BW =	70 kg	BW =	15 kg
IR =	8 m3/day	IR =	10.4 m3/day	IR =	8.7 m3/day
EF =	175 days/year	EF =	250 days/year	EF =	14 days/year
ED =	25 years	ED =	1 year	ED =	5 years
AT (Nc) =	9,125 days	AT (Nc) =	365 days	AT (Nc) =	1,825 days
AT (Car) =	25,550 days	AT (Car) =	25,550 days	AT (Car) =	25,550 days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.

TABLE 11
SEAD-57 CALCULATION OF TOTAL NONCARCINOGENIC AND CARCINOGENIC RISKS
REASONABLE MAXIMUM EXPOSURE (RME)
SENECA ARMY DEPOT ACTIVITY

RECEPTOR	EXPOSURE ROUTE	REASONABLE MAXIMUM EXPOSURE (RME)			
		HAZARD INDEX		CANCER RISK	
		Hazard Index	Percent	Cancer Risk	Percent
PARK WORKER	Inhalation of Dust in Ambient Air	6E-02	6%	1E-07	1%
	Ingestion of Soil	1E-01	15%	2E-06	13%
	Intake of Groundwater	8E-01	78%	1E-05	83%
	Dermal Contact to Soil	6E-03	1%	4E-07	3%
	Dermal Contact to Groundwater	NA		NA	
	TOTAL RECEPTOR RISK (Nc & Car)	*1E+00*	100%	*1E-05*	100%
CONSTRUCTION WORKER	Inhalation of Dust in Ambient Air	3E-01	13%	3E-08	2%
	Ingestion of Soil	7E-01	33%	4E-07	33%
	Intake of Groundwater	1E+00	53%	7E-07	61%
	Dermal Contact to Soil	1E-02	1%	4E-08	3%
	Dermal Contact to Groundwater	2E-03	0%	1E-09	0%
	TOTAL RECEPTOR RISK (Nc & Car)	*2.1E+00*	100%	*1E-06*	100%
RECREATIONAL CHILD VISITOR	Inhalation of Dust in Ambient Air	2E-02	4%	1E-08	1%
	Ingestion of Soil	1E-01	19%	3E-07	17%
	Intake of Groundwater	4E-01	76%	1E-06	80%
	Dermal Contact to Soil	2E-03	0%	3E-08	2%
	Dermal Contact to Groundwater	NA		NA	
	TOTAL RECEPTOR RISK (Nc & Car)	*6E-01*	100%	*2E-06*	100%
RESIDENT (ADULT)	Inhalation of Dust in Ambient Air	3E-01	8%	7E-07	1%
	Inhalation of Groundwater	NA		NA	
	Ingestion of Soil	3E-01	7%	4E-06	6%
	Intake of Groundwater	3E+00	79%	5E-05	70%
	Dermal Contact to Soil	8E-03	0%	5E-07	1%
	Dermal Contact to Groundwater	2E-01	6%	2E-05	23%
	TOTAL RECEPTOR RISK (Nc & Car)	*4E+00*	100%	*7E-05*	100%
RESIDENT (CHILD)	Inhalation of Dust in Ambient Air	6E-01	4%	3E-07	1%
	Inhalation of Groundwater	NA		NA	
	Ingestion of Soil	3E+00	19%	9E-06	15%
	Intake of Groundwater	1E+01	74%	4E-05	71%
	Dermal Contact to Soil	5E-02	0%	9E-07	1%
	Dermal Contact to Groundwater	4E-01	3%	6E-06	11%
	TOTAL RECEPTOR RISK (Nc & Car)	*1E+01*	100%	*6E-05*	100%
RESIDENT (TOTAL)	Inhalation of Dust in Ambient Air			1E-06	1%
	Inhalation of Groundwater			NA	
	Ingestion of Soil			1E-05	10%
	Intake Groundwater			9E-05	71%
	Dermal Contact to Soil			1E-06	1%
	Dermal Contact to Groundwater			2E-05	17%
	TOTAL RECEPTOR CANCER RISK			*1E-04*	100%

NA - Not Applicable

TABLE 12
SEAD-57 RESIDENT ADULT LEAD BLOOD CALCULATION
SENECA ARMY DEPOT ACTIVITY

Calculations of Blood Lead Concentrations (PbBs)
U.S. EPA Technical Review Workgroup for Lead, Adult Lead Committee
Version date 6/21/09

Variable	Description of Variable	Units	GSDi and PbBo from Analysis of NHANES 1999-2004	GSDi and PbBo from Analysis of NHANES III (Phases 1&2)
PbS	Soil lead concentration	ug/g or ppm	103.2	103.2
$R_{fetal/maternal}$	Fetal/maternal PbB ratio	--	0.9	0.9
BKSF	Biokinetic Slope Factor	ug/dL per ug/day	0.4	0.4
GSD_i	Geometric standard deviation PbB	--	1.8	2.1
PbB_0	Baseline PbB	ug/dL	1.0	1.5
IR_S	Soil ingestion rate (including soil-derived indoor dust)	g/day	0.050	0.050
IR_{S-D}	Total ingestion rate of outdoor soil and indoor dust	g/day	--	--
W_S	Weighting factor; fraction of IR_{S+D} ingested as outdoor soil	--	--	--
K_{SD}	Mass fraction of soil in dust	--	--	--
$AF_{S,D}$	Absorption fraction (same for soil and dust)	--	0.12	0.12
$EF_{S,D}$	Exposure frequency (same for soil and dust)	days/yr	219	219
$AT_{S,D}$	Averaging time (same for soil and dust)	days/yr	365	365
PbB_{adult}	**PbB of adult worker, geometric mean**	**ug/dL**	**1.1**	**1.6**
$PbB_{fetal,0.95}$	95th percentile PbB among fetuses of adult workers	ug/dL	2.7	5.0
PbB_t	Target PbB level of concern (e.g., 10 ug/dL)	ug/dL	10.0	10.0
$P(PbB_{fetal} > PbB_t)$	**Probability that fetal PbB > PbB_t, assuming lognormal distribution**	**%**	**0.0%**	**0.5%**

Source: U.S. EPA (1996). Recommendations of the Technical Review Workgroup for Lead for an Interim Approach to Assessing Risks Associated with Adult Exposures to Lead in Soil

Age	Soil (µg Pb/g)	House Dust (µg Pb/g)
.5-1	23.200	26.240
1-2	23.200	26.240
2-3	23.200	26.240
3-4	23.200	26.240
4-5	23.200	26.240
5-6	23.200	26.240
6-7	23.200	26.240

****** Alternate Intake ******

Age	Alternate (µg Pb/day)
.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

****** Maternal Contribution: Infant Model ******

Maternal Blood Concentration: 1.000 µg Pb/dL

****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:
****

Year	Air (µg/day)	Diet (µg/day)	Alternate (µg/day)	Water (µg/day)
.5-1	0.021	1.103	0.000	0.391
1-2	0.034	0.956	0.000	0.975
2-3	0.062	1.041	0.000	1.017
3-4	0.067	1.001	0.000	1.040
4-5	0.067	0.960	0.000	1.084
5-6	0.093	1.011	0.000	1.144
6-7	0.093	1.096	0.000	1.165

Year	Soil+Dust (µg/day)	Total (µg/day)	Blood (µg/dL)
.5-1	0.619	2.134	1.2
1-2	0.982	2.947	1.2
2-3	0.985	3.105	1.2
3-4	0.988	3.096	1.1
4-5	0.735	2.846	1.0
5-6	0.662	2.911	0.9
6-7	0.626	2.980	0.8

Attachment C

SEAD-002-R-01 – EOD-2

TABLE 1
SEAD-002-R-01 (EOD-2) SOIL SAMPLE RESULTS
SENECA ARMY DEPOT ACTIVITY

SITE LOCATION								EOD2	EOD2	EOD2	EOD2	EOD2	EOD2
LOCATION ID								EOD2-A1	EOD2-A2	EOD2-A3	EOD2-A4	EOD2-B1	EOD2-B2
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								002R011001	002R011002	002R011003	002R011004	002R011008	002R011007
TOP OF SAMPLE								0	0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								12/11/2006	12/11/2006	12/11/2006	12/11/2006	12/11/2006	12/11/2006
QC CODE								SA	SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA
Parameter	**Units**	**Maximum Concentration**	**Frequency of Detection**	**NYSDEC Unrestricted Use Value (1)**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Volatile Organic Compounds													
1,1,1-Trichloroethane	UG/KG	0	0%	680	0	0	12	7 U	7.8 U	8 U	7.1 U	7.7 U	7.5 U
1,1,2,2-Tetrachloroethane	UG/KG	0	0%		0	0	12	7 U	7.8 U	8 U	7.1 U	7.7 U	7.5 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/KG	0	0%		0	0	12	7 U	7.8 U	8 U	7.1 U	7.7 U	7.5 U
1,1,2-Trichloroethane	UG/KG	0	0%		0	0	12	7 U	7.8 U	8 U	7.1 U	7.7 U	7.5 U
1,1-Dichloroethane	UG/KG	0	0%	270	0	0	12	7 U	7.8 U	8 U	7.1 U	7.7 U	7.5 U
1,1-Dichloroethene	UG/KG	0	0%	330	0	0	12	7 U	7.8 U	8 U	7.1 U	7.7 U	7.5 U
1,2,4-Trichlorobenzene	UG/KG	0	0%		0	0	12	7 U	7.8 U	8 U	7.1 U	7.7 U	7.5 U
1,2-Dibromo-3-chloropropane	UG/KG	0	0%		0	0	12	7 UJ	7.8 UJ	8 UJ	7.1 UJ	7.7 UJ	7.5 UJ
1,2-Dibromoethane	UG/KG	0	0%		0	0	12	7 U	7.8 U	8 U	7.1 U	7.7 U	7.5 U
1,2-Dichlorobenzene	UG/KG	0	0%	1100	0	0	12	7 U	7.8 U	8 U	7.1 U	7.7 U	7.5 U
1,2-Dichloroethane	UG/KG	0	0%	20	0	0	12	7 U	7.8 U	8 U	7.1 U	7.7 U	7.5 U
1,2-Dichloropropane	UG/KG	0	0%		0	0	12	7 U	7.8 U	8 U	7.1 U	7.7 U	7.5 U
1,3-Dichlorobenzene	UG/KG	0	0%	2400	0	0	12	7 U	7.8 U	8 U	7.1 U	7.7 U	7.5 U
1,4-Dichlorobenzene	UG/KG	0	0%	1800	0	0	12	7 U	7.8 U	8 U	7.1 U	7.7 U	7.5 U
Acetone	UG/KG	100	83%	50	8	10	12	**68**	31.2 U	32 U	**56**	**61**	**98**
Benzene	UG/KG	0	0%	60	0	0	12	7 U	7.8 U	8 U	7.1 U	7.7 U	7.5 U
Bromodichloromethane	UG/KG	0	0%		0	0	12	7 U	7.8 U	8 U	7.1 U	7.7 U	7.5 U
Bromoform	UG/KG	0	0%		0	0	12	7 U	7.8 U	8 U	7.1 U	7.7 U	7.5 U
Carbon disulfide	UG/KG	2.4	8%		0	1	12	14 U	16 U	16 U	14 U	15 U	15 U
Carbon tetrachloride	UG/KG	0	0%	760	0	0	12	7 U	7.8 U	8 U	7.1 U	7.7 U	7.5 U
Chlorobenzene	UG/KG	0	0%	1100	0	0	12	7 U	7.8 U	8 U	7.1 U	7.7 U	7.5 U
Chlorodibromomethane	UG/KG	0	0%		0	0	12	7 U	7.8 U	8 U	7.1 U	7.7 U	7.5 U
Chloroethane	UG/KG	0	0%		0	0	12	14 U	16 U	16 U	14 U	15 U	15 U
Chloroform	UG/KG	0	0%	370	0	0	12	7 U	7.8 U	8 U	7.1 U	7.7 U	7.5 U
Cis-1,2-Dichloroethene	UG/KG	0	0%	250	0	0	12	7 U	7.8 U	8 U	7.1 U	7.7 U	7.5 U
Cis-1,3-Dichloropropene	UG/KG	0	0%		0	0	12	7 U	7.8 U	8 U	7.1 U	7.7 U	7.5 U
Cyclohexane	UG/KG	0.88	8%		0	1	12	7 UJ	7.8 UJ	8 UJ	7.1 UJ	7.7 UJ	7.5 UJ
Dichlorodifluoromethane	UG/KG	0	0%		0	0	12	7 U	7.8 U	8 U	7.1 U	7.7 U	7.5 U
Ethyl benzene	UG/KG	0	0%	1000	0	0	12	7 U	7.8 U	8 U	7.1 U	7.7 U	7.5 U
Isopropylbenzene	UG/KG	0	0%		0	0	12	7 U	7.8 U	8 U	7.1 U	7.7 U	7.5 U
Meta Para Xylene	UG/KG	0	0%		0	0	12	7 U	7.8 U	8 U	7.1 U	7.7 U	7.5 U
Methyl Acetate	UG/KG	2.8	8%		0	1	12	14 UJ	16 UJ	16 UJ	14 UJ	15 UJ	15 UJ
Methyl Tertbutyl Ether	UG/KG	0	0%	930	0	0	12	7 U	7.8 U	8 U	7.1 U	7.7 U	7.5 U
Methyl bromide	UG/KG	0	0%		0	0	12	7 U	7.8 U	8 U	7.1 U	7.7 U	7.5 U
Methyl butyl ketone	UG/KG	0	0%		0	0	12	14 UJ	16 UJ	16 UJ	14 UJ	15 UJ	15 UJ
Methyl chloride	UG/KG	0	0%		0	0	12	7 U	7.8 U	8 U	7.1 U	7.7 U	7.5 U
Methyl cyclohexane	UG/KG	1.1	8%		0	1	12	7 UJ	7.8 UJ	8 UJ	7.1 UJ	7.7 UJ	7.5 UJ
Methyl ethyl ketone	UG/KG	15	92%	120	0	11	12	3 J	2.8 J	16 UJ	6.2 J	3.9 J	7.6 J
Methyl isobutyl ketone	UG/KG	0	0%		0	0	12	14 UJ	16 UJ	16 UJ	14 UJ	15 UJ	15 UJ
Methylene chloride	UG/KG	2.3	100%	50	0	12	12	1.4 J	2 J	2.3 J	1.8 J	1.7 J	2 J
Ortho Xylene	UG/KG	0	0%		0	0	12	7 U	7.8 U	8 U	7.1 U	7.7 U	7.5 U
Styrene	UG/KG	0	0%		0	0	12	7 U	7.8 U	8 U	7.1 U	7.7 U	7.5 U
Tetrachloroethene	UG/KG	0	0%	1300	0	0	12	7 U	7.8 U	8 U	7.1 U	7.7 U	7.5 U
Toluene	UG/KG	1.4	25%	700	0	3	12	1.4 J	7.8 U	8 U	7.1 U	7.7 U	0.68 J
Trans-1,2-Dichloroethene	UG/KG	0	0%	190	0	0	12	7 U	7.8 U	8 U	7.1 U	7.7 U	7.5 U
Trans-1,3-Dichloropropene	UG/KG	0	0%		0	0	12	7 U	7.8 U	8 U	7.1 U	7.7 U	7.5 U
Trichloroethene	UG/KG	0	0%	470	0	0	12	7 U	7.8 U	8 U	7.1 U	7.7 U	7.5 U
Trichlorofluoromethane	UG/KG	0	0%		0	0	12	7 U	7.8 U	8 U	7.1 U	7.7 U	7.5 U
Vinyl chloride	UG/KG	0	0%	20	0	0	12	7 U	7.8 U	8 U	7.1 U	7.7 U	7.5 U
Semivolatile Organic Compounds													
1,1'-Biphenyl	UG/KG	0	0%		0	0	12	470 U	460 U	470 U	450 U	480 U	460 U
2,4,5-Trichlorophenol	UG/KG	0	0%		0	0	12	470 U	460 U	470 U	450 U	480 U	460 U
2,4,6-Trichlorophenol	UG/KG	0	0%		0	0	12	470 U	460 U	470 U	450 U	480 U	460 U
2,4-Dichlorophenol	UG/KG	0	0%		0	0	12	470 U	460 U	470 U	450 U	480 U	460 U

TABLE 1
SEAD-002-R-01 (EOD-2) SOIL SAMPLE RESULTS
SENECA ARMY DEPOT ACTIVITY

SITE LOCATION								EOD2	EOD2	EOD2	EOD2	EOD2	EOD2
LOCATION ID								EOD2-A1	EOD2-A2	EOD2-A3	EOD2-A4	EOD2-B1	EOD2-B2
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								002R011001	002R011002	002R011003	002R011004	002R011008	002R011007
TOP OF SAMPLE								0	0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								12/11/2006	12/11/2006	12/11/2006	12/11/2006	12/11/2006	12/11/2006
QC CODE								SA	SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA
Parameter	**Units**	**Maximum Concentration**	**Frequency of Detection**	**NYSDEC Unrestricted Use Value (1)**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Naphthalene	UG/KG	45	17%	12000	0	2	12	470 U	460 U	470 U	450 U	45 J	37 J
Nitrobenzene	UG/KG	0	0%		0	0	12	470 U	460 U	470 U	450 U	480 U	460 U
Pentachlorophenol	UG/KG	0	0%	800	0	0	12	2400 U	2400 U	2400 U	2300 U	2500 U	2400 U
Phenanthrene	UG/KG	720	17%	100000	0	2	12	470 U	460 U	470 U	450 U	340 J	720
Phenol	UG/KG	0	0%	330	0	0	12	470 U	460 U	470 U	450 U	480 U	460 U
Pyrene	UG/KG	520	17%	100000	0	2	12	470 U	460 U	470 U	450 U	220 J	520
Explosives													
1,3,5-Trinitrobenzene	UG/KG	0	0%		0	0	12	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
1,3-Dinitrobenzene	UG/KG	0	0%		0	0	12	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
2,4,6-Trinitrotoluene	UG/KG	0	0%		0	0	12	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
2,4-Dinitrotoluene	UG/KG	0	0%		0	0	12	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
2,6-Dinitrotoluene	UG/KG	0	0%		0	0	12	1000 U	1000 U	1000 U	1000 U	1000 U	1000 U
2-Nitrotoluene	UG/KG	0	0%		0	0	12	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
2-amino-4,6-Dinitrotoluene	UG/KG	0	0%		0	0	12	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
3-Nitrotoluene	UG/KG	0	0%		0	0	12	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
4-Nitrotoluene	UG/KG	0	0%		0	0	12	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
4-amino-2,6-Dinitrotoluene	UG/KG	0	0%		0	0	12	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
HMX	UG/KG	0	0%		0	0	12	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
Nitrobenzene	UG/KG	0	0%		0	0	12	500 U	500 U	500 U	500 U	500 U	500 U
Nitroglycerine	UG/KG	0	0%		0	0	12	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
Pentaerythritol Tetranitrate	UG/KG	0	0%		0	0	12	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
RDX	UG/KG	0	0%		0	0	12	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
Tetryl	UG/KG	0	0%		0	0	12	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
PCBs													
Aroclor-1016	UG/KG	0	0%		0	0	12	47 UJ	46 U	47 U	45 U	48 U	46 U
Aroclor-1221	UG/KG	0	0%		0	0	12	95 UJ	94 U	96 U	92 U	98 U	94 U
Aroclor-1232	UG/KG	0	0%		0	0	12	47 UJ	46 U	47 U	45 U	48 U	46 U
Aroclor-1242	UG/KG	0	0%		0	0	12	47 UJ	46 U	47 U	45 U	48 U	46 U
Aroclor-1248	UG/KG	0	0%		0	0	12	47 UJ	46 U	47 U	45 U	48 U	46 U
Aroclor-1254	UG/KG	0	0%		0	0	12	47 UJ	46 U	47 U	45 U	48 U	46 U
Aroclor-1260	UG/KG	0	0%		0	0	12	47 UJ	46 U	47 U	45 U	48 U	46 U
Pesticides													
4,4'-DDD	UG/KG	0	0%	3.3	0	0	12	4.7 U	4.6 U	4.7 U	4.5 U	4.8 U	4.6 U
4,4'-DDE	UG/KG	0	0%	3.3	0	0	12	4.7 U	4.6 U	4.7 U	4.5 U	4.8 U	4.6 U
4,4'-DDT	UG/KG	0	0%	3.3	0	0	12	4.7 U	4.6 U	4.7 U	4.5 U	4.8 U	4.6 U
Aldrin	UG/KG	0	0%	5	0	0	12	2.4 U	2.4 U	2.4 U	2.3 U	2.5 U	2.4 U
Alpha-BHC	UG/KG	0	0%	20	0	0	12	2.4 U	2.4 U	2.4 U	2.3 U	2.5 U	2.4 U
Alpha-Chlordane	UG/KG	0	0%	94	0	0	12	2.4 U	2.4 U	2.4 U	2.3 U	2.5 U	2.4 U
Beta-BHC	UG/KG	0	0%	36	0	0	12	2.4 U	2.4 U	2.4 U	2.3 U	2.5 U	2.4 U
Delta-BHC	UG/KG	0	0%	40	0	0	12	2.4 U	2.4 U	2.4 U	2.3 U	2.5 U	2.4 U
Dieldrin	UG/KG	0	0%	5	0	0	12	4.7 U	4.6 U	4.7 U	4.5 U	4.8 U	4.6 U
Endosulfan I	UG/KG	0	0%	2400	0	0	12	2.4 U	2.4 U	2.4 U	2.3 U	2.5 U	2.4 U
Endosulfan II	UG/KG	0	0%	2400	0	0	12	4.7 U	4.6 U	4.7 U	4.5 U	4.8 U	4.6 U
Endosulfan sulfate	UG/KG	0	0%	2400	0	0	12	4.7 U	4.6 U	4.7 U	4.5 U	4.8 U	4.6 U
Endrin	UG/KG	0	0%	14	0	0	12	4.7 U	4.6 U	4.7 U	4.5 U	4.8 U	4.6 U
Endrin aldehyde	UG/KG	0	0%		0	0	12	4.7 U	4.6 U	4.7 U	4.5 U	4.8 U	4.6 U
Endrin ketone	UG/KG	0	0%		0	0	12	4.7 U	4.6 U	4.7 U	4.5 U	4.8 U	4.6 U
Gamma-BHC/Lindane	UG/KG	0	0%	100	0	0	12	2.4 U	2.4 U	2.4 U	2.3 U	2.5 U	2.4 U
Gamma-Chlordane	UG/KG	0	0%		0	0	12	2.4 U	2.4 U	2.4 U	2.3 U	2.5 U	2.4 U
Heptachlor	UG/KG	0	0%	42	0	0	12	2.4 U	2.4 U	2.4 U	2.3 U	2.5 U	2.4 U
Heptachlor epoxide	UG/KG	0	0%		0	0	12	2.4 U	2.4 U	2.4 U	2.3 U	2.5 U	2.4 U
Methoxychlor	UG/KG	0	0%		0	0	12	24 U	24 U	24 U	23 U	25 U	24 U
Toxaphene	UG/KG	0	0%		0	0	12	47 U	46 U	47 U	45 U	48 U	46 U

TABLE 1
SEAD-002-R-01 (EOD-2) SOIL SAMPLE RESULTS
SENECA ARMY DEPOT ACTIVITY

SITE LOCATION								EOD2	EOD2	EOD2	EOD2	EOD2	EOD2
LOCATION ID								EOD2-B3	EOD2-B4	EOD2-C1	EOD2-C2	EOD2-C3	EOD2-C4
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								002R011006	002R011005	002R011011	002R011010	002R011009	002R011012
TOP OF SAMPLE								0	0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								12/11/2006	12/11/2006	12/11/2006	12/11/2006	12/11/2006	12/11/2006
QC CODE								SA	SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA
Parameter	**Units**	**Maximum Concentration**	**Frequency of Detection**	**NYSDEC Unrestricted Use Value (1)**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Volatile Organic Compounds													
1,1,1-Trichloroethane	UG/KG	0	0%	680	0	0	12	6.9 U	6.7 U	6.3 U	8 U	7.8 U	5.5 U
1,1,2,2-Tetrachloroethane	UG/KG	0	0%		0	0	12	6.9 U	6.7 U	6.3 U	8 U	7.8 U	5.5 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/KG	0	0%		0	0	12	6.9 U	6.7 U	6.3 U	8 U	7.8 U	5.5 U
1,1,2-Trichloroethane	UG/KG	0	0%		0	0	12	6.9 U	6.7 U	6.3 U	8 U	7.8 U	5.5 U
1,1-Dichloroethane	UG/KG	0	0%	270	0	0	12	6.9 U	6.7 U	6.3 U	8 U	7.8 U	5.5 U
1,1-Dichloroethene	UG/KG	0	0%	330	0	0	12	6.9 U	6.7 U	6.3 U	8 U	7.8 U	5.5 U
1,2,4-Trichlorobenzene	UG/KG	0	0%		0	0	12	6.9 U	6.7 U	6.3 U	8 U	7.8 U	5.5 U
1,2-Dibromo-3-chloropropane	UG/KG	0	0%		0	0	12	6.9 UJ	6.7 UJ	6.3 UJ	8 UJ	7.8 UJ	5.5 U
1,2-Dibromoethane	UG/KG	0	0%		0	0	12	6.9 U	6.7 U	6.3 U	8 U	7.8 U	5.5 U
1,2-Dichlorobenzene	UG/KG	0	0%	1100	0	0	12	6.9 U	6.7 U	6.3 U	8 U	7.8 U	5.5 U
1,2-Dichloroethane	UG/KG	0	0%	20	0	0	12	6.9 U	6.7 U	6.3 U	8 U	7.8 U	5.5 U
1,2-Dichloropropane	UG/KG	0	0%		0	0	12	6.9 U	6.7 U	6.3 U	8 U	7.8 U	5.5 U
1,3-Dichlorobenzene	UG/KG	0	0%	2400	0	0	12	6.9 U	6.7 U	6.3 U	8 U	7.8 U	5.5 U
1,4-Dichlorobenzene	UG/KG	0	0%	1800	0	0	12	6.9 U	6.7 U	6.3 U	8 U	7.8 U	5.5 U
Acetone	UG/KG	100	83%	50	8	10	12	47	62	63	75	50	100
Benzene	UG/KG	0	0%	60	0	0	12	6.9 U	6.7 U	6.3 U	8 U	7.8 U	5.5 U
Bromodichloromethane	UG/KG	0	0%		0	0	12	6.9 U	6.7 U	6.3 U	8 U	7.8 U	5.5 U
Bromoform	UG/KG	0	0%		0	0	12	6.9 U	6.7 U	6.3 U	8 U	7.8 U	5.5 U
Carbon disulfide	UG/KG	2.4	8%		0	1	12	14 U	13 U	13 U	16 U	16 U	2.4 J
Carbon tetrachloride	UG/KG	0	0%	760	0	0	12	6.9 U	6.7 U	6.3 U	8 U	7.8 U	5.5 U
Chlorobenzene	UG/KG	0	0%	1100	0	0	12	6.9 U	6.7 U	6.3 U	8 U	7.8 U	5.5 U
Chlorodibromomethane	UG/KG	0	0%		0	0	12	6.9 U	6.7 U	6.3 U	8 U	7.8 U	5.5 U
Chloroethane	UG/KG	0	0%		0	0	12	14 U	13 U	13 U	16 U	16 U	11 U
Chloroform	UG/KG	0	0%	370	0	0	12	6.9 U	6.7 U	6.3 U	8 U	7.8 U	5.5 U
Cis-1,2-Dichloroethene	UG/KG	0	0%	250	0	0	12	6.9 U	6.7 U	6.3 U	8 U	7.8 U	5.5 U
Cis-1,3-Dichloropropene	UG/KG	0	0%		0	0	12	6.9 U	6.7 U	6.3 U	8 U	7.8 U	5.5 U
Cyclohexane	UG/KG	0.88	8%		0	1	12	6.9 UJ	0.88 J	6.3 UJ	8 UJ	7.8 UJ	5.5 U
Dichlorodifluoromethane	UG/KG	0	0%		0	0	12	6.9 U	6.7 U	6.3 U	8 U	7.8 U	5.5 U
Ethyl benzene	UG/KG	0	0%	1000	0	0	12	6.9 U	6.7 U	6.3 U	8 U	7.8 U	5.5 U
Isopropylbenzene	UG/KG	0	0%		0	0	12	6.9 U	6.7 U	6.3 U	8 U	7.8 U	5.5 U
Meta/Para Xylene	UG/KG	0	0%		0	0	12	6.9 U	6.7 U	6.3 U	8 U	7.8 U	5.5 U
Methyl Acetate	UG/KG	2.8	8%		0	1	12	2.8 J	13 UJ	13 UJ	16 UJ	16 UJ	11 U
Methyl Tertbutyl Ether	UG/KG	0	0%	930	0	0	12	6.9 U	6.7 U	6.3 U	8 U	7.8 U	5.5 U
Methyl bromide	UG/KG	0	0%		0	0	12	6.9 U	6.7 U	6.3 U	8 U	7.8 U	5.5 U
Methyl butyl ketone	UG/KG	0	0%		0	0	12	14 UJ	13 UJ	13 UJ	16 UJ	16 UJ	11 U
Methyl chloride	UG/KG	0	0%		0	0	12	6.9 U	6.7 U	6.3 U	8 U	7.8 U	5.5 U
Methyl cyclohexane	UG/KG	1.1	8%		0	1	12	6.9 UJ	1.1 J	6.3 UJ	8 UJ	7.8 UJ	5.5 U
Methyl ethyl ketone	UG/KG	15	92%	120	0	11	12	3.1 J	15	4.4 J	6.3 J	4.6 J	3.8 J
Methyl isobutyl ketone	UG/KG	0	0%		0	0	12	14 UJ	13 UJ	13 UJ	16 UJ	16 UJ	11 U
Methylene chloride	UG/KG	2.3	100%	50	0	12	12	2.3 J	1.4 J	1.6 J	1.4 J	1.9 J	0.51 J
Ortho Xylene	UG/KG	0	0%		0	0	12	6.9 U	6.7 U	6.3 U	8 U	7.8 U	5.5 U
Styrene	UG/KG	0	0%		0	0	12	6.9 U	6.7 U	6.3 U	8 U	7.8 U	5.5 U
Tetrachloroethene	UG/KG	0	0%	1300	0	0	12	6.9 U	6.7 U	6.3 U	8 U	7.8 U	5.5 U
Toluene	UG/KG	1.4	25%	700	0	3	12	6.9 U	0.44 J	6.3 U	8 U	7.8 U	5.5 U
Trans-1,2-Dichloroethene	UG/KG	0	0%	190	0	0	12	6.9 U	6.7 U	6.3 U	8 U	7.8 U	5.5 U
Trans-1,3-Dichloropropene	UG/KG	0	0%		0	0	12	6.9 U	6.7 U	6.3 U	8 U	7.8 U	5.5 U
Trichloroethene	UG/KG	0	0%	470	0	0	12	6.9 U	6.7 U	6.3 U	8 U	7.8 U	5.5 U
Trichlorofluoromethane	UG/KG	0	0%		0	0	12	6.9 U	6.7 U	6.3 U	8 U	7.8 U	5.5 U
Vinyl chloride	UG/KG	0	0%	20	0	0	12	6.9 U	6.7 U	6.3 U	8 U	7.8 U	5.5 U
Semivolatile Organic Compounds													
1,1'-Biphenyl	UG/KG	0	0%		0	0	12	390 U	450 U	440 U	510 U	470 U	370 U
2,4,5-Trichlorophenol	UG/KG	0	0%		0	0	12	390 U	450 U	440 U	510 U	470 U	370 U
2,4,6-Trichlorophenol	UG/KG	0	0%		0	0	12	390 U	450 U	440 U	510 U	470 U	370 U
2,4-Dichlorophenol	UG/KG	0	0%		0	0	12	390 U	450 U	440 U	510 U	470 U	370 U

TABLE 1
SEAD-002-R-01 (EOD-2) SOIL SAMPLE RESULTS
SENECA ARMY DEPOT ACTIVITY

SITE LOCATION							EOD2	EOD2	EOD2	EOD2	EOD2	EOD2
LOCATION ID							EOD2-B3	EOD2-B4	EOD2-C1	EOD2-C2	EOD2-C3	EOD2-C4
MATRIX							SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID							002R011006	002R011005	002R011011	002R011010	002R011009	002R011012
TOP OF SAMPLE							0	0	0	0	0	0
BOTTOM OF SAMPLE							0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE							12/11/2006	12/11/2006	12/11/2006	12/11/2006	12/11/2006	12 11:2006
QC CODE							SA	SA	SA	SA	SA	SA
STUDY ID							RA	RA	RA	RA	RA	RA
Parameter	**Units**	**Maximum Concentration**	**Frequency of Detection**	**NYSDEC Unrestricted Use Value (1)**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Naphthalene	UG/KG	45	17%	12000	0	2	12	390 U	450 U	440 U	510 U	470 U	370 U
Nitrobenzene	UG/KG	0	0%		0	0	12	390 U	450 U	440 U	510 U	470 U	370 U
Pentachlorophenol	UG/KG	0	0%	800	0	0	12	2000 U	2300 U	2300 U	2600 U	2400 U	1900 U
Phenanthrene	UG/KG	720	17%	100000	0	2	12	390 U	450 U	440 U	510 U	470 U	370 U
Phenol	UG/KG	0	0%	330	0	0	12	390 U	450 U	440 U	510 U	470 U	370 U
Pyrene	UG/KG	520	17%	100000	0	2	12	390 U	450 U	440 U	510 U	470 U	370 U
Explosives													
1,3,5-Trinitrobenzene	UG/KG	0	0%		0	0	12	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
1,3-Dinitrobenzene	UG/KG	0	0%		0	0	12	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
2,4,6-Trinitrotoluene	UG/KG	0	0%		0	0	12	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
2,4-Dinitrotoluene	UG/KG	0	0%		0	0	12	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
2,6-Dinitrotoluene	UG/KG	0	0%		0	0	12	1000 U	1000 U	1000 U	1000 U	1000 U	1000 U
2-Nitrotoluene	UG/KG	0	0%		0	0	12	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
2-amino-4,6-Dinitrotoluene	UG/KG	0	0%		0	0	12	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
3-Nitrotoluene	UG/KG	0	0%		0	0	12	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
4-Nitrotoluene	UG/KG	0	0%		0	0	12	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
4-amino-2,6-Dinitrotoluene	UG/KG	0	0%		0	0	12	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
HMX	UG/KG	0	0%		0	0	12	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
Nitrobenzene	UG/KG	0	0%		0	0	12	500 U	500 U	500 U	500 U	500 U	500 U
Nitroglycerine	UG/KG	0	0%		0	0	12	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
Pentaerythritol Tetranitrate	UG/KG	0	0%		0	0	12	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
RDX	UG/KG	0	0%		0	0	12	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
Tetryl	UG/KG	0	0%		0	0	12	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
PCBs													
Aroclor-1016	UG/KG	0	0%		0	0	12	39 U	45 U	44 U	51 U	47 U	37 U
Aroclor-1221	UG/KG	0	0%		0	0	12	79 U	92 U	89 U	100 U	96 U	74 U
Aroclor-1232	UG/KG	0	0%		0	0	12	39 U	45 U	44 U	51 U	47 U	37 U
Aroclor-1242	UG/KG	0	0%		0	0	12	39 U	45 U	44 U	51 U	47 U	37 U
Aroclor-1248	UG/KG	0	0%		0	0	12	39 U	45 U	44 U	51 U	47 U	37 U
Aroclor-1254	UG/KG	0	0%		0	0	12	39 U	45 U	44 U	51 U	47 U	37 U
Aroclor-1260	UG/KG	0	0%		0	0	12	39 U	45 U	44 U	51 U	47 U	37 U
Pesticides													
4,4'-DDD	UG/KG	0	0%	3.3	0	0	12	3.9 U	4.5 U	4.4 U	5.1 U	4.7 U	3.7 U
4,4'-DDE	UG/KG	0	0%	3.3	0	0	12	3.9 U	4.5 U	4.4 U	5.1 U	4.7 U	3.7 U
4,4'-DDT	UG/KG	0	0%	3.3	0	0	12	3.9 U	4.5 U	4.4 U	5.1 U	4.7 U	3.7 U
Aldrin	UG/KG	0	0%	5	0	0	12	2 U	2.3 U	2.3 U	2.6 U	2.4 U	1.9 U
Alpha-BHC	UG/KG	0	0%	20	0	0	12	2 U	2.3 U	2.3 U	2.6 U	2.4 U	1.9 U
Alpha-Chlordane	UG/KG	0	0%	94	0	0	12	2 U	2.3 U	2.3 U	2.6 U	2.4 U	1.9 U
Beta-BHC	UG/KG	0	0%	36	0	0	12	2 U	2.3 U	2.3 U	2.6 U	2.4 U	1.9 U
Delta-BHC	UG/KG	0	0%	40	0	0	12	2 U	2.3 U	2.3 U	2.6 U	2.4 U	1.9 U
Dieldrin	UG/KG	0	0%	5	0	0	12	3.9 U	4.5 U	4.4 U	5.1 U	4.7 U	3.7 U
Endosulfan I	UG/KG	0	0%	2400	0	0	12	2 U	2.3 U	2.3 U	2.6 U	2.4 U	1.9 U
Endosulfan II	UG/KG	0	0%	2400	0	0	12	3.9 U	4.5 U	4.4 U	5.1 U	4.7 U	3.7 U
Endosulfan sulfate	UG/KG	0	0%	2400	0	0	12	3.9 U	4.5 U	4.4 U	5.1 U	4.7 U	3.7 U
Endrin	UG/KG	0	0%	14	0	0	12	3.9 U	4.5 U	4.4 U	5.1 U	4.7 U	3.7 U
Endrin aldehyde	UG/KG	0	0%		0	0	12	3.9 U	4.5 U	4.4 U	5.1 U	4.7 U	3.7 U
Endrin ketone	UG/KG	0	0%		0	0	12	3.9 U	4.5 U	4.4 U	5.1 U	4.7 U	3.7 U
Gamma-BHC Lindane	UG/KG	0	0%	100	0	0	12	2 U	2.3 U	2.3 U	2.6 U	2.4 U	1.9 U
Gamma-Chlordane	UG/KG	0	0%		0	0	12	2 U	2.3 U	2.3 U	2.6 U	2.4 U	1.9 U
Heptachlor	UG/KG	0	0%	42	0	0	12	2 U	2.3 U	2.3 U	2.6 U	2.4 U	1.9 U
Heptachlor epoxide	UG/KG	0	0%		0	0	12	2 U	2.3 U	2.3 U	2.6 U	2.4 U	1.9 U
Methoxychlor	UG/KG	0	0%		0	0	12	20 U	23 U	23 U	26 U	24 U	19 U
Toxaphene	UG/KG	0	0%		0	0	12	39 U	45 U	44 U	51 U	47 U	37 U

TABLE 2
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN IN SEAD-002-R-01 (EOD-2) SOIL
SENECA ARMY DEPOT ACTIVITY

Scenario Time fr Cuurent/Future
Medium: Soil
Exposure Mediur Soil
Exposure Point: SEAD 002-R-01 (EOD-2)

CAS Number	Chemical	Minimum Detected Concentration (1) (mg/kg)	Q	Maximum Detected Concentration (1) (mg/kg)	Q	Location of Maximum Concentration	Detection Frequency (1)	Range of Reporting Limits (1) (mg/kg)	Concentration Used for Screening (2) (mg/kg)	Background Value (3) (mg/kg)	Screening Value (4) (mg/kg)	Potential ARAR/TBC Source	ARAR / TBC Value (5) (mg/kg)	COPC Flag	Rationale for Contaminant Deletion or Selection (6)
VOC															
67-64-1	Acetone	0.047		0.1		EOD2-C4	10 / 12	0.0312 - 0.032	0.1		6,100	NYSDEC Subpart 375-6	0.05	NO	BSL
75-15-0	Carbon disulfide	0.0024	J	0.0024	J	EOD2-C4	1 / 12	0.013 - 0.016	0.0024		67			NO	BSL
110-82-7	Cyclohexane	0.00088	J	0.00088	J	EOD2-B4	1 / 12	0.0055 - 0.008	0.00088		720			NO	BSL
79-20-9	Methyl Acetate	0.0028	J	0.0028	J	EOD2-B3	1 / 12	0.011 - 0.016	0.0028		7,800			NO	BSL
108-87-2	Methyl cyclohexane	0.0011	J	0.0011	J	EOD2-B4	1 / 12	0.0055 - 0.008	0.0011					NSV	NSV
78-93-3	Methyl ethyl ketone	0.0028	J	0.015		EOD2-B4	11 / 12	0.016 - 0.016	0.015		2,800	NYSDEC Subpart 375-6	0.12	NO	BSL
75-09-2	Methylene chloride	0.00051	J	0.0023	J	EOD2-A3	12 / 12	0 - 0	0.0023		11	NYSDEC Subpart 375-6	0.05	NO	BSL
108-88-3	Toluene	0.00044	J	0.0014	J	EOD2-A1	3 / 12	0.0055 - 0.008	0.0014		500	NYSDEC Subpart 375-6	0.7	NO	BSL
SVOC															
83-32-9	Acenaphthene	0.06	J	0.098	J	EOD2-B2	2 / 12	0.37 - 0.51	0.098		340	NYSDEC Subpart 375-6	20	NO	BSL
120-12-7	Anthracene	0.087	J	0.24	J	EOD2-B2	2 / 12	0.37 - 0.51	0.24		1,700	NYSDEC Subpart 375-6	100	NO	BSL
56-55-3	Benzo(a)anthracene	0.15	J	0.41	J	EOD2-B2	2 / 12	0.37 - 0.51	0.41		0.15	NYSDEC Subpart 375-6	1	YES	ASL
50-32-8	Benzo(a)pyrene	0.11	J	0.31	J	EOD2-B2	2 / 12	0.37 - 0.51	0.31		0.015	NYSDEC Subpart 375-6	1	YES	ASL
205-99-2	Benzo(b)fluoranthene	0.1	J	0.23	J	EOD2-B2	2 / 12	0.37 - 0.51	0.23		0.15	NYSDEC Subpart 375-6	1	YES	ASL
191-24-2	Benzo(ghi)perylene	0.057	J	0.15	J	EOD2-B2	2 / 12	0.37 - 0.51	0.15			NYSDEC Subpart 375-6	100	NSV	NSV
207-08-9	Benzo(k)fluoranthene	0.12	J	0.3	J	EOD2-B2	2 / 12	0.37 - 0.51	0.3		1.5	NYSDEC Subpart 375-6	0.8	NO	CSG
86-74-8	Carbazole	0.048	J	0.12	J	EOD2-B2	2 / 12	0.37 - 0.51	0.12					NSV	NSV
218-01-9	Chrysene	0.14	J	0.35	J	EOD2-B2	2 / 12	0.37 - 0.51	0.35		15	NYSDEC Subpart 375-6	1	NO	CSG
53-70-3	Dibenz(a,h)anthracene	0.059	J	0.059	J	EOD2-B2	1 / 12	0.37 - 0.51	0.059		0.015	NYSDEC Subpart 375-6	0.33	YES	ASL
132-64-9	Dibenzofuran	0.051	J	0.051	J	EOD2-B2	1 / 12	0.37 - 0.51	0.051			NYSDEC Subpart 375-6	7	NSV	NSV
206-44-0	Fluoranthene	0.31	J	0.75		EOD2-B2	2 / 12	0.37 - 0.51	0.75		230	NYSDEC Subpart 375-6	100	NO	BSL
86-73-7	Fluorene	0.05	J	0.1	J	EOD2-B2	2 / 12	0.37 - 0.51	0.1		230	NYSDEC Subpart 375-6	30	NO	BSL
193-39-5	Indeno(1,2,3-cd)pyrene	0.057	J	0.15	J	EOD2-B2	2 / 12	0.37 - 0.51	0.15		0.15	NYSDEC Subpart 375-6	0.5	NO	CSG
91-20-3	Naphthalene	0.037	J	0.045	J	EOD2-B1	2 / 12	0.37 - 0.51	0.045		3.9	NYSDEC Subpart 375-6	12	NO	BSL
85-01-8	Phenanthrene	0.34	J	0.72		EOD2-B2	2 / 12	0.37 - 0.51	0.72			NYSDEC Subpart 375-6	100	NSV	NSV
129-00-0	Pyrene	0.22	J	0.52		EOD2-B2	2 / 12	0.37 - 0.51	0.52		170	NYSDEC Subpart 375-6	100	NO	BSL
METALS															
7429-90-5	Aluminum	11,000		18,100		EOD2-C1	12 / 12	0 - 0	18,100	20,500	7,700			YES	ASL
7440-38-2	Arsenic	2.5		4.5		EOD2-A2	12 / 12	0 - 0	4.5	21.5	0.39	NYSDEC Subpart 375-6	13	YES	ASL
7440-39-3	Barium	28.5		144		EOD2-A2	12 / 12	0 - 0	144	159	1,500	NYSDEC Subpart 375-6	350	NO	BSL
7440-41-7	Beryllium	0.53	J	0.91		EOD2-C1	11 / 12	0.02 - 0.02	0.91	1.4	16	NYSDEC Subpart 375-6	7.2	NO	BSL
7440-43-9	Cadmium	0.06	J	0.61	J	EOD2-A2	8 / 12	0.04 - 0.05	0.61	2.9	7	NYSDEC Subpart 375-6	2.5	NO	BSL
7440-70-2	Calcium	1,900		19,200		EOD2-B4	12 / 12	0 - 0	19,200	293,000				NSV	NUT
7440-47-3	Chromium	15.2		26.8		EOD2-C1	12 / 12	0 - 0	26.8	32.7	280			NO	BSL
7440-48-4	Cobalt	5.1	J	19.4		EOD2-A2	12 / 12	0 - 0	19.4	29.1	2.3			YES	ASL
7440-50-8	Copper	9.4		37.3		EOD2-C4	12 / 12	0 - 0	37.3	62.8	310	NYSDEC Subpart 375-6	50	NO	BSL
7439-89-6	Iron	16,200		28,200		EOD2-C4	12 / 12	0 - 0	28,200	381,600	5,500			YES	ASL
7439-92-1	Lead	14.2		27.9		EOD2-C4	12 / 12	0 - 0	27.9	266	40	NYSDEC Subpart 375-6	63	NO	BSL
7439-95-4	Magnesium	2,430		6,620		EOD2-C4	12 / 12	0 - 0	6,620	29,100				NSV	NUT
7439-96-5	Manganese	278		2,770		EOD2-A2	12 / 12	0 - 0	2,770	2,380	180	NYSDEC Subpart 375-6	1,600	YES	ASL
7439-97-6	Mercury	0.02	J	0.06		EOD2-B1	12 / 12	0 - 0	0.06	0.13	0.43	NYSDEC Subpart 375-6	0.18	NO	BSL
7440-02-0	Nickel	13.3		49.9		EOD2-C4	12 / 12	0 - 0	49.9	62.3	150	NYSDEC Subpart 375-6	30	NO	BSL
7440-09-7	Potassium	1,050	J	2,040	J	EOD2-B1	12 / 12	0 - 0	2,040	3,160				NSV	NUT
7782-49-2	Selenium	1.4	J	2.6		EOD2-A2	12 / 12	0 - 0	2.6	1.7	39	NYSDEC Subpart 375-6	3.9	NO	BSL
7440-62-2	Vanadium	18		33.8		EOD2-A2	12 / 12	0 - 0	33.8	32.7	55			NO	BSL
7440-66-6	Zinc	51.3		79.2		EOD2-B1	12 / 12	0 - 0	79.2	126	2,300	NYSDEC Subpart 375-6	109	NO	BSL
Other Analytes															
14797-55-8	Nitrate Nitrogen	7.03		9.21		EOD2-C3	4 / 12	5.54 - 7.66	9.21		13,000			NO	BSL

Notes:
1. Laboratory duplicates were not included in the assessment. Range of reporting limits were presented for nondetects only.
2. The maximum detected concentration was used for screening.
3. Background value is the maximum Seneca background concentration.
4. EPA Regional Screening Levels for residential soil. On-line resources available at http://www.epa.gov/region09/superfund/prg/index.html. Last updated April 2009. Region 9 PRGs were derived based on Direct contact exposure (ingestion and dermal contact) and a target Cancer Risk of 1E-6 or a Target Hazard Quotient of 0.1. Screening values for calcium, magnesium, potassium, and sodium were calculated based on an assumption of 200 mg/day soil ingestion and recommended dietary allowances and adequate intakes for 1-3 yr children (500 mg/day and 80 mg/day for calcium and magnesium) and minimum requirements for 1 yr children (225 mg/day and 1000 mg/day for sodium and potassium) from Marilyn Wright (2001) Dietary Reference Intakes. PRG for total chromium (1:6 ratio Cr VI: Cr III) was used as screening value for chromium. PRG for nickel (soluble salts) was used as screening value for nickel.
5. Potential ARAR/TBC values are from NYSDEC Brownfield Unrestricted Use Soil Cleanup Objectives, http://www.dec.state.ny.us/website/regs/subpart375_6.html
6. Rationale codes
   Selection Reason: Above Screening Levels (ASL); No Screening Value (NSV); Chemicals in the Same Group were retained as COPC (CSG)
   Deletion Reason: Essential Nutrient (NUT); Below Screening Level (BSL)

Definitions:
COPC = Chemical of Potential Concern
ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered
Q = Qualifier
J = Estimated Value

TABLE 2
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN IN SEAD-002-R-01 (EOD-2) SOIL
SENECA ARMY DEPOT ACTIVITY

Scenario Time frame:	Cuurent/Future
Medium:	Soil
Exposure Medium:	Soil
Exposure Point:	SEAD 002-R-01 (EOD-2)

CAS Number	Chemical	Minimum Detected Concentration (1) (mg/kg)	Q	Maximum Detected Concentration (1) (mg/kg)	Q	Location of Maximum Concentration	Detection Frequency (1)			Range of Reporting Limits (1) (mg/kg)			Concentration Used for Screening (2) (mg/kg)	Background Value (3) (mg/kg)	Screening Value (4) (mg/kg)	Potential ARAR/TBC Source	ARAR / TBC Value (5) (mg/kg)	COPC Flag	Rationale for Contaminant Deletion or Selection (6)
VOC																			
67-64-1	Acetone	0.047		0.1		EOD2-C4	10	/	12	0.0312	-	0.032	0.1		6,100	NYSDEC Subpart 375-6	0.05	NO	BSL
75-15-0	Carbon disulfide	0.0024	J	0.0024	J	EOD2-C4	1	/	12	0.013	-	0.016	0.0024		67			NO	BSL
110-82-7	Cyclohexane	0.00088	J	0.00088	J	EOD2-B4	1	/	12	0.0055	-	0.008	0.00088		720			NO	BSL
79-20-9	Methyl Acetate	0.0028	J	0.0028	J	EOD2-B3	1	/	12	0.011	-	0.016	0.0028		7,800			NO	BSL
108-87-2	Methyl cyclohexane	0.0011	J	0.0011	J	EOD2-B4	1	/	12	0.0055	-	0.008	0.0011					NSV	NSV
78-93-3	Methyl ethyl ketone	0.0028	J	0.015		EOD2-B4	11	/	12	0.016	-	0.016	0.015		2,800	NYSDEC Subpart 375-6	0.12	NO	BSL
75-09-2	Methylene chloride	0.00051	J	0.0023	J	EOD2-A3	12	/	12	0	-	0	0.0023		11	NYSDEC Subpart 375-6	0.05	NO	BSL
108-88-3	Toluene	0.00044	J	0.0014	J	EOD2-A1	3	/	12	0.0055	-	0.008	0.0014		500	NYSDEC Subpart 375-6	0.7	NO	BSL
SVOC																			
83-32-9	Acenaphthene	0.06	J	0.098	J	EOD2-B2	2	/	12	0.37	-	0.51	0.098		340	NYSDEC Subpart 375-6	20	NO	BSL
120-12-7	Anthracene	0.087	J	0.24	J	EOD2-B2	2	/	12	0.37	-	0.51	0.24		1,700	NYSDEC Subpart 375-6	100	NO	BSL
56-55-3	Benzo(a)anthracene	0.15	J	0.41	J	EOD2-B2	2	/	12	0.37	-	0.51	0.41		0.15	NYSDEC Subpart 375-6	1	YES	ASL
50-32-8	Benzo(a)pyrene	0.11	J	0.31	J	EOD2-B2	2	/	12	0.37	-	0.51	0.31		0.015	NYSDEC Subpart 375-6	1	YES	ASL
205-99-2	Benzo(b)fluoranthene	0.1	J	0.23	J	EOD2-B2	2	/	12	0.37	-	0.51	0.23		0.15	NYSDEC Subpart 375-6	1	YES	ASL
191-24-2	Benzo(ghi)perylene	0.057	J	0.15	J	EOD2-B2	2	/	12	0.37	-	0.51	0.15			NYSDEC Subpart 375-6	100	NSV	NSV
207-08-9	Benzo(k)fluoranthene	0.12	J	0.3	J	EOD2-B2	2	/	12	0.37	-	0.51	0.3		1.5	NYSDEC Subpart 375-6	0.8	NO	CSG
86-74-8	Carbazole	0.048	J	0.12	J	EOD2-B2	2	/	12	0.37	-	0.51	0.12					NSV	NSV
218-01-9	Chrysene	0.14	J	0.35	J	EOD2-B2	2	/	12	0.37	-	0.51	0.35		15	NYSDEC Subpart 375-6	1	NO	CSG
53-70-3	Dibenz(a,h)anthracene	0.059	J	0.059	J	EOD2-B2	1	/	12	0.37	-	0.51	0.059		0.015	NYSDEC Subpart 375-6	0.33	YES	ASL
132-64-9	Dibenzofuran	0.051	J	0.051	J	EOD2-B2	1	/	12	0.37	-	0.51	0.051			NYSDEC Subpart 375-6	7	NSV	NSV
206-44-0	Fluoranthene	0.31	J	0.75		EOD2-B2	2	/	12	0.37	-	0.51	0.75		230	NYSDEC Subpart 375-6	100	NO	BSL
86-73-7	Fluorene	0.05	J	0.1	J	EOD2-B2	2	/	12	0.37	-	0.51	0.1		230	NYSDEC Subpart 375-6	30	NO	BSL
193-39-5	Indeno(1,2,3-cd)pyrene	0.057	J	0.15	J	EOD2-B2	2	/	12	0.37	-	0.51	0.15		0.15	NYSDEC Subpart 375-6	0.5	NO	CSG
91-20-3	Naphthalene	0.037	J	0.045	J	EOD2-B1	2	/	12	0.37	-	0.51	0.045		3.9	NYSDEC Subpart 375-6	12	NO	BSL
85-01-8	Phenanthrene	0.34	J	0.72		EOD2-B2	2	/	12	0.37	-	0.51	0.72			NYSDEC Subpart 375-6	100	NSV	NSV
129-00-0	Pyrene	0.22	J	0.52		EOD2-B2	2	/	12	0.37	-	0.51	0.52		170	NYSDEC Subpart 375-6	100	NO	BSL
METALS																			
7429-90-5	Aluminum	11,000		18,100		EOD2-C1	12	/	12	0	-	0	18,100	20,500	7,700			YES	ASL
7440-38-2	Arsenic	2.5		4.5		EOD2-A2	12	/	12	0	-	0	4.5	21.5	0.39	NYSDEC Subpart 375-6	13	YES	ASL
7440-39-3	Barium	28.5		144		EOD2-A2	12	/	12	0	-	0	144	159	1,500	NYSDEC Subpart 375-6	350	NO	BSL
7440-41-7	Beryllium	0.53	J	0.91		EOD2-C1	11	/	12	0.02	-	0.02	0.91	1.4	16	NYSDEC Subpart 375-6	7.2	NO	BSL
7440-43-9	Cadmium	0.06	J	0.61	J	EOD2-A2	8	/	12	0.04	-	0.05	0.61	2.9	7	NYSDEC Subpart 375-6	2.5	NO	BSL
7440-70-2	Calcium	1,900		19,200		EOD2-B4	12	/	12	0	-	0	19,200	293,000				NSV	NUT
7440-47-3	Chromium	15.2		26.8		EOD2-C1	12	/	12	0	-	0	26.8	32.7	280			NO	BSL
7440-48-4	Cobalt	5.1	J	19.4		EOD2-A2	12	/	12	0	-	0	19.4	29.1	2.3			YES	ASL
7440-50-8	Copper	9.4		37.3		EOD2-C4	12	/	12	0	-	0	37.3	62.8	310	NYSDEC Subpart 375-6	50	NO	BSL
7439-89-6	Iron	16,200		28,200		EOD2-C4	12	/	12	0	-	0	28,200	381,600	5,500			YES	ASL
7439-92-1	Lead	14.2		27.9		EOD2-C4	12	/	12	0	-	0	27.9	266	40	NYSDEC Subpart 375-6	63	NO	BSL
7439-95-4	Magnesium	2,430		6,620		EOD2-C4	12	/	12	0	-	0	6,620	29,100				NSV	NUT
7439-96-5	Manganese	278		2,770		EOD2-A2	12	/	12	0	-	0	2,770	2,380	180	NYSDEC Subpart 375-6	1,600	YES	ASL
7439-97-6	Mercury	0.02	J	0.06		EOD2-B1	12	/	12	0	-	0	0.06	0.13	0.43	NYSDEC Subpart 375-6	0.18	NO	BSL
7440-02-0	Nickel	13.3		49.9		EOD2-C4	12	/	12	0	-	0	49.9	62.3	150	NYSDEC Subpart 375-6	30	NO	BSL
7440-09-7	Potassium	1,050	J	2,040	J	EOD2-B1	12	/	12	0	-	0	2,040	3,160				NSV	NUT
7782-49-2	Selenium	1.4	J	2.6		EOD2-A2	12	/	12	0	-	0	2.6	1.7	39	NYSDEC Subpart 375-6	3.9	NO	BSL
7440-62-2	Vanadium	18		33.8		EOD2-A2	12	/	12	0	-	0	33.8	32.7	55			NO	BSL
7440-66-6	Zinc	51.3		79.2		EOD2-B1	12	/	12	0	-	0	79.2	126	2,300	NYSDEC Subpart 375-6	109	NO	BSL
Other Analytes																			
14797-55-8	Nitrate Nitrogen	7.03		9.21		EOD2-C3	4	/	12	5.54	-	7.66	9.21		13,000			NO	BSL

Notes:
1. Laboratory duplicates were not included in the assessment. Range of reporting limits were presented for nondetects only.
2. The maximum detected concentration was used for screening.
3. Background value is the maximum Seneca background concentration.
4. EPA Regional Screening Levels for residential soil. On-line resources available at http://www.epa.gov/region09/superfund/prg/index.html. Last updated April 2009. Region 9 PRGs were derived based on Direct contact exposure (ingestion and dermal contact) and a target Cancer Risk of 1E-6 or a Target Hazard Quotient of 0.1. Screening values for calcium, magnesium, potassium, and sodium were calculated based on an assumption of 200 mg/day soil ingestion and recommended dietary allowances and adequate intakes for 1-3 yr children (500 mg/day and 80 mg/day for calcium and magnesium) and minimum requirements for 1 yr children (225 mg/day and 1000 mg/day for sodium and potassium) from Marilyn Wright (2001) Dietary Reference Intakes. PRG for total chromium (1:6 ratio Cr VI: Cr III) was used as screening value for chromium. PRG for nickel (soluble salts) was used as screening value for nickel.
5. Potential ARAR/TBC values are from NYSDEC Brownfield Unrestricted Use Soil Cleanup Objectives, http://www.dec.state.ny.us/website/regs/subpart375_6.html
6. Rationale codes
   Selection Reason: Above Screening Levels (ASL); No Screening Value (NSV); Chemicals in the Same Group were retained as COPC (CSG)
   Deletion Reason: Essential Nutrient (NUT); Below Screening Level (BSL)

Definitions:
COPC = Chemical of Potential Concern
ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered
Q = Qualifier
J = Estimated Value

TABLE 3A
SOIL EXPOSURE POINT CONCENTRATION SUMMARY FOR SEAD 002-R-01 (EOD-2)
SENECA army DEPOT ACTIVITY

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Soil
Exposure Point:	SEAD 002-R-01 (EOD-2)

CAS Number	Chemical of Potential Concern	Units	Arithmetic Mean (1)	EPA ProUCL Student-t 95th UCL Value (1, 2, 4)	Maximum Detected Concentration (1)	Q	EPC Units	Reasonable Maximum Exposure (2)		
								EPA ProUCL Recommended UCL Value	Medium EPC Statistic	Medium EPC Rationale
108-87-2	Methyl cyclohexane	mg/kg	0.00	- (3)	0.001	J	mg/kg	0.001	-	-
56-55-3	Benzo(a)anthracene	mg/kg	0.28	0.358	0.41	J	mg/kg	0.358	95% KM Student-t [5]	Non-parametric
50-32-8	Benzo(a)pyrene	mg/kg	0.21	**0.390**	0.31	J	mg/kg	0.390	95% KM Student-t [5]	Non-parametric
205-99-2	Benzo(b)fluoranthene	mg/kg	0.17	**0.282**	0.23	J	mg/kg	0.282	95% KM Student-t [5]	Non-parametric
191-24-2	Benzo(ghi)perylene	mg/kg	0.10	**0.187**	0.15	J	mg/kg	0.187	95% KM Student-t [5]	Non-parametric
207-08-9	Benzo(k)fluoranthene	mg/kg	0.21	**0.372**	0.3	J	mg/kg	0.372	95% KM Student-t [5]	Non-parametric
218-01-9	Chrysene	mg/kg	0.25	**0.434**	0.35	J	mg/kg	0.434	95% KM Student-t [5]	Non-parametric
53-70-3	Dibenz(a,h)anthracene	mg/kg	0.06	- (3)	0.06	J	mg/kg	0.06	-	-
132-64-9	Dibenzofuran	mg/kg	0.05	- (3)	0.05	J	mg/kg	0.05	-	-
193-39-5	Indeno(1,2,3-cd)pyrene	mg/kg	0.10	**0.187**	0.15	J	mg/kg	0.187	95% KM Student-t [5]	Non-parametric
85-01-8	Phenanthrene	mg/kg	0.53	0.449	0.72		mg/kg	0.449	95% KM Student-t [5]	Non-parametric
7429-90-5	Aluminum	mg/kg	14,950	16,097	18,100		mg/kg	16,097	95% Student's-t UCL	Normal
7440-38-2	Arsenic	mg/kg	3.3	3.6	4.5		mg/kg	3.60	95% Student's-t UCL	Normal
7440-48-4	Cobalt	mg/kg	10.0	12.2	19.4		mg/kg	12.24	95% Student's-t UCL	Normal
7439-89-6	Iron	mg/kg	22,817	25,037	28,200		mg/kg	25,037	95% Student's-t UCL	Normal
7439-96-5	Manganese	mg/kg	647.8	1,512	2,770		mg/kg	1,512	95% Student's-t UCL	Normal

Notes:

1. Field duplicates were not averaged and presented as discreet samples. Laboratory duplicates were not included in the assessment. Non-detectes were included in the dataset and 95% UCL analysis was performed as 'With ND' in ProUCL.
2. The EPCs were calculated using the ProUCL (Version 4.00.02) and the EPCs were selected in accordance with the ProUCL Version 4.0 User Guide (USEPA, 2004) and the Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites (USEPA, 2002).
   Q - qualifier
   J = Estimated Value
   KM = Kaplan-Meier statistical method
3. Insufficient number of detects in the dataset to perform 95th UCL analysis in ProUCL. This typical means there was a single detect in the dataset for this compound.
4. Bold values represent ProUCL recommened values that are greater than maximum detected value for a compound.
5. Insufficient number of detects in dataset to get meaningful results from ProUCL. Warning message from ProUCL regarding dataset:

TABLE 3B
AMBIENT AIR EXPOSURE POINT CONCENTRATIONS
FOR PARK WORKERS, VISITORS, RESIDENTS AT SEAD 002-R-01 (EOD-2)
SENECA ARMY DEPOT ACTIVITY

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Air
Exposure Point:	SEAD 002-R-01 (EOD-2)

Equation for Air EPC from Surface Soil (mg/m^3) = CSsurf x PM10 x CF

Variables:
CSsurf = Chemical Concentration in Surface Soil, from EPC data (mg/kg)
PM10 = Average Measured PM10 Concentration = 32.21 ug/m^3
CF = Conversion Factor = 1E-9 kg/ug

Analyte	Reasonable Maximum Exposure	
	EPC Data for Surface Soil (mg/kg)	**Calculated Air EPC Surface Soil** (mg/m^3)
Methyl cyclohexane	1.1E-03	3.5E-11
Benzo(a)anthracene	3.6E-01	1.2E-08
Benzo(a)pyrene	3.9E-01	1.3E-08
Benzo(b)fluoranthene	2.8E-01	9.1E-09
Benzo(ghi)perylene	1.9E-01	6.0E-09
Benzo(k)fluoranthene	3.7E-01	1.2E-08
Chrysene	4.3E-01	1.4E-08
Dibenz(a,h)anthracene	5.9E-02	1.9E-09
Dibenzofuran	5.1E-02	1.6E-09
Indeno(1,2,3-cd)pyrene	1.9E-01	6.0E-09
Phenanthrene	4.5E-01	1.4E-08
Aluminum	1.6E+04	5.2E-04
Arsenic	3.6E+00	1.2E-07
Cobalt	1.2E+01	3.9E-07
Iron	2.5E+04	8.1E-04
Manganese	1.5E+03	4.9E-05

TABLE 4
CALCULATION OF INTAKE AND RISK FROM THE INGESTION OF SOIL
REASONABLE MAXIMUM EXPOSURE (RME) - SEAD-002-R-01 (EOD-2)
SENECA ARMY DEPOT ACTIVITY

Equation for Intake (mg/kg-day) = $\frac{EPC \times IR \times CF \times FI \times EF \times ED \times B}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):

EPC = Exposure Point Concentration in Soil, mg/kg		EF = Exposure Frequency
IR = Ingestion Rate		ED = Exposure Duration
CF = Conversion Factor	B = Bioavailability	BW = Bodyweight
FI = Fraction Ingested		AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Oral RfD	Carc. Slope Oral	Bioavailability	EPC Surface Soil	Park Worker				Construction Worker				Recreational Child Visitor			
					Intake (mg/kg-day)		Hazard Quotient	Cancer Risk	Intake (mg/kg-day)		Hazard Quotient	Cancer Risk	Intake (mg/kg-day)		Hazard Quotient	Cancer Risk
	(mg/kg-day)	(mg/kg-day)-1	(unitless)	(mg/kg)	(Nc)	(Car)			(Nc)	(Car)			(Nc)	(Car)		
Methyl cyclohexane	N/A	N/A	1	1.1E-03												
Benzo(a)anthracene	N/A	7.3E-01	1	3.6E-01		8.76E-08		6E-08		1.65E-08		1E-08		1.31E-08		1E-08
Benzo(a)pyrene	N/A	7.3E+00	1	3.9E-01		9.53E-08		7E-07		1.80E-08		1E-07		1.42E-08		1E-07
Benzo(b)fluoranthene	N/A	7.3E-01	1	2.8E-01		6.89E-08		5E-08		1.30E-08		9E-09		1.03E-08		8E-09
Benzo(ghi)perylene	N/A	N/A	1	1.9E-01												
Benzo(k)fluoranthene	N/A	7.3E-02	1	3.7E-01		9.09E-08		7E-09		1.71E-08		1E-09		1.36E-08		1E-09
Chrysene	3.00E-04	7.3E-03	1	4.3E-01	2.97E-07	1.06E-07	1E-03	8E-10	1.40E-06	2.00E-08	5E-03	1E-10	2.22E-07	1.58E-08	7E-04	1E-10
Dibenz(a,h)anthracene	N/A	7.3E+00	1	5.9E-02		1.44E-08		1E-07		2.72E-09		2E-08		2.16E-09		2E-08
Dibenzofuran	N/A	N/A	1	5.1E-02												
Indeno(1,2,3-cd)pyrene	N/A	7.3E-01	1	1.9E-01		4.57E-08		3E-08		8.63E-09		6E-09		6.83E-09		5E-09
Phenanthrene	N/A	N/A	1	4.5E-01												
Aluminum	1.00E+00	N/A	1	1.6E+04	1.10E-02		1E-02		5.20E-02		5E-02		8.23E-03		8E-03	
Arsenic	3.00E-04	1.5E+00	1	3.6E+00	2.47E-06	8.81E-07	8E-03	1E-06	1.16E-05	1.66E-07	4E-02	2E-07	1.84E-06	1.32E-07	6E-03	2E-07
Cobalt	3.00E-04	N/A	1	1.2E+01	8.38E-06		3E-02		3.95E-05		1E-01		6.26E-06		2E-02	
Iron	3.00E-01	N/A	1	2.5E+04	1.71E-02		6E-02		8.08E-02		3E-01		1.28E-02		4E-02	
Manganese	2.40E-02	N/A	1	1.5E+03	1.04E-03		4E-02		4.88E-03		2E-01		7.73E-04		3E-02	
Total Hazard Quotient and Cancer Risk:							**1E-01**	**2E-06**			**7E-01**	**4E-07**			**1E-01**	**3E-07**

Assumptions for Park Worker		Assumptions for Construction Worker		Assumptions for Recreational Child Visitor	
CF =	1E-06 kg/mg	CF =	1E-06 kg/mg	CF =	1E-06 kg/mg
EPC=	EPC Surface Only	EPC=	EPC Surface and Subsurface	EPC=	EPC Surface Only
BW =	70 kg	BW =	70 kg	BW =	15 kg
IR =	100 mg/day	IR =	330 mg/day	IR =	200 mg/day
FI =	1 unitless	FI =	1 unitless	FI =	1 unitless
EF =	175 days/year	EF =	250 days/year	EF =	14 days/year
ED =	25 years	ED =	1 years	ED =	5 years
AT (Nc) =	9,125 days	AT (Nc) =	365 days	AT (Nc) =	1,825 days
AT (Car) =	25,550 days	AT (Car) =	25,550 days	AT (Car) =	25,550 days

TABLE 5
CALCULATION OF ABSORBED DOSE AND RISK FROM DERMAL CONTACT TO SOIL
REASONABLE MAXIMUM EXPOSURE (RME) - SEAD-002-R-01 (EOD-2) SOIL
SENECA ARMY DEPOT ACTIVITY

Equation for Intake (mg/kg-day) = $\frac{EPC \times CF \times SA \times AF \times ABS \times EV \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):

EPC = Chemical Concentration in Soil, mg/kg
CF = Conversion Factor
SA = Surface Area Contact
AF = Adherence Factor
ABS = Absorption Factor
EV = Event Frequency
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Dermal RfD	Carc. Slope Dermal	Absorption Fraction*	EPC Surface Soil	EPC from Total Soils	Park Worker				Construction Worker				Recreational Child Visitor			
						Absorbed Dose (mg/kg-day)		Hazard Quotient	Cancer Risk	Absorbed Dose (mg/kg-day)		Hazard Quotient	Cancer Risk	Absorbed Dose (mg/kg-day)		Hazard Quotient	Cancer Risk
	(mg/kg-day)	(mg/kg-day)-1	(unitless)	(mg/kg)	(mg/kg)	(Nc)	(Car)			(Nc)	(Car)			(Nc)	(Car)		
Methyl cyclohexane	N/A	N/A	1.0E-02	1.1E-03	1.1E-03												
Benzo(a)anthracene	N/A	7.3E-01	1.3E-01	3.6E-01	3.6E-01		7.51E-08		5E-08		6.44E-09		5E-09		4.76E-09		3.47E-09
Benzo(a)pyrene	N/A	7.3E+00	1.3E-01	3.9E-01	3.9E-01		8.18E-08		6E-07		7.01E-09		5E-08		5.18E-09		3.78E-08
Benzo(b)fluoranthene	N/A	7.3E-01	1.3E-01	2.8E-01	2.8E-01		5.91E-08		4E-08		5.07E-09		4E-09		3.75E-09		2.73E-09
Benzo(ghi)perylene	N/A	N/A	1.3E-01	1.9E-01	1.9E-01												
Benzo(k)fluoranthene	N/A	7.3E-02	1.3E-01	3.7E-01	3.7E-01		7.80E-08		6E-09		6.69E-09		5E-10		4.94E-09		3.61E-10
Chrysene	3.00E-04	7.3E-03	1.3E-01	4.3E-01	4.3E-01	2.55E-07	9.10E-08	8E-04	7E-10	5.46E-07	7.80E-09	2E-03	6E-11	8.07E-08	5.77E-09	2.69E-04	4.21E-11
Dibenz(a,h)anthracene	N/A	7.3E+00	1.3E-01	5.9E-02	5.9E-02		1.24E-08		9E-08		1.06E-09		8E-09		7.85E-10		5.73E-09
Dibenzofuran	N/A	N/A	1.0E-01	5.1E-02	5.1E-02												
Indeno(1,2,3-cd)pyrene	N/A	7.3E-01	1.3E-01	1.9E-01	1.9E-01		3.92E-08		3E-08		3.36E-09		2E-09		2.49E-09		1.82E-09
Phenanthrene	N/A	N/A	1.3E-01	4.5E-01	4.5E-01												
Aluminum	1.00E+00	N/A	1.0E-03	1.6E+04	1.6E+04	7.28E-05		7E-05		1.56E-04		2E-04		2.31E-05		2.31E-05	
Arsenic	3.00E-04	1.5E+00	3.0E-02	3.6E+00	3.6E+00	4.88E-07	1.74E-07	2E-03	3E-07	1.05E-06	1.50E-08	3E-03	2E-08	1.55E-07	1.11E-08	5.16E-04	1.66E-08
Cobalt	3.00E-04	N/A	1.0E-03	1.2E+01	1.2E+01	5.53E-08		2E-04		1.19E-07		4E-04		1.75E-08		5.84E-05	
Iron	3.00E-01	N/A	1.0E-03	2.5E+04	2.5E+04	1.13E-04		4E-04		2.43E-04		8E-04		3.59E-05		1.20E-04	
Manganese	9.60E-04	N/A	1.0E-03	1.5E+03	1.5E+03	6.84E-06		7E-03		1.46E-05		2E-02		2.17E-06		2.26E-03	
Total Hazard Quotient and Cancer Risk:								**1E-02**	**1E-06**			**2E-02**	**9E-08**			**3E-03**	**7E-08**

Assumptions for Park Worker		Assumptions for Construction Worker		Assumptions for Recreational Child Visitor	
CF =	1E-06 kg/mg	CF =	1E-06 kg/mg	CF =	1E-06 kg/mg
CS =	EPC Surface Only	EPC =	EPC Surface and Subsurface	EPC =	EPC Surface Only
BW =	70 kg	BW =	70 kg	BW =	15 kg
SA =	3,300 cm^2	SA =	3,300 cm^2	SA =	2,800 cm^2
AF =	0.2 mg/cm^2-event	AF =	0.3 mg/cm^2-event	AF =	0.2 mg/cm^2-event
EV =	1 event/day	EV =	1 event/day	EV =	1 event/day
EF =	175 days/year	EF =	250 days/year	EF =	14 days/year
ED =	25 years	ED =	1 years	ED =	5 years
AT (Nc) =	9,125 days	AT (Nc) =	365 days	AT (Nc) =	1,825 days
AT (Car) =	25,550 days	AT (Car) =	25,550 days	AT (Car) =	25,550 days

TABLE 6
CALCULATION OF INTAKE AND RISK FROM INHALATION OF DUST IN AMBIENT AIR
REASONABLE MAXIMUM EXPOSURE (RME) - SEAD-002-R-01 (EOD-2) SOIL
SENECA ARMY DEPOT ACTIVITY

Equation for Intake (mg/kg-day) = $\frac{EPC \times IR \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):

EPC = EPC in Air, mg/m3
IR = Inhalation Rate
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Inhalation RfD	Carc. Slope Inhalation	Air EPC from Surface Soil	Air EPC from Total Soils	Park Worker				Construction Worker				Recreational Child Visitor			
					Intake (mg/kg-day)		Hazard Quotient	Cancer Risk	Intake (mg/kg-day)		Hazard Quotient	Cancer Risk	Intake (mg/kg-day)		Hazard Quotient	Cancer Risk
	(mg/kg-day)	(mg/kg-day)-1	(mg/m^3)	(mg/m^3)	(Nc)	(Car)			(Nc)	(Car)			(Nc)	(Car)		
Methyl cyclohexane	8.57E-01	N/A	3.5E-11	3.5E-11	1.94E-12		2E-12		3.61E-12		4E-12		7.88E-13		9E-13	
Benzo(a)anthracene	N/A	N/A	1.2E-08	1.2E-08												
Benzo(a)pyrene	N/A	3.85E+00	1.3E-08	1.3E-08		2.46E-10		9E-10		1.82E-11		7E-11		1.99E-11		8E-11
Benzo(b)fluoranthene	N/A	3.85E-01	9.1E-09	9.1E-09		1.78E-10		7E-11		1.32E-11		5E-12		1.44E-11		6E-12
Benzo(ghi)perylene	N/A	N/A	6.0E-09	6.0E-09												
Benzo(k)fluoranthene	N/A	3.85E-01	1.2E-08	1.2E-08		2.34E-10		9E-11		1.74E-11		7E-12		1.90E-11		7E-12
Chrysene	N/A	3.85E-02	1.4E-08	1.4E-08		2.73E-10		1E-11		2.03E-11		8E-13		2.22E-11		9E-13
Dibenz(a,h)anthracene	N/A	4.20E+00	1.9E-09	1.9E-09		3.72E-11		2E-10		2.76E-12		1E-11		3.02E-12		1E-11
Dibenzofuran	N/A	N/A	1.6E-09	1.6E-09												
Indeno(1,2,3-cd)pyrene	N/A	3.85E-01	6.0E-09	6.0E-09		1.18E-10		5E-11		8.76E-12		3E-12		9.57E-12		4E-12
Phenanthrene	N/A	N/A	1.4E-08	1.4E-08												
Aluminum	1.43E-03	N/A	5.2E-04	5.2E-04	2.84E-05		2E-02		5.28E-05		4E-02		1.15E-05		8E-03	
Arsenic	N/A	1.51E+01	1.2E-07	1.2E-07		2.27E-09		3E-08		1.69E-10		3E-09		1.84E-10		3E-09
Cobalt	1.71E-06	3.15E+01	3.9E-07	3.9E-07	2.16E-08	7.71E-09	1E-02	2E-07	4.01E-08	5.73E-10	2E-02	2E-08	8.77E-09	6.26E-10	5E-03	2E-08
Iron	N/A	N/A	8.1E-04	8.1E-04												
Manganese	1.43E-05	N/A	4.9E-05	4.9E-05	2.67E-06		2E-01		4.96E-06		3E-01		1.08E-06		8E-02	
Total Hazard Quotient and Cancer Risk:							**2E-01**	**3E-07**			**4E-01**	**2E-08**			**9E-02**	**2E-08**

Assumptions for Park Worker		Assumptions for Construction Worker		Assumptions for Recreational Child Visitor	
CA =	EPC Surface Only	CA =	EPC Surface and Sub-Surface	CA =	EPC Surface Only
BW =	70 kg	BW =	70 kg	BW =	15 kg
IR =	8 m3/day	IR =	10.4 m3/day	IR =	8.7 m3/day
EF =	175 days/year	EF =	250 days/year	EF =	14 days/year
ED =	25 years	ED =	1 year	ED =	5 years
AT (Nc) =	9,125 days	AT (Nc) =	365 days	AT (Nc) =	1,825 days
AT (Car) =	25,550 days	AT (Car) =	25,550 days	AT (Car) =	25,550 days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.

TABLE 7
CALCULATION OF TOTAL NONCARCINOGENIC AND CARCINOGENIC RISKS - SEAD-002-R-01 (EOD-2)
REASONABLE MAXIMUM EXPOSURE (RME)
SENECA ARMY DEPOT ACTIVITY

RECEPTOR	EXPOSURE ROUTE	REASONABLE MAXIMUM EXPOSURE (RME)			
		HAZARD INDEX		CANCER RISK	
		Hazard Index	Percent Contribution	Cancer Risk	Percent Contribution
PARK WORKER	Inhalation of Dust in Ambient Air	2E-01	58%	3E-07	8%
	Ingestion of Soil	1E-01	39%	2E-06	63%
	Dermal Contact to Soil	1E-02	3%	1E-06	30%
	TOTAL RECEPTOR RISK (Nc & Car)	*4E-01*	100%	*4E-06*	100%
CONSTRUCTION WORKER	Inhalation of Dust in Ambient Air	4E-01	36%	2E-08	4%
	Ingestion of Soil	7E-01	62%	4E-07	79%
	Dermal Contact to Soil	2E-02	2%	9E-08	17%
	TOTAL RECEPTOR RISK (Nc & Car)	*1E+00*	100%	*5E-07*	100%
RECREATIONAL CHILD VISITOR	Inhalation of Dust in Ambient Air	9E-02	44%	2E-08	5%
	Ingestion of Soil	1E-01	55%	3E-07	79%
	Dermal Contact to Soil	3E-03	2%	7E-08	16%
	TOTAL RECEPTOR RISK (Nc & Car)	*2E-01*	100%	*4E-07*	100%
RESIDENT (ADULT)	Inhalation of Dust in Ambient Air	1E+00	78%	1E-06	19%
	Ingestion of Soil	3E-01	21%	4E-06	63%
	Dermal Contact to Soil	1E-02	1%	1E-06	18%
	TOTAL RECEPTOR RISK (Nc & Car)	*1E+00*	100%	*7E-06*	100%
RESIDENT (CHILD)	Inhalation of Dust in Ambient Air	2E+00	44%	7E-07	5%
	Ingestion of Soil	3E+00	55%	1E-05	79%
	Dermal Contact to Soil	8E-02	2%	2E-06	16%
	TOTAL RECEPTOR RISK (Nc & Car)	*5E+00*	100%	*1E-05*	100%
RESIDENT (TOTAL)	Inhalation of Dust in Ambient Air			2E-06	10%
	Ingestion of Soil			1E-05	73%
	Dermal Contact to Soil			3E-06	17%
	TOTAL RECEPTOR CANCER RISK			*2E-05*	100%

NA - Not Applicable

Attachment D

SEAD-002-R-01 – EOD-3

TABLE 1
SEAD-002-R-01 (EOD-3) SOIL SAMPLE RESULTS
SENECA ARMY DEPOT ACTIVITY

SITE LOCATION							EOD3	EOD3	EOD3	EOD3	EOD3
LOCATION ID							EOD3-F18	EOD3-F19	EOD3-G18	EOD3-G19	EOD3-H18
MATRIX							SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID							002R011013	002R011014	002R011016	002R011015	002R011017
TOP OF SAMPLE							0	0	0	0	0
BOTTOM OF SAMPLE							0.2	0.2	0.2	0.2	0.2
SAMPLE DATE							12/11/2006	12/11/2006	12/11/2006	12/11/2006	12/12/2006
QC CODE							SA	SA	SA	SA	SA
STUDY ID							RA	RA	RA	RA	RA
Parameter	**Units**	**Maximum Concentration**	**Frequency of Detection**	**NYSDEC Unrestricted Use Value (1)**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Volatile Organic Compounds												
1,1,1-Trichloroethane	UG/KG	0	0%	680	0	0	8	7.7 U	8.8 U	7.2 U	11 U	5.2 U
1,1,2,2-Tetrachloroethane	UG/KG	0	0%		0	0	8	7.7 U	8.8 U	7.2 U	11 U	5.2 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/KG	0	0%		0	0	8	7.7 U	8.8 U	7.2 U	11 U	5.2 U
1,1,2-Trichloroethane	UG/KG	0	0%		0	0	8	7.7 U	8.8 U	7.2 U	11 U	5.2 U
1,1-Dichloroethane	UG/KG	0	0%	270	0	0	8	7.7 U	8.8 U	7.2 U	11 U	5.2 U
1,1-Dichloroethene	UG/KG	0	0%	330	0	0	8	7.7 U	8.8 U	7.2 U	11 U	5.2 U
1,2,4-Trichlorobenzene	UG/KG	0	0%		0	0	8	7.7 U	8.8 U	7.2 U	11 U	5.2 U
1,2-Dibromo-3-chloropropane	UG/KG	0	0%		0	0	8	7.7 UJ	8.8 U	7.2 U	11 U	5.2 U
1,2-Dibromoethane	UG/KG	0	0%		0	0	8	7.7 U	8.8 U	7.2 U	11 U	5.2 U
1,2-Dichlorobenzene	UG/KG	0	0%	1100	0	0	8	7.7 U	8.8 U	7.2 U	11 U	5.2 U
1,2-Dichloroethane	UG/KG	0	0%	20	0	0	8	7.7 U	8.8 U	7.2 U	11 U	5.2 U
1,2-Dichloropropane	UG/KG	0	0%		0	0	8	7.7 U	8.8 U	7.2 U	11 U	5.2 U
1,3-Dichlorobenzene	UG/KG	0	0%	2400	0	0	8	7.7 U	8.8 U	7.2 U	11 U	5.2 U
1,4-Dichlorobenzene	UG/KG	0	0%	1800	0	0	8	7.7 U	8.8 U	7.2 U	11 U	5.2 U
Acetone	UG/KG	260	100%	50	6	8	8	120	49	92	62	24
Benzene	UG/KG	0.49	13%	60	0	1	8	7.7 U	8.8 U	7.2 U	11 U	0.49 J
Bromodichloromethane	UG/KG	0	0%		0	0	8	7.7 U	8.8 U	7.2 U	11 U	5.2 U
Bromoform	UG/KG	0	0%		0	0	8	7.7 U	8.8 U	7.2 U	11 U	5.2 U
Carbon disulfide	UG/KG	0.79	13%		0	1	8	15 U	18 U	14 U	21 U	0.79 J
Carbon tetrachloride	UG/KG	0	0%	760	0	0	8	7.7 U	8.8 U	7.2 U	11 U	5.2 U
Chlorobenzene	UG/KG	0	0%	1100	0	0	8	7.7 U	8.8 U	7.2 U	11 U	5.2 U
Chlorodibromomethane	UG/KG	0	0%		0	0	8	7.7 U	8.8 U	7.2 U	11 U	5.2 U
Chloroethane	UG/KG	0	0%		0	0	8	15 U	18 U	14 U	21 U	10 U
Chloroform	UG/KG	0	0%	370	0	0	8	7.7 U	8.8 U	7.2 U	11 U	5.2 U
Cis-1,2-Dichloroethene	UG/KG	0	0%	250	0	0	8	7.7 U	8.8 U	7.2 U	11 U	5.2 U
Cis-1,3-Dichloropropene	UG/KG	0	0%		0	0	8	7.7 U	8.8 U	7.2 U	11 U	5.2 U
Cyclohexane	UG/KG	1.2	13%		0	1	8	7.7 UJ	8.8 U	7.2 U	11 U	1.2 J
Dichlorodifluoromethane	UG/KG	0	0%		0	0	8	7.7 U	8.8 U	7.2 U	11 U	5.2 U
Ethyl benzene	UG/KG	0	0%	1000	0	0	8	7.7 U	8.8 U	7.2 U	11 U	5.2 U
Isopropylbenzene	UG/KG	0	0%		0	0	8	7.7 U	8.8 U	7.2 U	11 U	5.2 U
Meta Para Xylene	UG/KG	0	0%		0	0	8	7.7 U	8.8 U	7.2 U	11 U	5.2 U
Methyl Acetate	UG/KG	0	0%		0	0	8	15 UJ	18 U	14 U	21 U	10 UJ
Methyl Tertbutyl Ether	UG/KG	0	0%	930	0	0	8	7.7 U	8.8 U	7.2 U	11 U	5.2 U
Methyl bromide	UG/KG	0	0%		0	0	8	7.7 U	8.8 U	7.2 U	11 U	5.2 U
Methyl butyl ketone	UG/KG	0	0%		0	0	8	15 UJ	18 U	14 U	21 U	10 U
Methyl chloride	UG/KG	0	0%		0	0	8	7.7 U	8.8 U	7.2 U	11 U	5.2 U
Methyl cyclohexane	UG/KG	1.3	13%		0	1	8	7.7 UJ	8.8 U	7.2 U	11 U	1.3 J
Methyl ethyl ketone	UG/KG	23	88%	120	0	7	8	6.5 J	5.4 J	9.7 J	5.1 J	10 U
Methyl isobutyl ketone	UG/KG	0	0%		0	0	8	15 UJ	18 U	14 U	21 U	10 U
Methylene chloride	UG/KG	2.5	100%	50	0	8	8	1.7 J	2.5 J	1.6 J	2.1 J	0.84 J
Ortho Xylene	UG/KG	0	0%		0	0	8	7.7 U	8.8 U	7.2 U	11 U	5.2 U
Styrene	UG/KG	0	0%		0	0	8	7.7 U	8.8 U	7.2 U	11 U	5.2 U
Tetrachloroethene	UG/KG	0	0%	1300	0	0	8	7.7 U	8.8 U	7.2 U	11 U	5.2 U
Toluene	UG/KG	0.55	25%	700	0	2	8	0.48 J	8.8 U	7.2 U	11 U	0.55 J
Trans-1,2-Dichloroethene	UG/KG	0	0%	190	0	0	8	7.7 U	8.8 U	7.2 U	11 U	5.2 U
Trans-1,3-Dichloropropene	UG/KG	0	0%		0	0	8	7.7 U	8.8 U	7.2 U	11 U	5.2 U
Trichloroethene	UG/KG	0	0%	470	0	0	8	7.7 U	8.8 U	7.2 U	11 U	5.2 U
Trichlorofluoromethane	UG/KG	0	0%		0	0	8	7.7 U	8.8 U	7.2 U	11 U	5.2 U
Vinyl chloride	UG/KG	0	0%	20	0	0	8	7.7 U	8.8 U	7.2 U	11 U	5.2 U

TABLE 1
SEAD-002-R-01 (EOD-3) SOIL SAMPLE RESULTS
SENECA ARMY DEPOT ACTIVITY

SITE LOCATION								EOD3	EOD3	EOD3	EOD3	EOD3
LOCATION ID								EOD3-F18	EOD3-F19	EOD3-G18	EOD3-G19	EOD3-H18
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								002R011013	002R011014	002R011016	002R011015	002R011017
TOP OF SAMPLE								0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								12/11/2006	12/11/2006	12/11/2006	12/11/2006	12.12.2006
QC CODE								SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA
Parameter	**Units**	**Maximum Concentration**	**Frequency of Detection**	**NYSDEC Unrestricted Use Value (1)**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Fluoranthene	UG/KG	0	0%	100000	0	0	8	460 U	520 U	440 U	590 U	400 U
Fluorene	UG/KG	0	0%	30000	0	0	8	460 U	520 U	440 U	590 U	400 U
Hexachlorobenzene	UG/KG	0	0%	330	0	0	8	460 U	520 U	440 U	590 U	400 U
Hexachlorobutadiene	UG/KG	0	0%		0	0	8	460 U	520 U	440 U	590 U	400 U
Hexachlorocyclopentadiene	UG/KG	0	0%		0	0	8	460 U	520 U	440 U	590 U	400 U
Hexachloroethane	UG/KG	0	0%		0	0	8	460 U	520 U	440 U	590 U	400 U
Indeno(1,2,3-cd)pyrene	UG/KG	0	0%	500	0	0	8	460 U	520 U	440 U	590 U	400 U
Isophorone	UG/KG	0	0%		0	0	8	460 U	520 U	440 U	590 U	400 U
N-Nitrosodiphenylamine	UG/KG	0	0%		0	0	8	460 U	520 U	440 U	590 U	400 U
N-Nitrosodipropylamine	UG/KG	0	0%		0	0	8	460 U	520 U	440 U	590 U	400 U
Naphthalene	UG/KG	0	0%	12000	0	0	8	460 U	520 U	440 U	590 U	400 U
Nitrobenzene	UG/KG	0	0%		0	0	8	460 U	520 U	440 U	590 U	400 U
Pentachlorophenol	UG/KG	0	0%	800	0	0	8	2300 U	2700 U	2300 U	3000 U	2100 U
Phenanthrene	UG/KG	0	0%	100000	0	0	8	460 U	520 U	440 U	590 U	400 U
Phenol	UG/KG	0	0%	330	0	0	8	460 U	520 U	440 U	590 U	400 U
Pyrene	UG/KG	0	0%	100000	0	0	8	460 U	520 U	440 U	590 U	400 U
Explosives												
1,3,5-Trinitrobenzene	UG/KG	0	0%		0	0	8	2000 U	2000 U	2000 U	2000 U	2000 U
1,3-Dinitrobenzene	UG/KG	0	0%		0	0	8	2000 U	2000 U	2000 U	2000 U	2000 U
2,4,6-Trinitrotoluene	UG/KG	0	0%		0	0	8	2000 U	2000 U	2000 U	2000 U	2000 U
2,4-Dinitrotoluene	UG/KG	0	0%		0	0	8	2000 U	2000 U	2000 U	2000 U	2000 U
2,6-Dinitrotoluene	UG/KG	0	0%		0	0	8	1000 U	1000 U	1000 U	1000 U	1000 U
2-Nitrotoluene	UG/KG	0	0%		0	0	8	2000 U	2000 U	2000 U	2000 U	2000 U
2-amino-4,6-Dinitrotoluene	UG/KG	0	0%		0	0	8	2000 U	2000 U	2000 U	2000 U	2000 U
3-Nitrotoluene	UG/KG	0	0%		0	0	8	2000 U	2000 U	2000 U	2000 U	2000 U
4-Nitrotoluene	UG/KG	0	0%		0	0	8	2000 U	2000 U	2000 U	2000 U	2000 U
4-amino-2,6-Dinitrotoluene	UG/KG	0	0%		0	0	8	2000 U	2000 U	2000 U	2000 U	2000 U
HMX	UG/KG	0	0%		0	0	8	2000 U	2000 U	2000 U	2000 U	2000 U
Nitrobenzene	UG/KG	0	0%		0	0	8	500 U	500 U	500 U	500 U	500 U
Nitroglycerine	UG/KG	0	0%		0	0	8	2000 U	2000 U	2000 U	2000 U	2000 U
Pentaerythritol Tetranitrate	UG/KG	0	0%		0	0	8	2000 U	2000 U	2000 U	2000 U	2000 U
RDX	UG/KG	0	0%		0	0	8	2000 U	2000 U	2000 U	2000 U	2000 U
Tetryl	UG/KG	0	0%		0	0	8	2000 U	2000 U	2000 U	2000 U	2000 U
PCBs												
Aroclor-1016	UG/KG	0	0%		0	0	8	46 U	52 U	44 U	59 U	40 U
Aroclor-1221	UG/KG	0	0%		0	0	8	92 U	110 U	89 U	120 U	82 U
Aroclor-1232	UG/KG	0	0%		0	0	8	46 U	52 U	44 U	59 U	40 U
Aroclor-1242	UG/KG	0	0%		0	0	8	46 U	52 U	44 U	59 U	40 U
Aroclor-1248	UG/KG	0	0%		0	0	8	46 U	52 U	44 U	59 U	40 U
Aroclor-1254	UG/KG	0	0%		0	0	8	46 U	52 U	44 U	59 U	40 U
Aroclor-1260	UG/KG	0	0%		0	0	8	46 U	52 U	44 U	59 U	40 U
Pesticides												
4,4'-DDD	UG/KG	0	0%	3.3	0	0	8	4.6 U	5.2 U	4.4 U	5.9 U	4 U
4,4'-DDE	UG/KG	0	0%	3.3	0	0	8	4.6 U	5.2 U	4.4 U	5.9 U	4 U
4,4'-DDT	UG/KG	0	0%	3.3	0	0	8	4.6 U	5.2 U	4.4 U	5.9 U	4 U
Aldrin	UG/KG	0	0%	5	0	0	8	2.3 U	2.7 U	2.3 U	3 U	2.1 U
Alpha-BHC	UG/KG	0	0%	20	0	0	8	2.3 U	2.7 U	2.3 U	3 U	2.1 U
Alpha-Chlordane	UG/KG	0	0%	94	0	0	8	2.3 U	2.7 U	2.3 U	3 U	2.1 U
Beta-BHC	UG/KG	0	0%	36	0	0	8	2.3 U	2.7 U	2.3 U	3 U	2.1 U
Delta-BHC	UG/KG	0	0%	40	0	0	8	2.3 U	2.7 U	2.3 U	3 U	2.1 U

TABLE 1
SEAD-002-R-01 (EOD-3) SOIL SAMPLE RESULTS
SENECA ARMY DEPOT ACTIVITY

SITE LOCATION								EOD3	EOD3	EOD3	EOD3
LOCATION ID								EOD3-H19	EOD3-I18	EOD3-I18	EOD3-I19
MATRIX								SOIL	SOIL	SOIL	SOIL
SAMPLE ID								002R011018	002R011021	002R011020	002R011019
TOP OF SAMPLE								0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2
SAMPLE DATE								12/12/2006	12/12/2006	12/12/2006	12/12/2006
QC CODE								SA	DU	SA	SA
STUDY ID								RA	RA	RA	RA
Parameter	**Units**	**Maximum Concentration**	**Frequency of Detection**	**NYSDEC Unrestricted Use Value (1)**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Volatile Organic Compounds											
1,1,1-Trichloroethane	UG/KG	0	0%	680	0	0	8	6.7 U	7.5 U	7.3 U	7.1 U
1,1,2,2-Tetrachloroethane	UG/KG	0	0%		0	0	8	6.7 U	7.5 U	7.3 U	7.1 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/KG	0	0%		0	0	8	6.7 U	7.5 U	7.3 U	7.1 U
1,1,2-Trichloroethane	UG/KG	0	0%		0	0	8	6.7 U	7.5 U	7.3 U	7.1 U
1,1-Dichloroethane	UG/KG	0	0%	270	0	0	8	6.7 U	7.5 U	7.3 U	7.1 U
1,1-Dichloroethene	UG/KG	0	0%	330	0	0	8	6.7 U	7.5 U	7.3 U	7.1 U
1,2,4-Trichlorobenzene	UG/KG	0	0%		0	0	8	6.7 U	7.5 U	7.3 U	7.1 U
1,2-Dibromo-3-chloropropane	UG/KG	0	0%		0	0	8	6.7 U	7.5 U	7.3 U	7.1 U
1,2-Dibromoethane	UG/KG	0	0%		0	0	8	6.7 U	7.5 U	7.3 U	7.1 U
1,2-Dichlorobenzene	UG/KG	0	0%	1100	0	0	8	6.7 U	7.5 U	7.3 U	7.1 U
1,2-Dichloroethane	UG/KG	0	0%	20	0	0	8	6.7 U	7.5 U	7.3 U	7.1 U
1,2-Dichloropropane	UG/KG	0	0%		0	0	8	6.7 U	7.5 U	7.3 U	7.1 U
1,3-Dichlorobenzene	UG/KG	0	0%	2400	0	0	8	6.7 U	7.5 U	7.3 U	7.1 U
1,4-Dichlorobenzene	UG/KG	0	0%	1800	0	0	8	6.7 U	7.5 U	7.3 U	7.1 U
Acetone	UG/KG	260	100%	50	6	8	8	**260**	**91** J	25 J	**120**
Benzene	UG/KG	0.49	13%	60	0	1	8	6.7 U	7.5 U	7.3 U	7.1 U
Bromodichloromethane	UG/KG	0	0%		0	0	8	6.7 U	7.5 U	7.3 U	7.1 U
Bromoform	UG/KG	0	0%		0	0	8	6.7 U	7.5 U	7.3 U	7.1 U
Carbon disulfide	UG/KG	0.79	13%		0	1	8	13 U	15 U	15 U	14 U
Carbon tetrachloride	UG/KG	0	0%	760	0	0	8	6.7 U	7.5 U	7.3 U	7.1 U
Chlorobenzene	UG/KG	0	0%	1100	0	0	8	6.7 U	7.5 U	7.3 U	7.1 U
Chlorodibromomethane	UG/KG	0	0%		0	0	8	6.7 U	7.5 U	7.3 U	7.1 U
Chloroethane	UG/KG	0	0%		0	0	8	13 U	15 U	15 U	14 U
Chloroform	UG/KG	0	0%	370	0	0	8	6.7 U	7.5 U	7.3 U	7.1 U
Cis-1,2-Dichloroethene	UG/KG	0	0%	250	0	0	8	6.7 U	7.5 U	7.3 U	7.1 U
Cis-1,3-Dichloropropene	UG/KG	0	0%		0	0	8	6.7 U	7.5 U	7.3 U	7.1 U
Cyclohexane	UG/KG	1.2	13%		0	1	8	6.7 U	7.5 U	7.3 U	7.1 U
Dichlorodifluoromethane	UG/KG	0	0%		0	0	8	6.7 U	7.5 U	7.3 U	7.1 U
Ethyl benzene	UG/KG	0	0%	1000	0	0	8	6.7 U	7.5 U	7.3 U	7.1 U
Isopropylbenzene	UG/KG	0	0%		0	0	8	6.7 U	7.5 U	7.3 U	7.1 U
Meta/Para Xylene	UG/KG	0	0%		0	0	8	6.7 U	7.5 U	7.3 U	7.1 U
Methyl Acetate	UG/KG	0	0%		0	0	8	13 UJ	15 UJ	15 U	14 UJ
Methyl Tertbutyl Ether	UG/KG	0	0%	930	0	0	8	6.7 U	7.5 U	7.3 U	7.1 U
Methyl bromide	UG/KG	0	0%		0	0	8	6.7 U	7.5 U	7.3 U	7.1 U
Methyl butyl ketone	UG/KG	0	0%		0	0	8	13 U	15 U	15 U	14 U
Methyl chloride	UG/KG	0	0%		0	0	8	6.7 U	7.5 U	7.3 U	7.1 U
Methyl cyclohexane	UG/KG	1.3	13%		0	1	8	6.7 U	7.5 U	7.3 U	7.1 U
Methyl ethyl ketone	UG/KG	23	88%	120	0	7	8	23	8.9 J	15 U	11 J
Methyl isobutyl ketone	UG/KG	0	0%		0	0	8	13 U	15 U	15 U	14 U
Methylene chloride	UG/KG	2.5	100%	50	0	8	8	1.8 J	1.5 J	0.81 J	1.4 J
Ortho Xylene	UG/KG	0	0%		0	0	8	6.7 U	7.5 U	7.3 U	7.1 U
Styrene	UG/KG	0	0%		0	0	8	6.7 U	7.5 U	7.3 U	7.1 U
Tetrachloroethene	UG/KG	0	0%	1300	0	0	8	6.7 U	7.5 U	7.3 U	7.1 U
Toluene	UG/KG	0.55	25%	700	0	2	8	6.7 U	7.5 U	7.3 U	7.1 U
Trans-1,2-Dichloroethene	UG/KG	0	0%	190	0	0	8	6.7 U	7.5 U	7.3 U	7.1 U
Trans-1,3-Dichloropropene	UG/KG	0	0%		0	0	8	6.7 U	7.5 U	7.3 U	7.1 U
Trichloroethene	UG/KG	0	0%	470	0	0	8	6.7 U	7.5 U	7.3 U	7.1 U
Trichlorofluoromethane	UG/KG	0	0%		0	0	8	6.7 U	7.5 U	7.3 U	7.1 U
Vinyl chloride	UG/KG	0	0%	20	0	0	8	6.7 U	7.5 U	7.3 U	7.1 U

TABLE 1
SEAD-002-R-01 (EOD-3) SOIL SAMPLE RESULTS
SENECA ARMY DEPOT ACTIVITY

SITE LOCATION								EOD3	EOD3	EOD3	EOD3
LOCATION ID								EOD3-H19	EOD3-I18	EOD3-I18	EOD3-I19
MATRIX								SOIL	SOIL	SOIL	SOIL
SAMPLE ID								002R011018	002R011021	002R011020	002R011019
TOP OF SAMPLE								0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2
SAMPLE DATE								12/12/2006	12/12/2006	12/12/2006	12/12/2006
QC CODE								SA	DU	SA	SA
STUDY ID								RA	RA	RA	RA
Parameter	**Units**	**Maximum Concentration**	**Frequency of Detection**	**NYSDEC Unrestricted Use Value (1)**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Fluoranthene	UG/KG	0	0%	100000	0	0	8	450 U	450 U	460 U	470 U
Fluorene	UG/KG	0	0%	30000	0	0	8	450 U	450 U	460 U	470 U
Hexachlorobenzene	UG/KG	0	0%	330	0	0	8	450 U	450 U	460 U	470 U
Hexachlorobutadiene	UG/KG	0	0%		0	0	8	450 U	450 U	460 U	470 U
Hexachlorocyclopentadiene	UG/KG	0	0%		0	0	8	450 U	450 U	460 U	470 U
Hexachloroethane	UG/KG	0	0%		0	0	8	450 U	450 U	460 U	470 U
Indeno(1,2,3-cd)pyrene	UG/KG	0	0%	500	0	0	8	450 U	450 U	460 U	470 U
Isophorone	UG/KG	0	0%		0	0	8	450 U	450 U	460 U	470 U
N-Nitrosodiphenylamine	UG/KG	0	0%		0	0	8	450 U	450 U	460 U	470 U
N-Nitrosodipropylamine	UG/KG	0	0%		0	0	8	450 U	450 U	460 U	470 U
Naphthalene	UG/KG	0	0%	12000	0	0	8	450 U	450 U	460 U	470 U
Nitrobenzene	UG/KG	0	0%		0	0	8	450 U	450 U	460 U	470 U
Pentachlorophenol	UG/KG	0	0%	800	0	0	8	2300 U	2300 U	2400 U	2400 U
Phenanthrene	UG/KG	0	0%	100000	0	0	8	450 U	450 U	460 U	470 U
Phenol	UG/KG	0	0%	330	0	0	8	450 U	450 U	460 U	470 U
Pyrene	UG/KG	0	0%	100000	0	0	8	450 U	450 U	460 U	470 U
Explosives											
1,3,5-Trinitrobenzene	UG/KG	0	0%		0	0	8	2000 U	2000 U	2000 U	2000 U
1,3-Dinitrobenzene	UG/KG	0	0%		0	0	8	2000 U	2000 U	2000 U	2000 U
2,4,6-Trinitrotoluene	UG/KG	0	0%		0	0	8	2000 U	2000 U	2000 U	2000 U
2,4-Dinitrotoluene	UG/KG	0	0%		0	0	8	2000 U	2000 U	2000 U	2000 U
2,6-Dinitrotoluene	UG/KG	0	0%		0	0	8	1000 U	1000 U	1000 U	1000 U
2-Nitrotoluene	UG/KG	0	0%		0	0	8	2000 U	2000 U	2000 U	2000 U
2-amino-4,6-Dinitrotoluene	UG/KG	0	0%		0	0	8	2000 U	2000 U	2000 U	2000 U
3-Nitrotoluene	UG/KG	0	0%		0	0	8	2000 U	2000 U	2000 U	2000 U
4-Nitrotoluene	UG/KG	0	0%		0	0	8	2000 U	2000 U	2000 U	2000 U
4-amino-2,6-Dinitrotoluene	UG/KG	0	0%		0	0	8	2000 U	2000 U	2000 U	2000 U
HMX	UG/KG	0	0%		0	0	8	2000 U	2000 U	2000 U	2000 U
Nitrobenzene	UG/KG	0	0%		0	0	8	500 U	500 U	500 U	500 U
Nitroglycerine	UG/KG	0	0%		0	0	8	2000 U	2000 U	2000 U	2000 U
Pentaerythritol Tetranitrate	UG/KG	0	0%		0	0	8	2000 U	2000 U	2000 U	2000 U
RDX	UG/KG	0	0%		0	0	8	2000 U	2000 U	2000 U	2000 U
Tetryl	UG/KG	0	0%		0	0	8	2000 U	2000 U	2000 U	2000 U
PCBs											
Aroclor-1016	UG/KG	0	0%		0	0	8	45 U	45 U	46 U	47 U
Aroclor-1221	UG/KG	0	0%		0	0	8	92 U	92 U	94 U	95 U
Aroclor-1232	UG/KG	0	0%		0	0	8	45 U	45 U	46 U	47 U
Aroclor-1242	UG/KG	0	0%		0	0	8	45 U	45 U	46 U	47 U
Aroclor-1248	UG/KG	0	0%		0	0	8	45 U	45 U	46 U	47 U
Aroclor-1254	UG/KG	0	0%		0	0	8	45 U	45 U	46 U	47 U
Aroclor-1260	UG/KG	0	0%		0	0	8	45 U	45 U	46 U	47 U
Pesticides											
4,4'-DDD	UG/KG	0	0%	3.3	0	0	8	4.5 U	4.5 U	4.6 U	4.7 U
4,4'-DDE	UG/KG	0	0%	3.3	0	0	8	4.5 U	4.5 U	4.6 U	4.7 U
4,4'-DDT	UG/KG	0	0%	3.3	0	0	8	4.5 U	4.5 U	4.6 U	4.7 U
Aldrin	UG/KG	0	0%	5	0	0	8	2.3 U	2.3 U	2.4 U	2.4 U
Alpha-BHC	UG/KG	0	0%	20	0	0	8	2.3 U	2.3 U	2.4 U	2.4 U
Alpha-Chlordane	UG/KG	0	0%	94	0	0	8	2.3 U	2.3 U	2.4 U	2.4 U
Beta-BHC	UG/KG	0	0%	36	0	0	8	2.3 U	2.3 U	2.4 U	2.4 U
Delta-BHC	UG/KG	0	0%	40	0	0	8	2.3 U	2.3 U	2.4 U	2.4 U

TABLE 2

OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN IN SEAD-002-R-01 (EOD-3) SOIL

SENECA ARMY DEPOT ACTIVITY

Scenario Time frame:	Curent/Future
Medium:	Soil
Exposure Medium:	Soil
Exposure Point:	SEAD 002-R-01 EOD 3

CAS Number	Chemical	Minimum Detected Concentration [1] (mg/kg)	Q	Maximum Detected Concentration [1] (mg/kg)	Q	Location of Maximum Concentration	Detection Frequency [1]	Range of Reporting Limits [1] (mg/kg)	Concentration Used for Screening [2] (mg/kg)	Background Value [3] (mg/kg)	Screening Value [4] (mg/kg)	Potential ARAR/TBC Source	ARAR / TBC Value [5] (mg/kg)	COPC Flag	Rationale for Contaminant Deletion or Selection [6]
VOC															
67-64-1	Acetone	0.024		0.26		EOD3-H19	9 / 9	0 - 0	0.26		6,100	NYSDEC Subpart 375-6	0.05	NO	BSL
71-43-2	Benzene	0.00049	J	0.00049	J	EOD3-H18	1 / 9	0.0067 - 0.01	0.00049		1.1	NYSDEC Subpart 375-6	0.06	NO	BSL
75-15-0	Carbon disulfide	0.00079	J	0.00079	J	EOD3-H18	1 / 9	0.013 - 0.02	0.00079		67			NO	BSL
110-82-7	Cyclohexane	0.0012	J	0.0012	J	EOD3-H18	1 / 9	0.0067 - 0.01	0.0012		720			NO	BSL
108-87-2	Methyl cyclohexane	0.0013	J	0.0013	J	EOD3-H18	1 / 9	0.0067 - 0.01	0.0013						NSV
78-93-3	Methyl ethyl ketone	0.0051	J	0.023		EOD3-H19	7 / 9	0.01 - 0.02	0.023		2,800	NYSDEC Subpart 375-6	0.12	NO	BSL
75-09-2	Methylene chloride	0.00081	J	0.0025	J	EOD3-F19	9 / 9	0 - 0	0.0025		11	NYSDEC Subpart 375-6	0.05	NO	BSL
108-88-3	Toluene	0.00048	J	0.00055	J	EOD3-H18	2 / 9	0.0067 - 0.01	0.00055		500	NYSDEC Subpart 375-6	0.7	NO	BSL
Metals															
7429-90-5	Aluminum	8,950		16,600		EOD3-G19	9 / 9	0 - 0	16,600	20,500	7,700			YES	ASL
7440-38-2	Arsenic	3		5.1		EOD3-G18	9 / 9	0 - 0	5.1	21.5	0.39	NYSDEC Subpart 375-6	13	YES	ASL
7440-39-3	Barium	79.6		163		EOD3-G19	9 / 9	0 - 0	163	159	1,500	NYSDEC Subpart 375-6	350	NO	BSL
7440-41-7	Beryllium	0.49	J	0.95		EOD3-G19	9 / 9	0 - 0	0.95	1.4	16	NYSDEC Subpart 375-6	7.2	NO	BSL
7440-43-9	Cadmium	0.09	J	0.2	J	EOD3-G19	6 / 9	0.04 - 0.05	0.2	2.9	7	NYSDEC Subpart 375-6	2.5	NO	BSL
7440-70-2	Calcium	2,630		105,000		EOD3-H18	9 / 9	0 - 0	105,000	293,000					NUT
7440-47-3	Chromium	15		24		EOD3-G19	9 / 9	0 - 0	24	32.7	280			NO	BSL
7440-48-4	Cobalt	5.3		10.6		EOD3-G18	9 / 9	0 - 0	10.6	29.1	2.3			YES	ASL
7440-50-8	Copper	14.5		28.7		EOD3-G19	9 / 9	0 - 0	28.7	62.8	310	NYSDEC Subpart 375-6	50	NO	BSL
7439-89-6	Iron	17,100		23,300		EOD3-G19	9 / 9	0 - 0	23,300	381,600	5,500			YES	ASL
7439-92-1	Lead	10.9		25.3		EOD3-G19	9 / 9	0 - 0	25.3	266	40	NYSDEC Subpart 375-6	63	NO	BSL
7439-95-4	Magnesium	3,140		14,000		EOD3-H18	9 / 9	0 - 0	14,000	29,100					NUT
7439-96-5	Manganese	220		751		EOD3-G18	9 / 9	0 - 0	751	2,380	180	NYSDEC Subpart 375-6	1,600	YES	ASL
7439-97-6	Mercury	0.02	J	0.09		EOD3-G19	9 / 9	0 - 0	0.09	0.13	0.43	NYSDEC Subpart 375-6	0.18	NO	BSL
7440-02-0	Nickel	16.7		27		EOD3-G19	9 / 9	0 - 0	27	62.3	150	NYSDEC Subpart 375-6	30	NO	BSL
7440-09-7	Potassium	1330		2150	J	EOD3-G19	9 / 9	0 - 0	2,150	3,160					NUT
7782-49-2	Selenium	0.79	J	2.9		EOD3-F18	9 / 9	0 - 0	2.9	1.7	39	NYSDEC Subpart 375-6	3.9	NO	BSL
7440-62-2	Vanadium	17.3		30.6		EOD3-G19	9 / 9	0 - 0	30.6	32.7	55			NO	BSL
7440-66-6	Zinc	57.2		101		EOD3-G19	9 / 9	0 - 0	101	126	2300	NYSDEC Subpart 375-6	109	NO	BSL
Other Analytes															
14797-55-8	Nitrate Nitrogen	7		8.1		EOD3-H19	3 / 9	6.1 - 8.87	8.1		13000			NO	BSL

Notes:

1. Field duplicate pairs were averaged as a discrete sample. Laboratory duplicates were not included in the assessment. Range of reporting limits were presented for nondetects only.
2. The maximum detected concentration was used for screening.
3. Background value is the maximum Seneca background concentration.
4. EPA Regional Screening Levels for residential soil. On-line resources available at http://www.epa.gov/region09/superfund/prg/index.html. Last updated April 2009.
   Region 9 PRGs were derived based on Direct contact exposure (ingestion and dermal contact) and a target Cancer Risk of 1E-6 or a Target Hazard Quotient of 0.1.
   Screening values for calcium, magnesium, potassium, and sodium were calculated based on an assumption of 200 mg/day soil ingestion and recommended dietary allowances and adequate intakes for 1-3 yr children (500 mg/day and 80 mg/day for calcium and magnesium) and minimum requirements for 1 yr children (225 mg/day and 1000 mg/day for sodium and potassium) from Marilyn Wright (2001) Dietary Reference Intakes.
   PRG for total chromium (1:6 ratio Cr VI: Cr III) was used as screening value for chromium.
   PRG for nickel (soluble salts) was used as screening value for nickel.
5. Potential ARAR/TBC values are from NYSDEC Brownfield Unrestricted Use Soil Cleanup Objectives, http://www.dec.state.ny.us/website/regs/subpart375_6.html
6. Rationale codes
   Selection Reason: Above Screening Levels (ASL); No Screening Value (NSV); Chemicals in the Same Group were retained as COPC (CSG)
   Deletion Reason: Essential Nutrient (NUT); Below Screening Level (BSL)

Definitions:

COPC = Chemical of Potential Concern
ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered
Q = Qualifier
J = Estimated Value

TABLE 3A
SOIL EXPOSURE POINT CONCENTRATION SUMMARY FOR SEAD-002-R-01 (EOD-3)
SENECA ARMY DEPOT ACTIVITY

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Soil
Exposure Point:	SEAD 002-R-01 EOD 3

CAS #	Chemical of Potential Concern	Units	Arithmetic Mean (1)	EPA ProUCL Student-t 95th UCL Value (1, 2)	Maximum Detected Concentration (1)	Q	EPC Units	Reasonable Maximum Exposure (2)		
								EPA ProUCL Recommended UCL Value	Medium EPC Statistic	Medium EPC Rationale
108-87-2	Methyl cyclohexane	mg/kg	1.3E-03	- (3)	0.0013	J	mg/kg	1.3E-03	-	-
7429-90-5	Aluminum	mg/kg	14,194	15,559	16,600		mg/kg	15,559	95% Student's-t UCL	Normal
7440-38-2	Arsenic	mg/kg	3.90	4.27	5.1		mg/kg	4.27	95% Student's-t UCL	Normal
7440-48-4	Cobalt	mg/kg	8.48	9.52	10.6		mg/kg	9.52	95% Student's-t UCL	Normal
7439-89-6	Iron	mg/kg	20,722	22,138	23,300		mg/kg	22,138	95% Student's-t UCL	Normal
7439-96-5	Manganese	mg/kg	500.40	600.10	751		mg/kg	600.10	95% Student's-t UCL	Normal

Notes:

1. Field duplicates were averaged and regarded as one sample entry. Laboratory duplicates were not included in the assessment. Nondetectes were assumed to be half reporting limits.
2. The EPCs were calculated using the ProUCL (Version 3.00.02) and the EPCs were selected in accordance with the ProUCL Version 3.0 User Guide (USEPA, 2004) and the Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites (USEPA, 2002).

   Q - qualifier

   J = Estimated Value
3. Insufficient number of detects in the dataset to perform 95th UCL analysis in ProUCL. This typical means there was a single detect in the dataset for this compound.

TABLE 3B
AMBIENT AIR EXPOSURE POINT CONCENTRATIONS FOR PARK WORKERS, VISITORS, & RESIDENTS AT SEAD-002-R-01 (EOD-3)
SENECA ARMY DEPOT ACTIVITY

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Air
Exposure Point:	SEAD-002-R-01 (EOD Area 3)

Equation for Air EPC from Surface Soil (mg/m^3) = CSsurf x PM10 x CF

Variables:
CSsurf = Chemical Concentration in Surface Soil, from EPC data (mg/kg)
PM10 = Average Measured PM10 Concentration = 34.58 ug/m^3
CF = Conversion Factor = 1E-9 kg/ug

Analyte	Reasonable Maximum Exposure	
	EPC Data for Surface Soil (mg/kg)	Calculated Air EPC Surface Soil (mg/m^3)
Methyl cyclohexane	1.3E-03	4.5E-11
Aluminum	1.6E+04	5.4E-04
Arsenic	4.3E+00	1.5E-07
Cobalt	9.5E+00	3.3E-07
Iron	2.2E+04	7.7E-04
Manganese	6.0E+02	2.1E-05

TABLE 4
CALCULATION OF INTAKE AND RISK FROM THE INGESTION OF SOIL AT SEAD-002-R-01 (EOD-3)
REASONABLE MAXIMUM EXPOSURE (RME)
SENECA ARMY DEPOT ACTIVITY

Equation for Intake (mg/kg-day) = $\frac{EPC \times IR \times CF \times FI \times EF \times ED \times B}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):

EPC = Exposure Point Concentration in Soil, mg/kg
IR = Ingestion Rate
CF = Conversion Factor
FI = Fraction Ingested
EF = Exposure Frequency
ED = Exposure Duration
B = Bioavailability
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Oral RfD	Carc. Slope Oral	Bioavailability	EPC Surface Soil	Park Worker				Construction Worker				Recreational Child Visitor			
					Intake (mg/kg-day)		Hazard Quotient	Cancer Risk	Intake (mg/kg-day)		Hazard Quotient	Cancer Risk	Intake (mg/kg-day)		Hazard Quotient	Cancer Risk
	(mg/kg-day)	(mg/kg-day)-1	(unitless)	(mg/kg)	(Nc)	(Car)			(Nc)	(Car)			(Nc)	(Car)		
Methyl cyclohexane	N/A	N/A	1	1.3E-03												
Aluminum	1.00E+00	N/A	1	1.6E+04	1.07E-02		1E-02		5.02E-02		5E-02		7.96E-03		8E-03	
Arsenic	3.00E-04	1.5E+00	1	4.3E+00	2.92E-06	1.04E-06	1E-02	2E-06	1.38E-05	1.97E-07	5E-02	3E-07	2.18E-06	1.56E-07	7E-03	2E-07
Cobalt	3.00E-04	N/A	1	9.5E+00	6.52E-06		2E-02		3.07E-05		1E-01		4.87E-06		2E-02	
Iron	3.00E-01	N/A	1	2.2E+04	1.52E-02		5E-02		7.15E-02		2E-01		1.13E-02		4E-02	
Manganese	2.40E-02	N/A	1	6.0E+02	4.11E-04		2E-02		1.94E-03		8E-02		3.07E-04		1E-02	
Total Hazard Quotient and Cancer Risk:							**1E-01**	**2E-06**			**5E-01**	**3E-07**			**8E-02**	**2E-07**

Assumptions for Park Worker		Assumptions for Construction Worker		Assumptions for Recreational Child Visitor	
CF =	1E-06 kg/mg	CF =	1E-06 kg/mg	CF =	1E-06 kg/mg
EPC=	EPC Surface Only	EPC=	EPC Surface and Subsurface	EPC=	EPC Surface Only
BW =	70 kg	BW =	70 kg	BW =	15 kg
IR =	100 mg/day	IR =	330 mg/day	IR =	200 mg/day
FI =	1 unitless	FI =	1 unitless	FI =	1 unitless
EF =	175 days/year	EF =	250 days/year	EF =	14 days/year
ED =	25 years	ED =	1 years	ED =	5 years
AT (Nc) =	9,125 days	AT (Nc) =	365 days	AT (Nc) =	1,825 days
AT (Car) =	25,550 days	AT (Car) =	25,550 days	AT (Car) =	25,550 days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.

TABLE 5
CALCULATION OF ABSORBED DOSE AND RISK FROM DERMAL CONTACT TO SOIL
REASONABLE MAXIMUM EXPOSURE (RME) - SEAD-002-R-01 (EOD-3) SOIL
SENECA ARMY DEPOT ACTIVITY

Equation for Intake (mg/kg-day) = $\frac{EPC \times CF \times SA \times AF \times ABS \times EV \times EF \times ED}{B \times W \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):

EPC = Chemical Concentration in Soil, mg/kg
CF = Conversion Factor
SA = Surface Area Contact
AF = Adherence Factor
ABS = Absorption Factor
EV = Event Frequency
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Dermal RfD	Carc. Slope Dermal	Absorption Fraction*	EPC Surface Soil	EPC from Total Soils	Park Worker				Construction Worker				Recreational Child Visitor			
						Absorbed Dose (mg/kg-day)		Hazard Quotient	Cancer Risk	Absorbed Dose (mg/kg-day)		Hazard Quotient	Cancer Risk	Absorbed Dose (mg/kg-day)		Hazard Quotient	Cancer Risk
	(mg/kg-day)	(mg/kg-day)-1	(unitless)	(mg/kg)	(mg/kg)	(Nc)	(Car)			(Nc)	(Car)			(Nc)	(Car)		
Methyl cyclohexane	N/A	N/A	1.0E-02	1.3E-03	1.3E-03												
Aluminum	1.00E+00	N/A	1E-03	1.6E+04	1.6E+04	7.03E-05		7E-05		1.51E-04		2E-04		2.23E-05		2.23E-05	
Arsenic	3.00E-04	1.5E+00	3E-02	4.3E+00	4.3E+00	5.79E-07	2.07E-07	2E-03	3E-07	1.24E-06	1.77E-08	4E-03	3E-08	1.83E-07	1.31E-08	6.11E-04	1.96E-08
Cobalt	3.00E-04	N/A	1E-03	9.5E+00	9.5E+00	4.30E-08		1E-04		9.22E-08		3E-04		1.36E-08		4.54E-05	
Iron	3.00E-01	N/A	1E-03	2.2E+04	2.2E+04	1.00E-04		3E-04		2.14E-04		7E-04		3.17E-05		1.06E-04	
Manganese	9.60E-04	N/A	1E-03	6.0E+02	6.0E+02	2.71E-06		3E-03		5.81E-06		6E-03		8.59E-07		8.95E-04	
Total Hazard Quotient and Cancer Risk:								**5E-03**	**3E-07**			**1E-02**	**3E-08**			**2E-03**	**2E-08**

Assumptions for Park Worker		Assumptions for Construction Worker		Assumptions for Recreational Child Visitor	
CF =	1E-06 kg/mg	CF =	1E-06 kg/mg	CF =	1E-06 kg/mg
CS =	EPC Surface Only	EPC =	EPC Surface and Subsurface	EPC =	EPC Surface Only
BW =	70 kg	BW =	70 kg	BW =	15 kg
SA =	3,300 cm^2	SA =	3,300 cm^2	SA =	2,800 cm^2
AF =	0.2 mg/cm^2-event	AF =	0.3 mg/cm^2-event	AF =	0.2 mg/cm^2-event
EV =	1 event/day	EV =	1 event/day	EV =	1 event/day
EF =	175 days/year	EF =	250 days/year	EF =	14 days/year
ED =	25 years	ED =	1 years	ED =	5 years
AT (Nc) =	9,125 days	AT (Nc) =	365 days	AT (Nc) =	1,825 days
AT (Car) =	25,550 days	AT (Car) =	25,550 days	AT (Car) =	25,550 days

TABLE 6
CALCULATION OF INTAKE AND RISK FROM INHALATION OF DUST IN AMBIENT AIR
REASONABLE MAXIMUM EXPOSURE (RME) - SEAD-002-R-01 (EOD-3) SOIL
SENECA ARMY DEPOT ACTIVITY

Equation for Intake (mg/kg-day) = $\frac{EPC \times IR \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):

EPC = EPC in Air, mg/m3
IR = Inhalation Rate
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Inhalation RfD	Carc. Slope Inhalation	Air EPC from Surface Soil	Air EPC from Total Soils	Park Worker				Construction Worker				Recreational Child Visitor			
					Intake (mg/kg-day)		Hazard Quotient	Cancer Risk	Intake (mg/kg-day)		Hazard Quotient	Cancer Risk	Intake (mg/kg-day)		Hazard Quotient	Cancer Risk
	(mg/kg-day)	(mg/kg-day)-1	(mg/m3)	(mg/m3)	(Nc)	(Car)			(Nc)	(Car)			(Nc)	(Car)		
Methyl cyclohexane	8.57E-01	N/A	4.5E-11	4.5E-11	2.46E-12		3E-12		4.58E-12		5E-12		1.00E-12		1E-12	
Aluminum	1.43E-03	N/A	5.4E-04	5.4E-04	2.95E-05		2E-02		5.48E-05		4E-02		1.20E-05		8E-03	
Arsenic	N/A	1.51E+01	1.5E-07	1.5E-07		2.89E-09		4E-08		2.15E-10		3E-09		2.35E-10		4E-09
Cobalt	1.71E-06	3.15E+01	3.3E-07	3.3E-07	1.80E-08	6.44E-09	1E-02	2E-07	3.35E-08	4.79E-10	2E-02	2E-08	7.32E-09	5.23E-10	4E-03	2E-08
Iron	N/A	N/A	7.7E-04	7.7E-04												
Manganese	1.43E-05	N/A	2.1E-05	2.1E-05	1.14E-06		8E-02		2.11E-06		1E-01		4.62E-07		3E-02	
Total Hazard Quotient and Cancer Risk:							**1E-01**	**2E-07**			**2E-01**	**2E-08**			**4E-02**	**2E-08**

Assumptions for Park Worker		Assumptions for Construction Worker		Assumptions for Recreational Child Visitor	
CA =	EPC Surface Only	CA =	EPC Surface and Sub-Surface	CA =	EPC Surface Only
BW =	70 kg	BW =	70 kg	BW =	15 kg
IR =	8 m3/day	IR =	10.4 m3/day	IR =	8.7 m3/day
EF =	175 days/year	EF =	250 days/year	EF =	14 days/year
ED =	25 years	ED =	1 year	ED =	5 years
AT (Nc) =	9,125 days	AT (Nc) =	365 days	AT (Nc) =	1,825 days
AT (Car) =	25,550 days	AT (Car) =	25,550 days	AT (Car) =	25,550 days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.

TABLE 7
CALCULATION OF TOTAL NONCARCINOGENIC AND CARCINOGENIC RISKS - SEAD-002-R-01 (EOD-3)
REASONABLE MAXIMUM EXPOSURE (RME)
SENECA ARMY DEPOT ACTIVITY

RECEPTOR	EXPOSURE ROUTE	REASONABLE MAXIMUM EXPOSURE (RME)			
		HAZARD INDEX		CANCER RISK	
		Hazard Index	Percent	Cancer Risk	Percent
PARK WORKER	Inhalation of Dust in Ambient Air	1E-01	49%	2E-07	12%
	Ingestion of Soil	1E-01	49%	2E-06	74%
	Dermal Contact to Soil	5E-03	2%	3E-07	15%
	TOTAL RECEPTOR RISK (Nc & Car)	*2E-01*	100%	*2E-06*	100%
CONSTRUCTION WORKER	Inhalation of Dust in Ambient Air	2E-01	28%	2E-08	5%
	Ingestion of Soil	5E-01	70%	3E-07	87%
	Dermal Contact to Soil	1E-02	2%	3E-08	8%
	TOTAL RECEPTOR RISK (Nc & Car)	*7E-01*	100%	*3E-07*	100%
RECREATIONAL CHILD VISITOR	Inhalation of Dust in Ambient Air	4E-02	35%	2E-08	7%
	Ingestion of Soil	8E-02	64%	2E-07	86%
	Dermal Contact to Soil	2E-03	1%	2E-08	7%
	TOTAL RECEPTOR RISK (Nc & Car)	*1E-01*	100%	*3E-07*	100%
RESIDENT (ADULT)	Inhalation of Dust in Ambient Air	6E-01	71%	1E-06	26%
	Ingestion of Soil	2E-01	28%	3E-06	66%
	Dermal Contact to Soil	6E-03	1%	4E-07	8%
	TOTAL RECEPTOR RISK (Nc & Car)	*8E-01*	100%	*5E-06*	100%
RESIDENT (CHILD)	Inhalation of Dust in Ambient Air	1E+00	35%	6E-07	7%
	Ingestion of Soil	2E+00	64%	7E-06	86%
	Dermal Contact to Soil	4E-02	1%	6E-07	7%
	TOTAL RECEPTOR RISK (Nc & Car)	*3E+00*	100%	*8E-06*	100%
RESIDENT (TOTAL)	Inhalation of Dust in Ambient Air			2E-06	14%
	Ingestion of Soil			1E-05	79%
	Dermal Contact to Soil			9E-07	7%
	TOTAL RECEPTOR CANCER RISK			*1E-05*	100%

NA - Not Applicable

Attachment E

SEAD-007-R-01 – Grenade Range

TABLE 1
SEAD-007-R-001 (Grenade Range) SOIL SAMPLE RESULTS
SENECA ARMY DEPOT ACTIVITY

SITE LOCATION								GR	GR	GR	GR	GR	GR
LOCATION ID								GR-A1	GR-A2-A	GR-A2-B	GR-A3	GR-A4-A	GR-A4-B
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								007R011001	007R011002	007R011003	007R011004	007R011005	007R011006
TOP OF SAMPLE								0	0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								12/12/06	12.12.06	12.12.06	12/12/06	12.12.06	12.12.06
QC CODE								SA	SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA
Parameter	**Units**	**Maximum Concentration**	**Frequency of Detection**	**NYSDEC Unrestricted Use Value (1)**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed (2)**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Volatile Organic Compounds													
1,1,1-Trichloroethane	UG/KG	0	0%	680	0	0	41	6.6 U	8 U	9.5 U	7.3 U	6.7 U	9.7 U
1,1,2,2-Tetrachloroethane	UG/KG	0	0%		0	0	41	6.6 U	8 U	9.5 U	7.3 U	6.7 U	9.7 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/KG	0	0%		0	0	41	6.6 U	8 U	9.5 U	7.3 U	6.7 U	9.7 U
1,1,2-Trichloroethane	UG/KG	0	0%		0	0	41	6.6 U	8 U	9.5 U	7.3 U	6.7 U	9.7 U
1,1-Dichloroethane	UG/KG	0	0%	270	0	0	41	6.6 U	8 U	9.5 U	7.3 U	6.7 U	9.7 U
1,1-Dichloroethene	UG/KG	0	0%	330	0	0	41	6.6 U	8 U	9.5 U	7.3 U	6.7 U	9.7 U
1,2,4-Trichlorobenzene	UG/KG	0	0%		0	0	41	6.6 U	8 U	9.5 U	7.3 U	6.7 U	9.7 U
1,2-Dibromo-3-chloropropane	UG/KG	0	0%		0	0	41	6.6 U	8 U	9.5 U	7.3 U	6.7 U	9.7 U
1,2-Dibromoethane	UG/KG	0	0%		0	0	41	6.6 U	8 U	9.5 U	7.3 U	6.7 U	9.7 U
1,2-Dichlorobenzene	UG/KG	0	0%	1100	0	0	41	6.6 U	8 U	9.5 U	7.3 U	6.7 U	9.7 U
1,2-Dichloroethane	UG/KG	0	0%	20	0	0	41	6.6 U	8 U	9.5 U	7.3 U	6.7 U	9.7 U
1,2-Dichloropropane	UG/KG	0	0%		0	0	41	6.6 U	8 U	9.5 U	7.3 U	6.7 U	9.7 U
1,3-Dichlorobenzene	UG/KG	0	0%	2400	0	0	41	6.6 U	8 U	9.5 U	7.3 U	6.7 U	9.7 U
1,4-Dichlorobenzene	UG/KG	0	0%	1800	0	0	41	6.6 U	8 U	9.5 U	7.3 U	6.7 U	9.7 U
Acetone	UG/KG	290	98%	50	31	40	41	16 J	14 J	12 J	61	50	55
Benzene	UG/KG	0	0%	60	0	0	41	6.6 U	8 U	9.5 U	7.3 U	6.7 U	9.7 U
Bromodichloromethane	UG/KG	0	0%		0	0	41	6.6 U	8 U	9.5 U	7.3 U	6.7 U	9.7 U
Bromoform	UG/KG	0	0%		0	0	41	6.6 U	8 U	9.5 U	7.3 U	6.7 U	9.7 U
Carbon disulfide	UG/KG	0	0%		0	0	41	13 U	16 U	19 U	15 U	13 U	19 U
Carbon tetrachloride	UG/KG	0	0%	760	0	0	41	6.6 U	8 U	9.5 U	7.3 U	6.7 U	9.7 U
Chlorobenzene	UG/KG	0	0%	1100	0	0	41	6.6 U	8 U	9.5 U	7.3 U	6.7 U	9.7 U
Chlorodibromomethane	UG/KG	0	0%		0	0	41	6.6 U	8 U	9.5 U	7.3 U	6.7 U	9.7 U
Chloroethane	UG/KG	0	0%		0	0	41	13 U	16 U	19 U	15 U	13 U	19 U
Chloroform	UG/KG	0	0%	370	0	0	41	6.6 U	8 U	9.5 U	7.3 U	6.7 U	9.7 U
Cis-1,2-Dichloroethene	UG/KG	0	0%	250	0	0	41	6.6 U	8 U	9.5 U	7.3 U	6.7 U	9.7 U
Cis-1,3-Dichloropropene	UG/KG	0	0%		0	0	41	6.6 U	8 U	9.5 U	7.3 U	6.7 U	9.7 U
Cyclohexane	UG/KG	1.5	2%		0	1	41	6.6 U	8 U	1.5 J	7.3 U	6.7 U	9.7 U
Dichlorodifluoromethane	UG/KG	0	0%		0	0	41	6.6 U	8 U	9.5 U	7.3 U	6.7 U	9.7 U
Ethyl benzene	UG/KG	0	0%	1000	0	0	41	6.6 U	8 U	9.5 U	7.3 U	6.7 U	9.7 U
Isopropylbenzene	UG/KG	0	0%		0	0	41	6.6 U	8 U	9.5 U	7.3 U	6.7 U	9.7 U
Meta Para Xylene	UG/KG	0	0%		0	0	41	6.6 U	8 U	9.5 U	7.3 U	6.7 U	9.7 U
Methyl Acetate	UG/KG	11	2%		0	1	41	13 U	16 U	19 U	15 U	13 U	19 U
Methyl Tertbutyl Ether	UG/KG	0	0%	930	0	0	41	6.6 U	8 U	9.5 U	7.3 U	6.7 U	9.7 U
Methyl bromide	UG/KG	0	0%		0	0	41	6.6 U	8 U	9.5 U	7.3 U	6.7 U	9.7 U
Methyl butyl ketone	UG/KG	8.1	2%		0	1	41	13 U	16 U	19 U	15 U	13 U	19 U
Methyl chloride	UG/KG	0	0%		0	0	41	6.6 U	8 U	9.5 U	7.3 U	6.7 U	9.7 U
Methyl cyclohexane	UG/KG	0	0%		0	0	41	6.6 U	8 U	9.5 U	7.3 U	6.7 U	9.7 U
Methyl ethyl ketone	UG/KG	63	90%	120	0	37	41	13 U	16 U	19 U	11 J	3.4 J	4.4 J
Methyl isobutyl ketone	UG/KG	0	0%		0	0	41	13 U	16 U	19 U	15 U	13 U	19 U
Methylene chloride	UG/KG	4.6	73%	50	0	30	41	1.5 J	1.6 J	1.7 J	1.4 J	1.4 J	1.9 J
Ortho Xylene	UG/KG	0	0%		0	0	41	6.6 U	8 U	9.5 U	7.3 U	6.7 U	9.7 U
Styrene	UG/KG	0	0%		0	0	41	6.6 U	8 U	9.5 U	7.3 U	6.7 U	9.7 U
Tetrachloroethene	UG/KG	2.4	10%	1300	0	4	41	6.6 U	8 U	9.5 U	7.3 U	6.7 U	9.7 U
Toluene	UG/KG	8.7	27%	700	0	11	41	6.6 U	8 U	9.5 U	7.3 U	6.7 U	9.7 U
Trans-1,2-Dichloroethene	UG/KG	0	0%	190	0	0	41	6.6 U	8 U	9.5 U	7.3 U	6.7 U	9.7 U
Trans-1,3-Dichloropropene	UG/KG	0	0%		0	0	41	6.6 U	8 U	9.5 U	7.3 U	6.7 U	9.7 U
Trichloroethene	UG/KG	0	0%	470	0	0	41	6.6 U	8 U	9.5 U	7.3 U	6.7 U	9.7 U
Trichlorofluoromethane	UG/KG	0	0%		0	0	41	6.6 U	8 U	9.5 U	7.3 U	6.7 U	9.7 U
Vinyl chloride	UG/KG	0	0%	20	0	0	41	6.6 U	8 U	9.5 U	7.3 U	6.7 U	9.7 U
Semivolatile Organic Compounds													
1,1'-Biphenyl	UG/KG	0	0%		0	0	41	450 U	480 U	500 U	470 U	430 U	510 U
2,4,5-Trichlorophenol	UG/KG	0	0%		0	0	41	450 U	480 U	500 U	470 U	430 U	510 U
2,4,6-Trichlorophenol	UG/KG	0	0%		0	0	41	450 U	480 U	500 U	470 U	430 U	510 U
2,4-Dichlorophenol	UG/KG	0	0%		0	0	41	450 U	480 U	500 U	470 U	430 U	510 U
2,4-Dimethylphenol	UG/KG	0	0%		0	0	41	450 U	480 U	500 U	470 U	430 U	510 U
2,4-Dinitrophenol	UG/KG	0	0%		0	0	41	2300 U	2500 U	2600 U	2400 U	2200 U	2600 U
2,4-Dinitrotoluene	UG/KG	430	2%		0	1	41	450 U	480 U	500 U	470 U	430 U	510 U
2,6-Dinitrotoluene	UG/KG	0	0%		0	0	41	450 U	480 U	500 U	470 U	430 U	510 U
2-Chloronaphthalene	UG/KG	0	0%		0	0	41	450 U	480 U	500 U	470 U	430 U	510 U
2-Chlorophenol	UG/KG	0	0%		0	0	41	450 U	480 U	500 U	470 U	430 U	510 U

TABLE I
SEAD-007-R-001 (Grenade Range) SOIL SAMPLE RESULTS
SENECA ARMY DEPOT ACTIVITY

SITE LOCATION								GR	GR	GR	GR	GR	GR
LOCATION ID								GR-A1	GR-A2-A	GR-A2-B	GR-A3	GR-A4-A	GR-A4-B
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								007R011001	007R011002	007R011003	007R011004	007R011005	007R011006
TOP OF SAMPLE								0	0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								12/12/06	12/12/06	12/12/06	12/12/06	12/12/06	12/12/06
QC CODE								SA	SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA
Parameter	**Units**	**Maximum Concentration**	**Frequency of Detection**	**NYSDEC Unrestricted Use Value (1)**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed (2)**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
2-Nitrotoluene	UG/KG	0	0%		0	0	41	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
2-amino-4,6-Dinitrotoluene	UG/KG	0	0%		0	0	41	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
3-Nitrotoluene	UG/KG	0	0%		0	0	41	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
4-Nitrotoluene	UG/KG	0	0%		0	0	41	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
4-amino-2,6-Dinitrotoluene	UG/KG	0	0%		0	0	41	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
HMX	UG/KG	0	0%		0	0	41	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
Nitrobenzene	UG/KG	0	0%		0	0	41	500 U	500 U	500 U	500 U	500 U	500 U
Nitroglycerine	UG/KG	0	0%		0	0	41	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
Pentaerythritol Tetranitrate	UG/KG	0	0%		0	0	41	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
RDX	UG/KG	0	0%		0	0	41	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
Tetryl	UG/KG	0	0%		0	0	41	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
PCBs													
Aroclor-1016	UG/KG	0	0%		0	0	41	45 U	48 U	50 U	47 U	43 U	51 U
Aroclor-1221	UG/KG	0	0%		0	0	41	92 U	97 U	100 U	96 U	87 U	100 U
Aroclor-1232	UG/KG	0	0%		0	0	41	45 U	48 U	50 U	47 U	43 U	51 U
Aroclor-1242	UG/KG	0	0%		0	0	41	45 U	48 U	50 U	47 U	43 U	51 U
Aroclor-1248	UG/KG	0	0%		0	0	41	45 U	48 U	50 U	47 U	43 U	51 U
Aroclor-1254	UG/KG	0	0%		0	0	41	45 U	48 U	50 U	47 U	43 U	51 U
Aroclor-1260	UG/KG	0	0%		0	0	41	45 U	48 U	50 U	47 U	43 U	51 U
Pesticides													
4,4'-DDD	UG/KG	0	0%	3.3	0	0	41	4.5 U	4.8 U	5 U	4.7 U	4.3 U	5.1 U
4,4'-DDE	UG/KG	0	0%	3.3	0	0	41	4.5 U	4.8 U	5 U	4.7 U	4.3 U	5.1 U
4,4'-DDT	UG/KG	0	0%	3.3	0	0	41	4.5 U	4.8 U	5 U	4.7 U	4.3 U	5.1 U
Aldrin	UG/KG	0	0%	5	0	0	41	2.3 U	2.5 U	2.6 U	2.4 U	2.2 U	2.6 U
Alpha-BHC	UG/KG	0	0%	20	0	0	41	2.3 U	2.5 U	2.6 U	2.4 U	2.2 U	2.6 U
Alpha-Chlordane	UG/KG	0	0%	94	0	0	41	2.3 U	2.5 U	2.6 U	2.4 U	2.2 U	2.6 U
Beta-BHC	UG/KG	0	0%	36	0	0	41	2.3 U	2.5 U	2.6 U	2.4 U	2.2 U	2.6 U
Delta-BHC	UG/KG	0	0%	40	0	0	41	2.3 U	2.5 U	2.6 U	2.4 U	2.2 U	2.6 U
Dieldrin	UG/KG	0	0%	5	0	0	41	4.5 U	4.8 U	5 U	4.7 U	4.3 U	5.1 U
Endosulfan I	UG/KG	0	0%	2400	0	0	41	2.3 U	2.5 U	2.6 U	2.4 U	2.2 U	2.6 U
Endosulfan II	UG/KG	0	0%	2400	0	0	41	4.5 U	4.8 U	5 U	4.7 U	4.3 U	5.1 U
Endosulfan sulfate	UG/KG	0	0%	2400	0	0	41	4.5 U	4.8 U	5 U	4.7 U	4.3 U	5.1 U
Endrin	UG/KG	0	0%	14	0	0	41	4.5 U	4.8 U	5 U	4.7 U	4.3 U	5.1 U
Endrin aldehyde	UG/KG	0	0%		0	0	41	4.5 U	4.8 U	5 U	4.7 U	4.3 U	5.1 U
Endrin ketone	UG/KG	0	0%		0	0	41	4.5 U	4.8 U	5 U	4.7 U	4.3 U	5.1 U
Gamma-BHC Lindane	UG/KG	0	0%	100	0	0	41	2.3 U	2.5 U	2.6 U	2.4 U	2.2 U	2.6 U
Gamma-Chlordane	UG/KG	0	0%		0	0	41	2.3 U	2.5 U	2.6 U	2.4 U	2.2 U	2.6 U
Heptachlor	UG/KG	0	0%	42	0	0	41	2.3 U	2.5 U	2.6 U	2.4 U	2.2 U	2.6 U
Heptachlor epoxide	UG/KG	0	0%		0	0	41	2.3 U	2.5 U	2.6 U	2.4 U	2.2 U	2.6 U
Methoxychlor	UG/KG	0	0%		0	0	41	23 U	25 U	26 U	24 U	22 U	26 U
Toxaphene	UG/KG	0	0%		0	0	41	45 U	48 U	50 U	47 U	43 U	51 U
Metals													
Aluminum	MG/KG	19600	100%		0	41	41	14500	16100	18100	15600	13400	17200
Antimony	MG/KG	0	0%		0	0	41	0.48 UJ	0.5 UJ	0.54 UJ	0.49 UJ	0.44 UJ	0.53 UJ
Arsenic	MG/KG	9.3	100%	13	0	41	41	3.4	3.8	4.4	3.2	9.3	3.3
Barium	MG/KG	180	100%	350	0	41	41	112	119	164	103	84.8	148
Beryllium	MG/KG	1.1	98%	7.2	0	40	41	0.02 U	0.85	0.88	0.68 J	0.57 J	0.97
Cadmium	MG/KG	0.25	59%	2.5	0	24	41	0.08 J	0.09 J	0.11 J	0.09 J	0.04 U	0.14 J
Calcium	MG/KG	11100	100%		0	41	41	3510	3630	2700	2770	2250	3830
Chromium	MG/KG	27.7	100%		0	41	41	22	24.9	27.7	21	17.8	24.2
Cobalt	MG/KG	23.5	100%		0	41	41	9.4	9.1	23.5	8.2	11.6	8.1
Copper	MG/KG	22.2	100%	50	0	41	41	17	19.5	15.7	13.8	15.1	16.6
Iron	MG/KG	32300	100%		0	41	41	22100	24600	32300	23000	21600	24800
Lead	MG/KG	38.5	100%	63	0	41	41	24.9	24.2	28.2	20.2	21.7	20.7
Magnesium	MG/KG	5230	100%		0	41	41	3600	3970	3980	3510	3110	4130
Manganese	MG/KG	1880	100%	1600	1	41	41	641	603	**1880**	356	312	582
Mercury	MG/KG	0.08	100%	0.18	0	41	41	0.06	0.06	0.06	0.05	0.05	0.08
Nickel	MG/KG	31.1	100%	30	2	41	41	23.6	25	27.3	18.7	22	23
Potassium	MG/KG	2370	100%		0	41	41	1590	1920	2060	1400	1160	1880
Selenium	MG/KG	4.4	100%	3.9	2	41	41	1.9	2.1	3.1	1.8	1.7	2.4
Silver	MG/KG	0	0%	2	0	0	41	0.16 U	0.16 U	0.18 U	0.16 U	0.14 U	0.17 U

TABLE 1
SEAD-007-R-001 (Grenade Range) SOIL SAMPLE RESULTS
SENECA ARMY DEPOT ACTIVITY

SITE LOCATION								GR	GR	GR	GR	GR	GR
LOCATION ID								GR-B1	GR-B2-A	GR-B2-B	GR-B3-A	GR-B3-B	GR-B4-A
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								007R011013	007R011011	007R011012	007R011009	007R011010	007R011007
TOP OF SAMPLE								0	0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								12/12/06	12/12/06	12/12/06	12/12/06	12/12/06	12/12/06
QC CODE								SA	SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA
Parameter	Units	Maximum Concentration	Frequency of Detection	NYSDEC Unrestricted Use Value (1)	Number of Exceedances	Number of Times Detected	Number of Samples Analyzed (2)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Volatile Organic Compounds													
1,1,1-Trichloroethane	UG/KG	0	0%	680	0	0	41	7.7 U	7 U	7.9 U	7.3 U	7.2 U	14 UJ
1,1,2,2-Tetrachloroethane	UG/KG	0	0%		0	0	41	7.7 U	7 U	7.9 U	7.3 U	7.2 U	14 UJ
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/KG	0	0%		0	0	41	7.7 U	7 U	7.9 U	7.3 U	7.2 U	14 UJ
1,1,2-Trichloroethane	UG/KG	0	0%		0	0	41	7.7 U	7 U	7.9 U	7.3 U	7.2 U	14 UJ
1,1-Dichloroethane	UG/KG	0	0%	270	0	0	41	7.7 U	7 U	7.9 U	7.3 U	7.2 U	14 UJ
1,1-Dichloroethene	UG/KG	0	0%	330	0	0	41	7.7 U	7 U	7.9 U	7.3 U	7.2 U	14 UJ
1,2,4-Trichlorobenzene	UG/KG	0	0%		0	0	41	7.7 U	7 U	7.9 U	7.3 U	7.2 U	14 UJ
1,2-Dibromo-3-chloropropane	UG/KG	0	0%		0	0	41	7.7 U	7 U	7.9 U	7.3 U	7.2 U	14 UJ
1,2-Dibromoethane	UG/KG	0	0%		0	0	41	7.7 U	7 U	7.9 U	7.3 U	7.2 U	14 UJ
1,2-Dichlorobenzene	UG/KG	0	0%	1100	0	0	41	7.7 U	7 U	7.9 U	7.3 U	7.2 U	14 UJ
1,2-Dichloroethane	UG/KG	0	0%	20	0	0	41	7.7 U	7 U	7.9 U	7.3 U	7.2 U	14 UJ
1,2-Dichloropropane	UG/KG	0	0%		0	0	41	7.7 U	7 U	7.9 U	7.3 U	7.2 U	14 UJ
1,3-Dichlorobenzene	UG/KG	0	0%	2400	0	0	41	7.7 U	7 U	7.9 U	7.3 U	7.2 U	14 UJ
1,4-Dichlorobenzene	UG/KG	0	0%	1800	0	0	41	7.7 U	7 U	7.9 U	7.3 U	7.2 U	14 UJ
Acetone	UG/KG	290	98%	50	31	40	41	110	42	54	48	52	71 J
Benzene	UG/KG	0	0%	60	0	0	41	7.7 U	7 U	7.9 U	7.3 U	7.2 U	14 UJ
Bromodichloromethane	UG/KG	0	0%		0	0	41	7.7 U	7 U	7.9 U	7.3 U	7.2 U	14 UJ
Bromoform	UG/KG	0	0%		0	0	41	7.7 U	7 U	7.9 U	7.3 U	7.2 U	14 UJ
Carbon disulfide	UG/KG	0	0%		0	0	41	15 U	14 U	16 U	15 U	14 U	28 UJ
Carbon tetrachloride	UG/KG	0	0%	760	0	0	41	7.7 U	7 U	7.9 U	7.3 U	7.2 U	14 UJ
Chlorobenzene	UG/KG	0	0%	1100	0	0	41	7.7 U	7 U	7.9 U	7.3 U	7.2 U	14 UJ
Chlorodibromomethane	UG/KG	0	0%		0	0	41	7.7 U	7 U	7.9 U	7.3 U	7.2 U	14 UJ
Chloroethane	UG/KG	0	0%		0	0	41	15 U	14 U	16 U	15 U	14 U	28 UJ
Chloroform	UG/KG	0	0%	370	0	0	41	7.7 U	7 U	7.9 U	7.3 U	7.2 U	14 UJ
Cis-1,2-Dichloroethene	UG/KG	0	0%	250	0	0	41	7.7 U	7 U	7.9 U	7.3 U	7.2 U	14 UJ
Cis-1,3-Dichloropropene	UG/KG	0	0%		0	0	41	7.7 U	7 U	7.9 U	7.3 U	7.2 U	14 UJ
Cyclohexane	UG/KG	1.5	2%		0	1	41	7.7 U	7 U	7.9 U	7.3 U	7.2 U	14 UJ
Dichlorodifluoromethane	UG/KG	0	0%		0	0	41	7.7 U	7 U	7.9 U	7.3 U	7.2 U	14 UJ
Ethyl benzene	UG/KG	0	0%	1000	0	0	41	7.7 U	7 U	7.9 U	7.3 U	7.2 U	14 UJ
Isopropylbenzene	UG/KG	0	0%		0	0	41	7.7 U	7 U	7.9 U	7.3 U	7.2 U	14 UJ
Meta Para Xylene	UG/KG	0	0%		0	0	41	7.7 U	7 U	7.9 U	7.3 U	7.2 U	14 UJ
Methyl Acetate	UG/KG	11	2%		0	1	41	15 UJ	14 UJ	16 UJ	15 UJ	14 UJ	28 UJ
Methyl Tertbutyl Ether	UG/KG	0	0%	930	0	0	41	7.7 U	7 U	7.9 U	7.3 U	7.2 U	14 UJ
Methyl bromide	UG/KG	0	0%		0	0	41	7.7 U	7 U	7.9 U	7.3 U	7.2 U	14 UJ
Methyl butyl ketone	UG/KG	8.1	2%		0	1	41	15 U	14 U	16 U	15 U	14 U	28 UJ
Methyl chloride	UG/KG	0	0%		0	0	41	7.7 U	7 U	7.9 U	7.3 U	7.2 U	14 UJ
Methyl cyclohexane	UG/KG	0	0%		0	0	41	7.7 U	7 U	7.9 U	7.3 U	7.2 U	14 UJ
Methyl ethyl ketone	UG/KG	63	90%	120	0	37	41	9.8 J	5.6 J	6.7 J	3.5 J	5.8 J	5.4 J
Methyl isobutyl ketone	UG/KG	0	0%		0	0	41	15 U	14 U	16 U	15 U	14 U	28 UJ
Methylene chloride	UG/KG	4.6	73%	50	0	30	41	1.4 J	1.2 J	1.8 J	1.6 J	1.8 J	4.6 J
Ortho Xylene	UG/KG	0	0%		0	0	41	7.7 U	7 U	7.9 U	7.3 U	7.2 U	14 UJ
Styrene	UG/KG	0	0%		0	0	41	7.7 U	7 U	7.9 U	7.3 U	7.2 U	14 UJ
Tetrachloroethene	UG/KG	2.4	10%	1300	0	4	41	7.7 U	7 U	7.9 U	7.3 U	7.2 U	14 UJ
Toluene	UG/KG	8.7	27%	700	0	11	41	7.7 U	7 U	7.9 U	7.3 U	7.2 U	14 UJ
Trans-1,2-Dichloroethene	UG/KG	0	0%	190	0	0	41	7.7 U	7 U	7.9 U	7.3 U	7.2 U	14 UJ
Trans-1,3-Dichloropropene	UG/KG	0	0%		0	0	41	7.7 U	7 U	7.9 U	7.3 U	7.2 U	14 UJ
Trichloroethene	UG/KG	0	0%	470	0	0	41	7.7 U	7 U	7.9 U	7.3 U	7.2 U	14 UJ
Trichlorofluoromethane	UG/KG	0	0%		0	0	41	7.7 U	7 U	7.9 U	7.3 U	7.2 U	14 UJ
Vinyl chloride	UG/KG	0	0%	20	0	0	41	7.7 U	7 U	7.9 U	7.3 U	7.2 U	14 UJ
Semivolatile Organic Compounds													
1,1'-Biphenyl	UG/KG	0	0%		0	0	41	460 U	450 U	480 U	480 U	450 U	510 U
2,4,5-Trichlorophenol	UG/KG	0	0%		0	0	41	460 U	450 U	480 U	480 U	450 U	510 U
2,4,6-Trichlorophenol	UG/KG	0	0%		0	0	41	460 U	450 U	480 U	480 U	450 U	510 U
2,4-Dichlorophenol	UG/KG	0	0%		0	0	41	460 U	450 U	480 U	480 U	450 U	510 U
2,4-Dimethylphenol	UG/KG	0	0%		0	0	41	460 U	450 U	480 U	480 U	450 U	510 U
2,4-Dinitrophenol	UG/KG	0	0%		0	0	41	2400 U	2300 U	2500 U	2500 U	2300 U	2600 U
2,4-Dinitrotoluene	UG/KG	430	2%		0	1	41	460 U	450 U	480 U	480 U	450 U	510 U
2,6-Dinitrotoluene	UG/KG	0	0%		0	0	41	460 U	450 U	480 U	480 U	450 U	510 U
2-Chloronaphthalene	UG/KG	0	0%		0	0	41	460 U	450 U	480 U	480 U	450 U	510 U
2-Chlorophenol	UG/KG	0	0%		0	0	41	460 U	450 U	480 U	480 U	450 U	510 U

TABLE 1
SEAD-007-R-001 (Grenade Range) SOIL SAMPLE RESULTS
SENECA ARMY DEPOT ACTIVITY

SITE LOCATION								GR	GR	GR	GR	GR	GR
LOCATION ID								GR-B1	GR-B2-A	GR-B2-B	GR-B3-A	GR-B3-B	GR-B4-A
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								007R011013	007R011011	007R011012	007R011009	007R011010	007R011007
TOP OF SAMPLE								0	0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								12/12/06	12/12/06	12/12/06	12/12/06	12/12/06	12/12/06
QC CODE								SA	SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA
Parameter	Units	Maximum Concentration	Frequency of Detection	NYSDEC Unrestricted Use Value (1)	Number of Exceedances	Number of Times Detected	Number of Samples Analyzed (2)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
2-Nitrotoluene	UG/KG	0	0%		0	0	41	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
2-amino-4,6-Dinitrotoluene	UG/KG	0	0%		0	0	41	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
3-Nitrotoluene	UG/KG	0	0%		0	0	41	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
4-Nitrotoluene	UG/KG	0	0%		0	0	41	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
4-amino-2,6-Dinitrotoluene	UG/KG	0	0%		0	0	41	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
HMX	UG/KG	0	0%		0	0	41	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
Nitrobenzene	UG/KG	0	0%		0	0	41	500 U	500 U	500 U	500 U	500 U	500 U
Nitroglycerine	UG/KG	0	0%		0	0	41	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
Pentaerythritol Tetranitrate	UG/KG	0	0%		0	0	41	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
RDX	UG/KG	0	0%		0	0	41	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
Tetryl	UG/KG	0	0%		0	0	41	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
PCBs													
Aroclor-1016	UG/KG	0	0%		0	0	41	46 U	45 U	48 U	48 U	45 U	51 U
Aroclor-1221	UG/KG	0	0%		0	0	41	94 U	92 U	98 U	98 U	91 U	100 U
Aroclor-1232	UG/KG	0	0%		0	0	41	46 U	45 U	48 U	48 U	45 U	51 U
Aroclor-1242	UG/KG	0	0%		0	0	41	46 U	45 U	48 U	48 U	45 U	51 U
Aroclor-1248	UG/KG	0	0%		0	0	41	46 U	45 U	48 U	48 U	45 U	51 U
Aroclor-1254	UG/KG	0	0%		0	0	41	46 U	45 U	48 U	48 U	45 U	51 U
Aroclor-1260	UG/KG	0	0%		0	0	41	46 U	45 U	48 U	48 U	45 U	51 U
Pesticides													
4,4'-DDD	UG/KG	0	0%	3.3	0	0	41	4.6 U	4.5 U	4.8 U	4.8 U	4.5 U	5.1 U
4,4'-DDE	UG/KG	0	0%	3.3	0	0	41	4.6 U	4.5 U	4.8 U	4.8 U	4.5 U	5.1 U
4,4'-DDT	UG/KG	0	0%	3.3	0	0	41	4.6 U	4.5 U	4.8 U	4.8 U	4.5 U	5.1 U
Aldrin	UG/KG	0	0%	5	0	0	41	2.4 U	2.3 U	2.5 U	2.5 U	2.3 U	2.6 U
Alpha-BHC	UG/KG	0	0%	20	0	0	41	2.4 U	2.3 U	2.5 U	2.5 U	2.3 U	2.6 U
Alpha-Chlordane	UG/KG	0	0%	94	0	0	41	2.4 U	2.3 U	2.5 U	2.5 U	2.3 U	2.6 U
Beta-BHC	UG/KG	0	0%	36	0	0	41	2.4 U	2.3 U	2.5 U	2.5 U	2.3 U	2.6 U
Delta-BHC	UG/KG	0	0%	40	0	0	41	2.4 U	2.3 U	2.5 U	2.5 U	2.3 U	2.6 U
Dieldrin	UG/KG	0	0%	5	0	0	41	4.6 U	4.5 U	4.8 U	4.8 U	4.5 U	5.1 U
Endosulfan I	UG/KG	0	0%	2400	0	0	41	2.4 U	2.3 U	2.5 U	2.5 U	2.3 U	2.6 U
Endosulfan II	UG/KG	0	0%	2400	0	0	41	4.6 U	4.5 U	4.8 U	4.8 U	4.5 U	5.1 U
Endosulfan sulfate	UG/KG	0	0%	2400	0	0	41	4.6 U	4.5 U	4.8 U	4.8 U	4.5 U	5.1 U
Endrin	UG/KG	0	0%	14	0	0	41	4.6 U	4.5 U	4.8 U	4.8 U	4.5 U	5.1 U
Endrin aldehyde	UG/KG	0	0%		0	0	41	4.6 U	4.5 U	4.8 U	4.8 U	4.5 U	5.1 U
Endrin ketone	UG/KG	0	0%		0	0	41	4.6 U	4.5 U	4.8 U	4.8 U	4.5 U	5.1 U
Gamma-BHC Lindane	UG/KG	0	0%	100	0	0	41	2.4 U	2.3 U	2.5 U	2.5 U	2.3 U	2.6 U
Gamma-Chlordane	UG/KG	0	0%		0	0	41	2.4 U	2.3 U	2.5 U	2.5 U	2.3 U	2.6 U
Heptachlor	UG/KG	0	0%	42	0	0	41	2.4 U	2.3 U	2.5 U	2.5 U	2.3 U	2.6 U
Heptachlor epoxide	UG/KG	0	0%		0	0	41	2.4 U	2.3 U	2.5 U	2.5 U	2.3 U	2.6 U
Methoxychlor	UG/KG	0	0%		0	0	41	24 U	23 U	25 U	25 U	23 U	26 U
Toxaphene	UG/KG	0	0%		0	0	41	46 U	45 U	48 U	48 U	45 U	51 U
Metals													
Aluminum	MG/KG	19600	100%		0	41	41	15800	15900	16600	14900	14400	19600
Antimony	MG/KG	0	0%		0	0	41	0.49 UJ	0.48 UJ	0.49 UJ	0.52 UJ	0.46 UJ	0.52 UJ
Arsenic	MG/KG	9.3	100%	13	0	41	41	2.6	4.6	3.5	2.8	3.3	3.4
Barium	MG/KG	180	100%	350	0	41	41	117	94.4	109	106	98.9	152
Beryllium	MG/KG	1.1	98%	7.2	0	40	41	0.71	0.74	0.81	0.67 J	0.7	0.91
Cadmium	MG/KG	0.25	59%	2.5	0	24	41	0.07 J	0.05 U	0.1 J	0.05 U	0.07 J	0.18 J
Calcium	MG/KG	11100	100%		0	41	41	2920	2000	2790	3350	2940	4370
Chromium	MG/KG	27.7	100%		0	41	41	21.7	21.9	23.5	20	20.2	23.7
Cobalt	MG/KG	23.5	100%		0	41	41	9.1	11.3	10.2	6.8 J	7.8	6.8 J
Copper	MG/KG	22.2	100%	50	0	41	41	15	14.4	15	16.1	14.2	16
Iron	MG/KG	32300	100%		0	41	41	20300	26800	22200	20600	21100	21100
Lead	MG/KG	38.5	100%	63	0	41	41	20.6	25.2	20.9	18.8	20	20.6
Magnesium	MG/KG	5230	100%		0	41	41	3520	3480	3670	3400	3580	4160
Manganese	MG/KG	1880	100%	1600	1	41	41	546	647	610	255	387	277
Mercury	MG/KG	0.08	100%	0.18	0	41	41	0.05	0.04	0.05	0.05	0.05	0.08
Nickel	MG/KG	31.1	100%	30	2	41	41	20.3	18.7	22.9	17.5	18.7	20.2
Potassium	MG/KG	2370	100%		0	41	41	1740	1660	2010	1980	1800	2070
Selenium	MG/KG	4.4	100%	3.9	2	41	41	1.7	2.5	1.9	1.7	1.5	1.4 J
Silver	MG/KG	0	0%	2	0	0	41	0.16 U	0.16 U	0.16 U	0.17 U	0.15 U	0.17 U

TABLE 1
SEAD-007-R-001 (Grenade Range) SOIL SAMPLE RESULTS
SENECA ARMY DEPOT ACTIVITY

SITE LOCATION								GR	GR	GR	GR	GR	GR
LOCATION ID								GR-B4-B	GR-C1	GR-C2-A	GR-C2-B	GR-C3-A	GR-C3-B
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								007R011008	007R011014	007R011015	007R011016	007R011017	007R011018
TOP OF SAMPLE								0	0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								12/12/06	12/12/06	12/12/06	12/12/06	12/12/06	12/12/06
QC CODE								SA	SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA
Parameter	**Units**	**Maximum Concentration**	**Frequency of Detection**	**NYSDEC Unrestricted Use Value (1)**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed (2)**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Volatile Organic Compounds													
1,1,1-Trichloroethane	UG/KG	0	0%	680	0	0	41	5.9 U	7.9 U	6.8 U	6.7 U	7.4 U	9.3 U
1,1,2,2-Tetrachloroethane	UG/KG	0	0%		0	0	41	5.9 U	7.9 U	6.8 U	6.7 U	7.4 U	9.3 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/KG	0	0%		0	0	41	5.9 U	7.9 U	6.8 U	6.7 U	7.4 U	9.3 U
1,1,2-Trichloroethane	UG/KG	0	0%		0	0	41	5.9 U	7.9 U	6.8 U	6.7 U	7.4 U	9.3 U
1,1-Dichloroethane	UG/KG	0	0%	270	0	0	41	5.9 U	7.9 U	6.8 U	6.7 U	7.4 U	9.3 U
1,1-Dichloroethene	UG/KG	0	0%	330	0	0	41	5.9 U	7.9 U	6.8 U	6.7 U	7.4 U	9.3 U
1,2,4-Trichlorobenzene	UG/KG	0	0%		0	0	41	5.9 U	7.9 U	6.8 U	6.7 U	7.4 U	9.3 U
1,2-Dibromo-3-chloropropane	UG/KG	0	0%		0	0	41	5.9 U	7.9 U	6.8 U	6.7 U	7.4 U	9.3 U
1,2-Dibromoethane	UG/KG	0	0%		0	0	41	5.9 U	7.9 U	6.8 U	6.7 U	7.4 U	9.3 U
1,2-Dichlorobenzene	UG/KG	0	0%	1100	0	0	41	5.9 U	7.9 U	6.8 U	6.7 U	7.4 U	9.3 U
1,2-Dichloroethane	UG/KG	0	0%	20	0	0	41	5.9 U	7.9 U	6.8 U	6.7 U	7.4 U	9.3 U
1,2-Dichloropropane	UG/KG	0	0%		0	0	41	5.9 U	7.9 U	6.8 U	6.7 U	7.4 U	9.3 U
1,3-Dichlorobenzene	UG/KG	0	0%	2400	0	0	41	5.9 U	7.9 U	6.8 U	6.7 U	7.4 U	9.3 U
1,4-Dichlorobenzene	UG/KG	0	0%	1800	0	0	41	5.9 U	7.9 U	6.8 U	6.7 U	7.4 U	9.3 U
Acetone	UG/KG	290	98%	50	31	40	41	36	100	98	50	29.6 U	130
Benzene	UG/KG	0	0%	60	0	0	41	5.9 U	7.9 U	6.8 U	6.7 U	7.4 U	9.3 U
Bromodichloromethane	UG/KG	0	0%		0	0	41	5.9 U	7.9 U	6.8 U	6.7 U	7.4 U	9.3 U
Bromoform	UG/KG	0	0%		0	0	41	5.9 U	7.9 U	6.8 U	6.7 U	7.4 U	9.3 U
Carbon disulfide	UG/KG	0	0%		0	0	41	12 U	16 U	14 U	13 U	15 U	19 U
Carbon tetrachloride	UG/KG	0	0%	760	0	0	41	5.9 U	7.9 U	6.8 U	6.7 U	7.4 U	9.3 U
Chlorobenzene	UG/KG	0	0%	1100	0	0	41	5.9 U	7.9 U	6.8 U	6.7 U	7.4 U	9.3 U
Chlorodibromomethane	UG/KG	0	0%		0	0	41	5.9 U	7.9 U	6.8 U	6.7 U	7.4 U	9.3 U
Chloroethane	UG/KG	0	0%		0	0	41	12 U	16 U	14 U	13 U	15 U	19 U
Chloroform	UG/KG	0	0%	370	0	0	41	5.9 U	7.9 U	6.8 U	6.7 U	7.4 U	9.3 U
Cis-1,2-Dichloroethene	UG/KG	0	0%	250	0	0	41	5.9 U	7.9 U	6.8 U	6.7 U	7.4 U	9.3 U
Cis-1,3-Dichloropropene	UG/KG	0	0%		0	0	41	5.9 U	7.9 U	6.8 U	6.7 U	7.4 U	9.3 U
Cyclohexane	UG/KG	1.5	2%		0	1	41	5.9 U	7.9 U	6.8 U	6.7 U	7.4 U	9.3 U
Dichlorodifluoromethane	UG/KG	0	0%		0	0	41	5.9 U	7.9 U	6.8 U	6.7 U	7.4 U	9.3 U
Ethyl benzene	UG/KG	0	0%	1000	0	0	41	5.9 U	7.9 U	6.8 U	6.7 U	7.4 U	9.3 U
Isopropylbenzene	UG/KG	0	0%		0	0	41	5.9 U	7.9 U	6.8 U	6.7 U	7.4 U	9.3 U
Meta Para Xylene	UG/KG	0	0%		0	0	41	5.9 U	7.9 U	6.8 U	6.7 U	7.4 U	9.3 U
Methyl Acetate	UG/KG	11	2%		0	1	41	12 U	16 UJ	14 UJ	13 UJ	15 UJ	19 UJ
Methyl Tertbutyl Ether	UG/KG	0	0%	930	0	0	41	5.9 U	7.9 U	6.8 U	6.7 U	7.4 U	9.3 U
Methyl bromide	UG/KG	0	0%		0	0	41	5.9 U	7.9 U	6.8 U	6.7 U	7.4 U	9.3 U
Methyl butyl ketone	UG/KG	8.1	2%		0	1	41	12 U	16 U	14 U	13 U	15 U	19 U
Methyl chloride	UG/KG	0	0%		0	0	41	5.9 U	7.9 U	6.8 U	6.7 U	7.4 U	9.3 U
Methyl cyclohexane	UG/KG	0	0%		0	0	41	5.9 U	7.9 U	6.8 U	6.7 U	7.4 U	9.3 U
Methyl ethyl ketone	UG/KG	63	90%	120	0	37	41	2.1 J	19	7.9 J	6.6 J	4.2 J	9.4 J
Methyl isobutyl ketone	UG/KG	0	0%		0	0	41	12 U	16 U	14 U	13 U	15 U	19 U
Methylene chloride	UG/KG	4.6	73%	50	0	30	41	1.2 J	1.7 J	1.5 J	1.3 J	1.4 J	2.1 J
Ortho Xylene	UG/KG	0	0%		0	0	41	5.9 U	7.9 U	6.8 U	6.7 U	7.4 U	9.3 U
Styrene	UG/KG	0	0%		0	0	41	5.9 U	7.9 U	6.8 U	6.7 U	7.4 U	9.3 U
Tetrachloroethene	UG/KG	2.4	10%	1300	0	4	41	5.9 U	7.9 U	6.8 U	6.7 U	7.4 U	9.3 U
Toluene	UG/KG	8.7	27%	700	0	11	41	5.9 U	7.9 U	6.8 U	6.7 U	7.4 U	9.3 U
Trans-1,2-Dichloroethene	UG/KG	0	0%	190	0	0	41	5.9 U	7.9 U	6.8 U	6.7 U	7.4 U	9.3 U
Trans-1,3-Dichloropropene	UG/KG	0	0%		0	0	41	5.9 U	7.9 U	6.8 U	6.7 U	7.4 U	9.3 U
Trichloroethene	UG/KG	0	0%	470	0	0	41	5.9 U	7.9 U	6.8 U	6.7 U	7.4 U	9.3 U
Trichlorofluoromethane	UG/KG	0	0%		0	0	41	5.9 U	7.9 U	6.8 U	6.7 U	7.4 U	9.3 U
Vinyl chloride	UG/KG	0	0%	20	0	0	41	5.9 U	7.9 U	6.8 U	6.7 U	7.4 U	9.3 U
Semivolatile Organic Compounds													
1,1'-Biphenyl	UG/KG	0	0%		0	0	41	420 U	480 U	450 U	420 U	480 U	470 U
2,4,5-Trichlorophenol	UG/KG	0	0%		0	0	41	420 U	480 U	450 U	420 U	480 U	470 U
2,4,6-Trichlorophenol	UG/KG	0	0%		0	0	41	420 U	480 U	450 U	420 U	480 U	470 U
2,4-Dichlorophenol	UG/KG	0	0%		0	0	41	420 U	480 U	450 U	420 U	480 U	470 U
2,4-Dimethylphenol	UG/KG	0	0%		0	0	41	420 U	480 U	450 U	420 U	480 U	470 U
2,4-Dinitrophenol	UG/KG	0	0%		0	0	41	2200 U	2500 U	2300 U	2100 UJ	2500 UJ	2400 UJ
2,4-Dinitrotoluene	UG/KG	430	2%		0	1	41	420 U	480 U	450 U	420 U	480 U	470 U
2,6-Dinitrotoluene	UG/KG	0	0%		0	0	41	420 U	480 U	450 U	420 U	480 U	470 U
2-Chloronaphthalene	UG/KG	0	0%		0	0	41	420 U	480 U	450 U	420 U	480 U	470 U
2-Chlorophenol	UG/KG	0	0%		0	0	41	420 U	480 U	450 U	420 U	480 U	470 U

TABLE 1
SEAD-007-R-001 (Grenade Range) SOIL SAMPLE RESULTS
SENECA ARMY DEPOT ACTIVITY

SITE LOCATION							GR	GR	GR	GR	GR	GR
LOCATION ID							GR-B4-B	GR-C1	GR-C2-A	GR-C2-B	GR-C3-A	GR-C3-B
MATRIX							SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID							007R011008	007R011014	007R011015	007R011016	007R011017	007R011018
TOP OF SAMPLE							0	0	0	0	0	0
BOTTOM OF SAMPLE							0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE							12/12/06	12/12/06	12/12/06	12/12/06	12/12/06	12/12/06
QC CODE							SA	SA	SA	SA	SA	SA
STUDY ID							RA	RA	RA	RA	RA	RA
Parameter	**Units**	**Maximum Concentration**	**Frequency of Detection**	**NYSDEC Unrestricted Use Value (1)**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed (2)**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
2-Nitrotoluene	UG/KG	0	0%		0	0	41	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
2-amino-4,6-Dinitrotoluene	UG/KG	0	0%		0	0	41	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
3-Nitrotoluene	UG/KG	0	0%		0	0	41	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
4-Nitrotoluene	UG/KG	0	0%		0	0	41	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
4-amino-2,6-Dinitrotoluene	UG/KG	0	0%		0	0	41	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
HMX	UG/KG	0	0%		0	0	41	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
Nitrobenzene	UG/KG	0	0%		0	0	41	500 U	500 U	500 U	500 U	500 U	500 U
Nitroglycerine	UG/KG	0	0%		0	0	41	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
Pentaerythritol Tetranitrate	UG/KG	0	0%		0	0	41	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
RDX	UG/KG	0	0%		0	0	41	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
Tetryl	UG/KG	0	0%		0	0	41	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
PCBs													
Aroclor-1016	UG/KG	0	0%		0	0	41	42 U	48 U	45 U	42 U	48 U	47 U
Aroclor-1221	UG/KG	0	0%		0	0	41	86 U	97 U	92 U	84 U	98 U	95 U
Aroclor-1232	UG/KG	0	0%		0	0	41	42 U	48 U	45 U	42 U	48 U	47 U
Aroclor-1242	UG/KG	0	0%		0	0	41	42 U	48 U	45 U	42 U	48 U	47 U
Aroclor-1248	UG/KG	0	0%		0	0	41	42 U	48 U	45 U	42 U	48 U	47 U
Aroclor-1254	UG/KG	0	0%		0	0	41	42 U	48 U	45 U	42 U	48 U	47 U
Aroclor-1260	UG/KG	0	0%		0	0	41	42 U	48 U	45 U	42 U	48 U	47 U
Pesticides													
4,4'-DDD	UG/KG	0	0%	3.3	0	0	41	4.2 U	4.8 U	4.5 U	4.2 U	4.8 U	4.7 U
4,4'-DDE	UG/KG	0	0%	3.3	0	0	41	4.2 U	4.8 U	4.5 U	4.2 U	4.8 U	4.7 U
4,4'-DDT	UG/KG	0	0%	3.3	0	0	41	4.2 U	4.8 U	4.5 U	4.2 U	4.8 U	4.7 U
Aldrin	UG/KG	0	0%	5	0	0	41	2.2 U	2.5 U	2.3 U	2.1 U	2.5 U	2.4 U
Alpha-BHC	UG/KG	0	0%	20	0	0	41	2.2 U	2.5 U	2.3 U	2.1 U	2.5 U	2.4 U
Alpha-Chlordane	UG/KG	0	0%	94	0	0	41	2.2 U	2.5 U	2.3 U	2.1 U	2.5 U	2.4 U
Beta-BHC	UG/KG	0	0%	36	0	0	41	2.2 U	2.5 U	2.3 U	2.1 U	2.5 U	2.4 U
Delta-BHC	UG/KG	0	0%	40	0	0	41	2.2 U	2.5 U	2.3 U	2.1 U	2.5 U	2.4 U
Dieldrin	UG/KG	0	0%	5	0	0	41	4.2 U	4.8 U	4.5 U	4.2 U	4.8 U	4.7 U
Endosulfan I	UG/KG	0	0%	2400	0	0	41	2.2 U	2.5 U	2.3 U	2.1 U	2.5 U	2.4 U
Endosulfan II	UG/KG	0	0%	2400	0	0	41	4.2 U	4.8 U	4.5 U	4.2 U	4.8 U	4.7 U
Endosulfan sulfate	UG/KG	0	0%	2400	0	0	41	4.2 U	4.8 U	4.5 U	4.2 U	4.8 U	4.7 U
Endrin	UG/KG	0	0%	14	0	0	41	4.2 U	4.8 U	4.5 U	4.2 U	4.8 U	4.7 U
Endrin aldehyde	UG/KG	0	0%		0	0	41	4.2 U	4.8 U	4.5 U	4.2 U	4.8 U	4.7 U
Endrin ketone	UG/KG	0	0%		0	0	41	4.2 U	4.8 U	4.5 U	4.2 U	4.8 U	4.7 U
Gamma-BHC Lindane	UG/KG	0	0%	100	0	0	41	2.2 U	2.5 U	2.3 U	2.1 U	2.5 U	2.4 U
Gamma-Chlordane	UG/KG	0	0%		0	0	41	2.2 U	2.5 U	2.3 U	2.1 U	2.5 U	2.4 U
Heptachlor	UG/KG	0	0%	42	0	0	41	2.2 U	2.5 U	2.3 U	2.1 U	2.5 U	2.4 U
Heptachlor epoxide	UG/KG	0	0%		0	0	41	2.2 U	2.5 U	2.3 U	2.1 U	2.5 U	2.4 U
Methoxychlor	UG/KG	0	0%		0	0	41	22 U	25 U	23 U	21 U	25 U	24 U
Toxaphene	UG/KG	0	0%		0	0	41	42 U	48 U	45 U	42 U	48 U	47 U
Metals													
Aluminum	MG/KG	19600	100%		0	41	41	15100	16300	13700	15500	15500	14700
Antimony	MG/KG	0	0%		0	0	41	0.44 UJ	0.5 UJ	0.46 UJ	0.43 UJ	0.52 UJ	0.49 UJ
Arsenic	MG/KG	9.3	100%	13	0	41	41	3	4	3.5	3.6	5	4.4
Barium	MG/KG	180	100%	350	0	41	41	87.6	122	74.6	124	111	95.3
Beryllium	MG/KG	1.1	98%	7.2	0	40	41	0.68	0.87	0.62 J	0.79	0.75	0.77
Cadmium	MG/KG	0.25	59%	2.5	0	24	41	0.04 J	0.12 J	0.05 U	0.08 J	0.05 U	0.05 U
Calcium	MG/KG	11100	100%		0	41	41	3310	11100	1640	3370 J	2430 J	3210 J
Chromium	MG/KG	27.7	100%		0	41	41	21.1	25	20.6	21.1	21.2	22.1
Cobalt	MG/KG	23.5	100%		0	41	41	9	11.5	10.4	8.9	7.9	10
Copper	MG/KG	22.2	100%	50	0	41	41	18.2	22.2	19.1	17.3	17	18.7
Iron	MG/KG	32300	100%		0	41	41	21900	24400	22100	20800	23200	23100
Lead	MG/KG	38.5	100%	63	0	41	41	19.7	22.9	21.3	17.3	16.7	26.7
Magnesium	MG/KG	5230	100%		0	41	41	3980	5230	3490	3670	3710	4130
Manganese	MG/KG	1880	100%	1600	1	41	41	289	665	381	642 J	253 J	361 J
Mercury	MG/KG	0.08	100%	0.18	0	41	41	0.04	0.06	0.05	0.05	0.06	0.05
Nickel	MG/KG	31.1	100%	30	2	41	41	23.6	29.5	23.2	20.2	19.7	25
Potassium	MG/KG	2370	100%		0	41	41	1560	2120	1480	1550	1840	1590
Selenium	MG/KG	4.4	100%	3.9	2	41	41	1.8	1.9	3.8	3.8	4.1	3.9
Silver	MG/KG	0	0%	2	0	0	41	0.14 U	0.16 U	0.15 U	0.14 U	0.17 U	0.16 U

TABLE 1
SEAD-007-R-001 (Grenade Range) SOIL SAMPLE RESULTS
SENECA ARMY DEPOT ACTIVITY

SITE LOCATION								GR	GR	GR	GR	GR	GR
LOCATION ID								GR-D1	GR-D2-A	GR-D2-B	GR-D3-A	GR-D3-A	GR-D3-B
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								007R011026	007R011024	007R011025	007R011021	007R011022	007R011023
TOP OF SAMPLE								0	0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								12/13/06	12/13/06	12/13/06	12/12/06	12/13/06	12/13/06
QC CODE								SA	SA	SA	DU	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA
Parameter	**Units**	**Maximum Concentration**	**Frequency of Detection**	**NYSDEC Unrestricted Use Value (1)**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed (2)**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Volatile Organic Compounds													
1,1,1-Trichloroethane	UG/KG	0	0%	680	0	0	41	7.4 U	10 U	6.3 U	7.7 U	8.5 U	7.7 U
1,1,2,2-Tetrachloroethane	UG/KG	0	0%		0	0	41	7.4 U	10 U	6.3 U	7.7 U	8.5 U	7.7 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/KG	0	0%		0	0	41	7.4 U	10 U	6.3 U	7.7 U	8.5 U	7.7 U
1,1,2-Trichloroethane	UG/KG	0	0%		0	0	41	7.4 U	10 U	6.3 U	7.7 U	8.5 U	7.7 U
1,1-Dichloroethane	UG/KG	0	0%	270	0	0	41	7.4 U	10 U	6.3 U	7.7 U	8.5 U	7.7 U
1,1-Dichloroethene	UG/KG	0	0%	330	0	0	41	7.4 U	10 U	6.3 U	7.7 U	8.5 U	7.7 U
1,2,4-Trichlorobenzene	UG/KG	0	0%		0	0	41	7.4 U	10 U	6.3 U	7.7 U	8.5 U	7.7 U
1,2-Dibromo-3-chloropropane	UG/KG	0	0%		0	0	41	7.4 U	10 U	6.3 U	7.7 U	8.5 U	7.7 U
1,2-Dibromoethane	UG/KG	0	0%		0	0	41	7.4 U	10 U	6.3 U	7.7 U	8.5 U	7.7 U
1,2-Dichlorobenzene	UG/KG	0	0%	1100	0	0	41	7.4 U	10 U	6.3 U	7.7 U	8.5 U	7.7 U
1,2-Dichloroethane	UG/KG	0	0%	20	0	0	41	7.4 U	10 U	6.3 U	7.7 U	8.5 U	7.7 U
1,2-Dichloropropane	UG/KG	0	0%		0	0	41	7.4 U	10 U	6.3 U	7.7 U	8.5 U	7.7 U
1,3-Dichlorobenzene	UG/KG	0	0%	2400	0	0	41	7.4 U	10 U	6.3 U	7.7 U	8.5 U	7.7 U
1,4-Dichlorobenzene	UG/KG	0	0%	1800	0	0	41	7.4 U	10 U	6.3 U	7.7 U	8.5 U	7.7 U
Acetone	UG/KG	290	98%	50	31	40	41	65	280	60	59	150	51
Benzene	UG/KG	0	0%	60	0	0	41	7.4 U	10 U	6.3 U	7.7 U	8.5 U	7.7 U
Bromodichloromethane	UG/KG	0	0%		0	0	41	7.4 U	10 U	6.3 U	7.7 U	8.5 U	7.7 U
Bromoform	UG/KG	0	0%		0	0	41	7.4 U	10 U	6.3 U	7.7 U	8.5 U	7.7 U
Carbon disulfide	UG/KG	0	0%		0	0	41	15 U	20 U	13 U	15 U	17 U	15 U
Carbon tetrachloride	UG/KG	0	0%	760	0	0	41	7.4 U	10 U	6.3 U	7.7 U	8.5 U	7.7 U
Chlorobenzene	UG/KG	0	0%	1100	0	0	41	7.4 U	10 U	6.3 U	7.7 U	8.5 U	7.7 U
Chlorodibromomethane	UG/KG	0	0%		0	0	41	7.4 U	10 U	6.3 U	7.7 U	8.5 U	7.7 U
Chloroethane	UG/KG	0	0%		0	0	41	15 U	20 U	13 U	15 U	17 U	15 U
Chloroform	UG/KG	0	0%	370	0	0	41	7.4 U	10 U	6.3 U	7.7 U	8.5 U	7.7 U
Cis-1,2-Dichloroethene	UG/KG	0	0%	250	0	0	41	7.4 U	10 U	6.3 U	7.7 U	8.5 U	7.7 U
Cis-1,3-Dichloropropene	UG/KG	0	0%		0	0	41	7.4 U	10 U	6.3 U	7.7 U	8.5 U	7.7 U
Cyclohexane	UG/KG	1.5	2%		0	1	41	7.4 U	10 U	6.3 U	7.7 U	8.5 U	7.7 U
Dichlorodifluoromethane	UG/KG	0	0%		0	0	41	7.4 U	10 U	6.3 U	7.7 U	8.5 U	7.7 U
Ethyl benzene	UG/KG	0	0%	1000	0	0	41	7.4 U	10 U	6.3 U	7.7 U	8.5 U	7.7 U
Isopropylbenzene	UG/KG	0	0%		0	0	41	7.4 U	10 U	6.3 U	7.7 U	8.5 U	7.7 U
Meta Para Xylene	UG/KG	0	0%		0	0	41	7.4 U	10 U	6.3 U	7.7 U	8.5 U	7.7 U
Methyl Acetate	UG/KG	11	2%		0	1	41	15 U	20 U	13 U	15 UJ	17 U	15 U
Methyl Tertbutyl Ether	UG/KG	0	0%	930	0	0	41	7.4 U	10 U	6.3 U	7.7 U	8.5 U	7.7 U
Methyl bromide	UG/KG	0	0%		0	0	41	7.4 U	10 U	6.3 U	7.7 U	8.5 U	7.7 U
Methyl butyl ketone	UG/KG	8.1	2%		0	1	41	15 U	20 U	13 U	15 U	17 U	15 U
Methyl chloride	UG/KG	0	0%		0	0	41	7.4 U	10 U	6.3 U	7.7 U	8.5 U	7.7 U
Methyl cyclohexane	UG/KG	0	0%		0	0	41	7.4 U	10 U	6.3 U	7.7 U	8.5 U	7.7 U
Methyl ethyl ketone	UG/KG	63	90%	120	0	37	41	5.5 J	25	4.8 J	5.9 J	18	4.8 J
Methyl isobutyl ketone	UG/KG	0	0%		0	0	41	15 U	20 U	13 U	15 U	17 U	15 U
Methylene chloride	UG/KG	4.6	73%	50	0	30	41	1.3 J	10 U	1.2 J	1.5 J	1.8 J	1.3 J
Ortho Xylene	UG/KG	0	0%		0	0	41	7.4 U	10 U	6.3 U	7.7 U	8.5 U	7.7 U
Styrene	UG/KG	0	0%		0	0	41	7.4 U	10 U	6.3 U	7.7 U	8.5 U	7.7 U
Tetrachloroethene	UG/KG	2.4	10%	1300	0	4	41	7.4 U	10 U	6.3 U	7.7 U	8.5 U	7.7 U
Toluene	UG/KG	8.7	27%	700	0	11	41	7.4 U	0.91 J	6.3 U	7.7 U	8.5 U	7.7 U
Trans-1,2-Dichloroethene	UG/KG	0	0%	190	0	0	41	7.4 U	10 U	6.3 U	7.7 U	8.5 U	7.7 U
Trans-1,3-Dichloropropene	UG/KG	0	0%		0	0	41	7.4 U	10 U	6.3 U	7.7 U	8.5 U	7.7 U
Trichloroethene	UG/KG	0	0%	470	0	0	41	7.4 U	10 U	6.3 U	7.7 U	8.5 U	7.7 U
Trichlorofluoromethane	UG/KG	0	0%		0	0	41	7.4 U	10 U	6.3 U	7.7 U	8.5 U	7.7 U
Vinyl chloride	UG/KG	0	0%	20	0	0	41	7.4 U	10 U	6.3 U	7.7 U	8.5 U	7.7 U
Semivolatile Organic Compounds													
1,1'-Biphenyl	UG/KG	0	0%		0	0	41	470 U	480 U	430 U	490 U	500 U	460 U
2,4,5-Trichlorophenol	UG/KG	0	0%		0	0	41	470 U	480 U	430 U	490 U	500 U	460 U
2,4,6-Trichlorophenol	UG/KG	0	0%		0	0	41	470 U	480 U	430 U	490 U	500 U	460 U
2,4-Dichlorophenol	UG/KG	0	0%		0	0	41	470 U	480 U	430 U	490 U	500 U	460 U
2,4-Dimethylphenol	UG/KG	0	0%		0	0	41	470 U	480 U	430 U	490 U	500 U	460 U
2,4-Dinitrophenol	UG/KG	0	0%		0	0	41	2400 UJ	2500 U	2200 UJ	2500 UJ	2600 U	2400 UJ
2,4-Dinitrotoluene	UG/KG	430	2%		0	1	41	470 U	480 U	430 U	490 U	500 U	460 U
2,6-Dinitrotoluene	UG/KG	0	0%		0	0	41	470 U	480 U	430 U	490 U	500 U	460 U
2-Chloronaphthalene	UG/KG	0	0%		0	0	41	470 U	480 U	430 U	490 U	500 U	460 U
2-Chlorophenol	UG/KG	0	0%		0	0	41	470 U	480 U	430 U	490 U	500 U	460 U

TABLE 1
SEAD-007-R-001 (Grenade Range) SOIL SAMPLE RESULTS
SENECA ARMY DEPOT ACTIVITY

SITE LOCATION								GR	GR	GR	GR	GR	GR
LOCATION ID								GR-D1	GR-D2-A	GR-D2-B	GR-D3-A	GR-D3-A	GR-D3-B
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								007R011026	007R011024	007R011025	007R011021	007R011022	007R011023
TOP OF SAMPLE								0	0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								12/13/06	12/13/06	12/13/06	12/12/06	12/13/06	12/13/06
QC CODE								SA	SA	SA	DU	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA
Parameter	**Units**	**Maximum Concentration**	**Frequency of Detection**	**NYSDEC Unrestricted Use Value (1)**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed (2)**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
2-Nitrotoluene	UG/KG	0	0%		0	0	41	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
2-amino-4,6-Dinitrotoluene	UG/KG	0	0%		0	0	41	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
3-Nitrotoluene	UG/KG	0	0%		0	0	41	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
4-Nitrotoluene	UG/KG	0	0%		0	0	41	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
4-amino-2,6-Dinitrotoluene	UG/KG	0	0%		0	0	41	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
HMX	UG/KG	0	0%		0	0	41	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
Nitrobenzene	UG/KG	0	0%		0	0	41	500 U	500 U	500 U	500 U	500 U	500 U
Nitroglycerine	UG/KG	0	0%		0	0	41	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
Pentaerythritol Tetranitrate	UG/KG	0	0%		0	0	41	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
RDX	UG/KG	0	0%		0	0	41	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
Tetryl	UG/KG	0	0%		0	0	41	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
PCBs													
Aroclor-1016	UG/KG	0	0%		0	0	41	47 U	48 U	43 U	49 U	50 U	46 U
Aroclor-1221	UG/KG	0	0%		0	0	41	95 U	98 U	87 U	99 U	100 U	94 U
Aroclor-1232	UG/KG	0	0%		0	0	41	47 U	48 U	43 U	49 U	50 U	46 U
Aroclor-1242	UG/KG	0	0%		0	0	41	47 U	48 U	43 U	49 U	50 U	46 U
Aroclor-1248	UG/KG	0	0%		0	0	41	47 U	48 U	43 U	49 U	50 U	46 U
Aroclor-1254	UG/KG	0	0%		0	0	41	47 U	48 U	43 U	49 U	50 U	46 U
Aroclor-1260	UG/KG	0	0%		0	0	41	47 U	48 U	43 U	49 U	50 U	46 U
Pesticides													
4,4'-DDD	UG/KG	0	0%	3.3	0	0	41	4.7 U	4.8 U	4.3 U	4.9 U	5 U	4.6 U
4,4'-DDE	UG/KG	0	0%	3.3	0	0	41	4.7 U	4.8 U	4.3 U	4.9 U	5 U	4.6 U
4,4'-DDT	UG/KG	0	0%	3.3	0	0	41	4.7 U	4.8 U	4.3 U	4.9 U	5 U	4.6 U
Aldrin	UG/KG	0	0%	5	0	0	41	2.4 U	2.5 U	2.2 U	2.5 U	2.6 U	2.4 U
Alpha-BHC	UG/KG	0	0%	20	0	0	41	2.4 U	2.5 U	2.2 U	2.5 U	2.6 U	2.4 U
Alpha-Chlordane	UG/KG	0	0%	94	0	0	41	2.4 U	2.5 U	2.2 U	2.5 U	2.6 U	2.4 U
Beta-BHC	UG/KG	0	0%	36	0	0	41	2.4 U	2.5 U	2.2 U	2.5 U	2.6 U	2.4 U
Delta-BHC	UG/KG	0	0%	40	0	0	41	2.4 U	2.5 U	2.2 U	2.5 U	2.6 U	2.4 U
Dieldrin	UG/KG	0	0%	5	0	0	41	4.7 U	4.8 U	4.3 U	4.9 U	5 U	4.6 U
Endosulfan I	UG/KG	0	0%	2400	0	0	41	2.4 U	2.5 U	2.2 U	2.5 U	2.6 U	2.4 U
Endosulfan II	UG/KG	0	0%	2400	0	0	41	4.7 U	4.8 U	4.3 U	4.9 U	5 U	4.6 U
Endosulfan sulfate	UG/KG	0	0%	2400	0	0	41	4.7 U	4.8 U	4.3 U	4.9 U	5 U	4.6 U
Endrin	UG/KG	0	0%	14	0	0	41	4.7 U	4.8 U	4.3 U	4.9 U	5 U	4.6 U
Endrin aldehyde	UG/KG	0	0%		0	0	41	4.7 U	4.8 U	4.3 U	4.9 U	5 U	4.6 U
Endrin ketone	UG/KG	0	0%		0	0	41	4.7 U	4.8 U	4.3 U	4.9 U	5 U	4.6 U
Gamma-BHC Lindane	UG/KG	0	0%	100	0	0	41	2.4 U	2.5 U	2.2 U	2.5 U	2.6 U	2.4 U
Gamma-Chlordane	UG/KG	0	0%		0	0	41	2.4 U	2.5 U	2.2 U	2.5 U	2.6 U	2.4 U
Heptachlor	UG/KG	0	0%	42	0	0	41	2.4 U	2.5 U	2.2 U	2.5 U	2.6 U	2.4 U
Heptachlor epoxide	UG/KG	0	0%		0	0	41	2.4 U	2.5 U	2.2 U	2.5 U	2.6 U	2.4 U
Methoxychlor	UG/KG	0	0%		0	0	41	24 U	25 U	22 U	25 U	26 U	24 U
Toxaphene	UG/KG	0	0%		0	0	41	47 U	48 U	43 U	49 U	50 U	46 U
Metals													
Aluminum	MG/KG	19600	100%		0	41	41	14800	15400	14000	13100	17200	14600
Antimony	MG/KG	0	0%		0	0	41	0.49 UJ	0.51 UJ	0.44 UJ	0.5 UJ	0.51 UJ	0.48 UJ
Arsenic	MG/KG	9.3	100%	13	0	41	41	3.2	4.2	3.5	3.7	3.2	3.5
Barium	MG/KG	180	100%	350	0	41	41	84.6	93.2	77.1	104	149	112
Beryllium	MG/KG	1.1	98%	7.2	0	40	41	0.66 J	0.74 J	0.64 J	0.71	0.98 J	0.76 J
Cadmium	MG/KG	0.25	59%	2.5	0	24	41	0.05 U	0.05 U	0.04 U	0.05 U	0.2 J	0.08 J
Calcium	MG/KG	11100	100%		0	41	41	2450	3150	1480	2340 J	4520	3410
Chromium	MG/KG	27.7	100%		0	41	41	21.8	24	20.8	20.1	26.6	21.1
Cobalt	MG/KG	23.5	100%		0	41	41	9.3	10.4	10.2	13	10.7	9.2
Copper	MG/KG	22.2	100%	50	0	41	41	15.8	21.9	14.9	16.6	23.1	16.5
Iron	MG/KG	32300	100%		0	41	41	21600	24200	20300	21000	26800	21500
Lead	MG/KG	38.5	100%	63	0	41	41	22.8	21.3	21	19.9	25.9	22.3
Magnesium	MG/KG	5230	100%		0	41	41	3890	4500	3540	3290	4820	3920
Manganese	MG/KG	1880	100%	1600	1	41	41	398	359	480	693 J	532	339
Mercury	MG/KG	0.08	100%	0.18	0	41	41	0.05	0.05	0.04	0.06	0.08	0.05
Nickel	MG/KG	31.1	100%	30	2	41	41	23.4	28.4	22.6	21	**31.9**	23.5
Potassium	MG/KG	2370	100%		0	41	41	1710	1740	1410	1160	2310	1740
Selenium	MG/KG	4.4	100%	3.9	2	41	41	1.6 J	3.9	2 J	3.8	2.5 J	2.1 J
Silver	MG/KG	0	0%	2	0	0	41	0.16 U	0.17 U	0.14 U	0.16 U	0.17 U	0.16 U

TABLE 1
SEAD-007-R-001 (Grenade Range) SOIL SAMPLE RESULTS
SENECA ARMY DEPOT ACTIVITY

SITE LOCATION								GR	GR	GR	GR	GR	GR
LOCATION ID								GR-D4-A	GR-D4-B	GR-E1	GR-E2-A	GR-E2-B	GR-E3
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								007R011019	007R011020	007R011027	007R011028	007R011029	007R011030
TOP OF SAMPLE								0	0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								12/12/06	12/12/06	12/13/06	12/13/06	12/13/06	12/13/06
QC CODE								SA	SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA
Parameter	**Units**	**Maximum Concentration**	**Frequency of Detection**	**NYSDEC Unrestricted Use Value (1)**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed (2)**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Volatile Organic Compounds													
1,1,1-Trichloroethane	UG/KG	0	0%	680	0	0	41	8 U	6.8 U	7.7 U	7.6 U	8.3 U	9 U
1,1,2,2-Tetrachloroethane	UG/KG	0	0%		0	0	41	8 U	6.8 U	7.7 U	7.6 U	8.3 U	9 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/KG	0	0%		0	0	41	8 U	6.8 U	7.7 U	7.6 U	8.3 U	9 U
1,1,2-Trichloroethane	UG/KG	0	0%		0	0	41	8 U	6.8 U	7.7 U	7.6 U	8.3 U	9 U
1,1-Dichloroethane	UG/KG	0	0%	270	0	0	41	8 U	6.8 U	7.7 U	7.6 U	8.3 U	9 U
1,1-Dichloroethene	UG/KG	0	0%	330	0	0	41	8 U	6.8 U	7.7 U	7.6 U	8.3 U	9 U
1,2,4-Trichlorobenzene	UG/KG	0	0%		0	0	41	8 U	6.8 U	7.7 U	7.6 U	8.3 U	9 U
1,2-Dibromo-3-chloropropane	UG/KG	0	0%		0	0	41	8 U	6.8 U	7.7 U	7.6 U	8.3 U	9 U
1,2-Dibromoethane	UG/KG	0	0%		0	0	41	8 U	6.8 U	7.7 U	7.6 U	8.3 U	9 U
1,2-Dichlorobenzene	UG/KG	0	0%	1100	0	0	41	8 U	6.8 U	7.7 U	7.6 U	8.3 U	9 U
1,2-Dichloroethane	UG/KG	0	0%	20	0	0	41	8 U	6.8 U	7.7 U	7.6 U	8.3 U	9 U
1,2-Dichloropropane	UG/KG	0	0%		0	0	41	8 U	6.8 U	7.7 U	7.6 U	8.3 U	9 U
1,3-Dichlorobenzene	UG/KG	0	0%	2400	0	0	41	8 U	6.8 U	7.7 U	7.6 U	8.3 U	9 U
1,4-Dichlorobenzene	UG/KG	0	0%	1800	0	0	41	8 U	6.8 U	7.7 U	7.6 U	8.3 U	9 U
Acetone	UG/KG	290	98%	50	31	40	41	**200**	**64**	**100**	**200**	46	**72**
Benzene	UG/KG	0	0%	60	0	0	41	8 U	6.8 U	7.7 U	7.6 U	8.3 U	9 U
Bromodichloromethane	UG/KG	0	0%		0	0	41	8 U	6.8 U	7.7 U	7.6 U	8.3 U	9 U
Bromoform	UG/KG	0	0%		0	0	41	8 UJ	6.8 UJ	7.7 U	7.6 U	8.3 U	9 U
Carbon disulfide	UG/KG	0	0%		0	0	41	16 U	14 U	15 U	15 U	17 U	18 U
Carbon tetrachloride	UG/KG	0	0%	760	0	0	41	8 U	6.8 U	7.7 U	7.6 U	8.3 U	9 U
Chlorobenzene	UG/KG	0	0%	1100	0	0	41	8 U	6.8 U	7.7 U	7.6 U	8.3 U	9 U
Chlorodibromomethane	UG/KG	0	0%		0	0	41	8 U	6.8 U	7.7 U	7.6 U	8.3 U	9 U
Chloroethane	UG/KG	0	0%		0	0	41	16 U	14 U	15 U	15 U	17 U	18 U
Chloroform	UG/KG	0	0%	370	0	0	41	8 U	6.8 U	7.7 U	7.6 U	8.3 U	9 U
Cis-1,2-Dichloroethene	UG/KG	0	0%	250	0	0	41	8 U	6.8 U	7.7 U	7.6 U	8.3 U	9 U
Cis-1,3-Dichloropropene	UG/KG	0	0%		0	0	41	8 U	6.8 U	7.7 U	7.6 U	8.3 U	9 U
Cyclohexane	UG/KG	1.5	2%		0	1	41	8 U	6.8 U	7.7 U	7.6 U	8.3 U	9 U
Dichlorodifluoromethane	UG/KG	0	0%		0	0	41	8 UJ	6.8 UJ	7.7 U	7.6 U	8.3 U	9 U
Ethyl benzene	UG/KG	0	0%	1000	0	0	41	8 U	6.8 U	7.7 U	7.6 U	8.3 U	9 U
Isopropylbenzene	UG/KG	0	0%		0	0	41	8 U	6.8 U	7.7 U	7.6 U	8.3 U	9 U
Meta Para Xylene	UG/KG	0	0%		0	0	41	8 U	6.8 U	7.7 U	7.6 U	8.3 U	9 U
Methyl Acetate	UG/KG	11	2%		0	1	41	16 U	14 U	15 U	15 U	17 U	18 U
Methyl Tertbutyl Ether	UG/KG	0	0%	930	0	0	41	8 U	6.8 U	7.7 U	7.6 U	8.3 U	9 U
Methyl bromide	UG/KG	0	0%		0	0	41	8 U	6.8 U	7.7 U	7.6 U	8.3 U	9 U
Methyl butyl ketone	UG/KG	8.1	2%		0	1	41	16 U	14 U	15 U	15 U	17 U	18 U
Methyl chloride	UG/KG	0	0%		0	0	41	8 U	6.8 U	7.7 U	7.6 U	8.3 U	9 U
Methyl cyclohexane	UG/KG	0	0%		0	0	41	8 U	6.8 U	7.7 U	7.6 U	8.3 U	9 U
Methyl ethyl ketone	UG/KG	63	90%	120	0	37	41	14 J	11 J	6.5 J	14 J	4.3 J	18 U
Methyl isobutyl ketone	UG/KG	0	0%		0	0	41	16 U	14 U	15 U	15 U	17 U	18 U
Methylene chloride	UG/KG	4.6	73%	50	0	30	41	1.3 J	1.3 J	1 J	1.3 J	1.2 J	1.4 J
Ortho Xylene	UG/KG	0	0%		0	0	41	8 U	6.8 U	7.7 U	7.6 U	8.3 U	9 U
Styrene	UG/KG	0	0%		0	0	41	8 U	6.8 U	7.7 U	7.6 U	8.3 U	9 U
Tetrachloroethene	UG/KG	2.4	10%	1300	0	4	41	8 U	6.8 U	2.4 J	7.6 U	8.3 U	9 U
Toluene	UG/KG	8.7	27%	700	0	11	41	3.8 J	6.8 U	0.74 J	2 J	8.3 U	9 U
Trans-1,2-Dichloroethene	UG/KG	0	0%	190	0	0	41	8 U	6.8 U	7.7 U	7.6 U	8.3 U	9 U
Trans-1,3-Dichloropropene	UG/KG	0	0%		0	0	41	8 U	6.8 U	7.7 U	7.6 U	8.3 U	9 U
Trichloroethene	UG/KG	0	0%	470	0	0	41	8 U	6.8 U	7.7 U	7.6 U	8.3 U	9 U
Trichlorofluoromethane	UG/KG	0	0%		0	0	41	8 U	6.8 U	7.7 U	7.6 U	8.3 U	9 U
Vinyl chloride	UG/KG	0	0%	20	0	0	41	8 U	6.8 U	7.7 U	7.6 U	8.3 U	9 U
Semivolatile Organic Compounds													
1,1'-Biphenyl	UG/KG	0	0%		0	0	41	460 U	430 U	460 U	480 U	490 U	490 U
2,4,5-Trichlorophenol	UG/KG	0	0%		0	0	41	460 U	430 U	460 U	480 U	490 U	490 U
2,4,6-Trichlorophenol	UG/KG	0	0%		0	0	41	460 U	430 U	460 U	480 U	490 U	490 U
2,4-Dichlorophenol	UG/KG	0	0%		0	0	41	460 U	430 U	460 U	480 U	490 U	490 U
2,4-Dimethylphenol	UG/KG	0	0%		0	0	41	460 U	430 U	460 U	480 U	490 U	490 U
2,4-Dinitrophenol	UG/KG	0	0%		0	0	41	2400 UJ	2200 UJ	2400 UJ	2500 UJ	2500 UJ	2500 UJ
2,4-Dinitrotoluene	UG/KG	430	2%		0	1	41	460 U	430 U	460 U	480 U	490 U	490 U
2,6-Dinitrotoluene	UG/KG	0	0%		0	0	41	460 U	430 U	460 U	480 U	490 U	490 U
2-Chloronaphthalene	UG/KG	0	0%		0	0	41	460 U	430 U	460 U	480 U	490 U	490 U
2-Chlorophenol	UG/KG	0	0%		0	0	41	460 U	430 U	460 U	480 U	490 U	490 U

TABLE 1
SEAD-007-R-001 (Grenade Range) SOIL SAMPLE RESULTS
SENECA ARMY DEPOT ACTIVITY

SITE LOCATION								GR	GR	GR	GR	GR	GR
LOCATION ID								GR-D4-A	GR-D4-B	GR-E1	GR-E2-A	GR-E2-B	GR-E3
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								007R011019	007R011020	007R011027	007R011028	007R011029	007R011030
TOP OF SAMPLE								0	0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								12.12.06	12.12.06	12.13.06	12.13.06	12.13/06	12.13.06
QC CODE								SA	SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA
Parameter	**Units**	**Maximum Concentration**	**Frequency of Detection**	**NYSDEC Unrestricted Use Value (1)**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed (2)**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
2-Nitrotoluene	UG/KG	0	0%		0	0	41	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
2-amino-4,6-Dinitrotoluene	UG/KG	0	0%		0	0	41	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
3-Nitrotoluene	UG/KG	0	0%		0	0	41	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
4-Nitrotoluene	UG/KG	0	0%		0	0	41	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
4-amino-2,6-Dinitrotoluene	UG/KG	0	0%		0	0	41	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
HMX	UG/KG	0	0%		0	0	41	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
Nitrobenzene	UG/KG	0	0%		0	0	41	500 U	500 U	500 U	500 U	500 U	500 U
Nitroglycerine	UG/KG	0	0%		0	0	41	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
Pentaerythritol Tetranitrate	UG/KG	0	0%		0	0	41	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
RDX	UG/KG	0	0%		0	0	41	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
Tetryl	UG/KG	0	0%		0	0	41	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
PCBs													
Aroclor-1016	UG/KG	0	0%		0	0	41	46 U	43 U	46 U	48 U	49 U	49 U
Aroclor-1221	UG/KG	0	0%		0	0	41	94 U	88 U	93 U	98 U	100 U	99 U
Aroclor-1232	UG/KG	0	0%		0	0	41	46 U	43 U	46 U	48 U	49 U	49 U
Aroclor-1242	UG/KG	0	0%		0	0	41	46 U	43 U	46 U	48 U	49 U	49 U
Aroclor-1248	UG/KG	0	0%		0	0	41	46 U	43 U	46 U	48 U	49 U	49 U
Aroclor-1254	UG/KG	0	0%		0	0	41	46 U	43 U	46 U	48 U	49 U	49 U
Aroclor-1260	UG/KG	0	0%		0	0	41	46 U	43 U	46 U	48 U	49 U	49 U
Pesticides													
4,4'-DDD	UG/KG	0	0%	3.3	0	0	41	4.6 U	4.3 U	4.6 U	4.8 U	4.9 U	4.9 U
4,4'-DDE	UG/KG	0	0%	3.3	0	0	41	4.6 U	4.3 U	4.6 U	4.8 U	4.9 U	4.9 U
4,4'-DDT	UG/KG	0	0%	3.3	0	0	41	4.6 U	4.3 U	4.6 U	4.8 U	4.9 U	4.9 U
Aldrin	UG/KG	0	0%	5	0	0	41	2.4 U	2.2 U	2.4 U	2.5 U	2.5 U	2.5 U
Alpha-BHC	UG/KG	0	0%	20	0	0	41	2.4 U	2.2 U	2.4 U	2.5 U	2.5 U	2.5 U
Alpha-Chlordane	UG/KG	0	0%	94	0	0	41	2.4 U	2.2 U	2.4 U	2.5 U	2.5 U	2.5 U
Beta-BHC	UG/KG	0	0%	36	0	0	41	2.4 U	2.2 U	2.4 U	2.5 U	2.5 U	2.5 U
Delta-BHC	UG/KG	0	0%	40	0	0	41	2.4 U	2.2 U	2.4 U	2.5 U	2.5 U	2.5 U
Dieldrin	UG/KG	0	0%	5	0	0	41	4.6 U	4.3 U	4.6 U	4.8 U	4.9 U	4.9 U
Endosulfan I	UG/KG	0	0%	2400	0	0	41	2.4 U	2.2 U	2.4 U	2.5 U	2.5 U	2.5 U
Endosulfan II	UG/KG	0	0%	2400	0	0	41	4.6 U	4.3 U	4.6 U	4.8 U	4.9 U	4.9 U
Endosulfan sulfate	UG/KG	0	0%	2400	0	0	41	4.6 U	4.3 U	4.6 U	4.8 U	4.9 U	4.9 U
Endrin	UG/KG	0	0%	14	0	0	41	4.6 U	4.3 U	4.6 U	4.8 U	4.9 U	4.9 U
Endrin aldehyde	UG/KG	0	0%		0	0	41	4.6 U	4.3 U	4.6 U	4.8 U	4.9 U	4.9 U
Endrin ketone	UG/KG	0	0%		0	0	41	4.6 U	4.3 U	4.6 U	4.8 U	4.9 U	4.9 U
Gamma-BHC Lindane	UG/KG	0	0%	100	0	0	41	2.4 U	2.2 U	2.4 U	2.5 U	2.5 U	2.5 U
Gamma-Chlordane	UG/KG	0	0%		0	0	41	2.4 U	2.2 U	2.4 U	2.5 U	2.5 U	2.5 U
Heptachlor	UG/KG	0	0%	42	0	0	41	2.4 U	2.2 U	2.4 U	2.5 U	2.5 U	2.5 U
Heptachlor epoxide	UG/KG	0	0%		0	0	41	2.4 U	2.2 U	2.4 U	2.5 U	2.5 U	2.5 U
Methoxychlor	UG/KG	0	0%		0	0	41	24 U	22 U	24 U	25 U	25 U	25 U
Toxaphene	UG/KG	0	0%		0	0	41	46 U	43 U	46 U	48 U	49 U	49 U
Metals													
Aluminum	MG/KG	19600	100%		0	41	41	10500	15700	14400	15500	17300	18600
Antimony	MG/KG	0	0%		0	0	41	0.47 UJ	0.44 UJ	0.48 UJ	0.5 UJ	0.52 UJ	0.51 UJ
Arsenic	MG/KG	9.3	100%	13	0	41	41	2.7	4.9	3.3	3.4	4.3	3.8
Barium	MG/KG	180	100%	350	0	41	41	61.9	119	116	92.8	148	155
Beryllium	MG/KG	1.1	98%	7.2	0	40	41	0.45 J	0.83	0.77 J	0.79 J	0.99 J	1.1 J
Cadmium	MG/KG	0.25	59%	2.5	0	24	41	0.05 U	0.04 U	0.12 J	0.13 J	0.25 J	0.22 J
Calcium	MG/KG	11100	100%		0	41	41	2130 J	2310 J	3360	2340	3250	4240
Chromium	MG/KG	27.7	100%		0	41	41	13.7	23.3	20.1	22.9	24.6	26.3
Cobalt	MG/KG	23.5	100%		0	41	41	5.2 J	16.2	8.7	10.6	13.6	9.9
Copper	MG/KG	22.2	100%	50	0	41	41	11.6	18.7	16.9	21.9	19	20.5
Iron	MG/KG	32300	100%		0	41	41	13700	24200	20000	22800	26100	25100
Lead	MG/KG	38.5	100%	63	0	41	41	13.6	21.5	21.7	22.6	26	23.8
Magnesium	MG/KG	5230	100%		0	41	41	2370	3760	3590	4280	4260	4440
Manganese	MG/KG	1880	100%	1600	1	41	41	230 J	980 J	471	412	1220	672
Mercury	MG/KG	0.08	100%	0.18	0	41	41	0.05 J	0.06	0.06	0.05	0.06	0.08
Nickel	MG/KG	31.1	100%	30	2	41	41	11.6	24.8	22.4	28.6	27.2	27.9
Potassium	MG/KG	2370	100%		0	41	41	962	1380	1720	2260	2120	2370
Selenium	MG/KG	4.4	100%	3.9	2	41	41	2.7	4.4	1.9 J	1.9 J	2.5 J	2.5 J
Silver	MG/KG	0	0%	2	0	0	41	0.15 U	0.15 U	0.16 U	0.16 U	0.17 U	0.17 U

TABLE 1
SEAD-007-R-001 (Grenade Range) SOIL SAMPLE RESULTS
SENECA ARMY DEPOT ACTIVITY

SITE LOCATION								GR	GR	GR	GR	GR	GR
LOCATION ID								GR-E4	GR-F1	GR-F2	GR-F3	GR-F4	GR-G1
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								007R011031	007R011035	007R011034	007R011033	007R011032	007R011036
TOP OF SAMPLE								0	0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								12/13/06	12/13/06	12/13/06	12/13/06	12/13/06	12/13/06
QC CODE								SA	SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA
Parameter	Units	Maximum Concentration	Frequency of Detection	NYSDEC Unrestricted Use Value (1)	Number of Exceedances	Number of Times Detected	Number of Samples Analyzed (2)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Volatile Organic Compounds													
1,1,1-Trichloroethane	UG/KG	0	0%	680	0	0	41	7.1 U	9.6 U	6.7 U	7.3 U	7.1 U	7.2 U
1,1,2,2-Tetrachloroethane	UG/KG	0	0%		0	0	41	7.1 U	9.6 U	6.7 U	7.3 U	7.1 U	7.2 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/KG	0	0%		0	0	41	7.1 U	9.6 U	6.7 U	7.3 U	7.1 U	7.2 U
1,1,2-Trichloroethane	UG/KG	0	0%		0	0	41	7.1 U	9.6 U	6.7 U	7.3 U	7.1 U	7.2 U
1,1-Dichloroethane	UG/KG	0	0%	270	0	0	41	7.1 U	9.6 U	6.7 U	7.3 U	7.1 U	7.2 U
1,1-Dichloroethene	UG/KG	0	0%	330	0	0	41	7.1 U	9.6 U	6.7 U	7.3 U	7.1 U	7.2 U
1,2,4-Trichlorobenzene	UG/KG	0	0%		0	0	41	7.1 U	9.6 U	6.7 U	7.3 U	7.1 U	7.2 U
1,2-Dibromo-3-chloropropane	UG/KG	0	0%		0	0	41	7.1 U	9.6 U	6.7 U	7.3 U	7.1 U	7.2 U
1,2-Dibromoethane	UG/KG	0	0%		0	0	41	7.1 U	9.6 U	6.7 U	7.3 U	7.1 U	7.2 U
1,2-Dichlorobenzene	UG/KG	0	0%	1100	0	0	41	7.1 U	9.6 U	6.7 U	7.3 U	7.1 U	7.2 U
1,2-Dichloroethane	UG/KG	0	0%	20	0	0	41	7.1 U	9.6 U	6.7 U	7.3 U	7.1 U	7.2 U
1,2-Dichloropropane	UG/KG	0	0%		0	0	41	7.1 U	9.6 U	6.7 U	7.3 U	7.1 U	7.2 U
1,3-Dichlorobenzene	UG/KG	0	0%	2400	0	0	41	7.1 U	9.6 U	6.7 U	7.3 U	7.1 U	7.2 U
1,4-Dichlorobenzene	UG/KG	0	0%	1800	0	0	41	7.1 U	9.6 U	6.7 U	7.3 U	7.1 U	7.2 U
Acetone	UG/KG	290	98%	50	31	40	41	140	240	130	76	210	110
Benzene	UG/KG	0	0%	60	0	0	41	7.1 U	9.6 U	6.7 U	7.3 U	7.1 U	7.2 U
Bromodichloromethane	UG/KG	0	0%		0	0	41	7.1 U	9.6 U	6.7 U	7.3 U	7.1 U	7.2 U
Bromoform	UG/KG	0	0%		0	0	41	7.1 U	9.6 U	6.7 U	7.3 U	7.1 U	7.2 U
Carbon disulfide	UG/KG	0	0%		0	0	41	14 U	19 U	13 U	15 U	14 U	14 U
Carbon tetrachloride	UG/KG	0	0%	760	0	0	41	7.1 U	9.6 U	6.7 U	7.3 U	7.1 U	7.2 U
Chlorobenzene	UG/KG	0	0%	1100	0	0	41	7.1 U	9.6 U	6.7 U	7.3 U	7.1 U	7.2 U
Chlorodibromomethane	UG/KG	0	0%		0	0	41	7.1 U	9.6 U	6.7 U	7.3 U	7.1 U	7.2 U
Chloroethane	UG/KG	0	0%		0	0	41	14 U	19 U	13 U	15 U	14 U	14 U
Chloroform	UG/KG	0	0%	370	0	0	41	7.1 U	9.6 U	6.7 U	7.3 U	7.1 U	7.2 U
Cis-1,2-Dichloroethene	UG/KG	0	0%	250	0	0	41	7.1 U	9.6 U	6.7 U	7.3 U	7.1 U	7.2 U
Cis-1,3-Dichloropropene	UG/KG	0	0%		0	0	41	7.1 U	9.6 U	6.7 U	7.3 U	7.1 U	7.2 U
Cyclohexane	UG/KG	1.5	2%		0	1	41	7.1 U	9.6 U	6.7 U	7.3 U	7.1 U	7.2 U
Dichlorodifluoromethane	UG/KG	0	0%		0	0	41	7.1 U	9.6 U	6.7 U	7.3 U	7.1 U	7.2 U
Ethyl benzene	UG/KG	0	0%	1000	0	0	41	7.1 U	9.6 U	6.7 U	7.3 U	7.1 U	7.2 U
Isopropylbenzene	UG/KG	0	0%		0	0	41	7.1 U	9.6 U	6.7 U	7.3 U	7.1 U	7.2 U
Meta Para Xylene	UG/KG	0	0%		0	0	41	7.1 U	9.6 U	6.7 U	7.3 U	7.1 U	7.2 U
Methyl Acetate	UG/KG	11	2%		0	1	41	11 J	19 U	13 U	15 U	14 U	14 U
Methyl Tertbutyl Ether	UG/KG	0	0%	930	0	0	41	7.1 U	9.6 U	6.7 U	7.3 U	7.1 U	7.2 U
Methyl bromide	UG/KG	0	0%		0	0	41	7.1 U	9.6 U	6.7 U	7.3 U	7.1 U	7.2 U
Methyl butyl ketone	UG/KG	8.1	2%		0	1	41	14 U	8.1 J	13 U	15 U	14 U	14 U
Methyl chloride	UG/KG	0	0%		0	0	41	7.1 U	9.6 U	6.7 U	7.3 U	7.1 U	7.2 U
Methyl cyclohexane	UG/KG	0	0%		0	0	41	7.1 U	9.6 U	6.7 U	7.3 U	7.1 U	7.2 U
Methyl ethyl ketone	UG/KG	63	90%	120	0	37	41	12 J	63	13 J	25	13 J	24
Methyl isobutyl ketone	UG/KG	0	0%		0	0	41	14 U	19 U	13 U	15 U	14 U	14 U
Methylene chloride	UG/KG	4.6	73%	50	0	30	41	0.92 J	9.6 U	6.7 U	7.3 U	1.4 J	7.2 U
Ortho Xylene	UG/KG	0	0%		0	0	41	7.1 U	9.6 U	6.7 U	7.3 U	7.1 U	7.2 U
Styrene	UG/KG	0	0%		0	0	41	7.1 U	9.6 U	6.7 U	7.3 U	7.1 U	7.2 U
Tetrachloroethene	UG/KG	2.4	10%	1300	0	4	41	1.1 J	9.6 U	6.7 U	7.3 U	7.1 U	0.7 J
Toluene	UG/KG	8.7	27%	700	0	11	41	0.54 J	1.1 J	6.7 U	7.3 U	8.7	1.2 J
Trans-1,2-Dichloroethene	UG/KG	0	0%	190	0	0	41	7.1 U	9.6 U	6.7 U	7.3 U	7.1 U	7.2 U
Trans-1,3-Dichloropropene	UG/KG	0	0%		0	0	41	7.1 U	9.6 U	6.7 U	7.3 U	7.1 U	7.2 U
Trichloroethene	UG/KG	0	0%	470	0	0	41	7.1 U	9.6 U	6.7 U	7.3 U	7.1 U	7.2 U
Trichlorofluoromethane	UG/KG	0	0%		0	0	41	7.1 U	9.6 U	6.7 U	7.3 U	7.1 U	7.2 U
Vinyl chloride	UG/KG	0	0%	20	0	0	41	7.1 U	9.6 U	6.7 U	7.3 U	7.1 U	7.2 U
Semivolatile Organic Compounds													
1,1'-Biphenyl	UG/KG	0	0%		0	0	41	430 U	500 U	440 U	460 U	450 U	440 U
2,4,5-Trichlorophenol	UG/KG	0	0%		0	0	41	430 U	500 U	440 U	460 U	450 U	440 U
2,4,6-Trichlorophenol	UG/KG	0	0%		0	0	41	430 U	500 U	440 U	460 U	450 U	440 U
2,4-Dichlorophenol	UG/KG	0	0%		0	0	41	430 U	500 U	440 U	460 U	450 U	440 U
2,4-Dimethylphenol	UG/KG	0	0%		0	0	41	430 U	500 U	440 U	460 U	450 U	440 U
2,4-Dinitrophenol	UG/KG	0	0%		0	0	41	2200 UJ	2600 U	2300 U	2400 U	2300 U	2300 U
2,4-Dinitrotoluene	UG/KG	430	2%		0	1	41	430 U	500 U	440 U	460 U	450 U	440 U
2,6-Dinitrotoluene	UG/KG	0	0%		0	0	41	430 U	500 U	440 U	460 U	450 U	440 U
2-Chloronaphthalene	UG/KG	0	0%		0	0	41	430 U	500 U	440 U	460 U	450 U	440 U
2-Chlorophenol	UG/KG	0	0%		0	0	41	430 U	500 U	440 U	460 U	450 U	440 U

TABLE 1
SEAD-007-R-001 (Grenade Range) SOIL SAMPLE RESULTS
SENECA ARMY DEPOT ACTIVITY

SITE LOCATION								GR	GR	GR	GR	GR	GR
LOCATION ID								GR-E4	GR-F1	GR-F2	GR-F3	GR-F4	GR-G1
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								007R011031	007R011035	007R011034	007R011033	007R011032	007R011036
TOP OF SAMPLE								0	0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								12/13/06	12/13/06	12/13/06	12/13/06	12/13/06	12/13/06
QC CODE								SA	SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA
Parameter	**Units**	**Maximum Concentration**	**Frequency of Detection**	**NYSDEC Unrestricted Use Value (1)**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed (2)**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
2-Nitrotoluene	UG/KG	0	0%		0	0	41	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
2-amino-4,6-Dinitrotoluene	UG/KG	0	0%		0	0	41	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
3-Nitrotoluene	UG/KG	0	0%		0	0	41	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
4-Nitrotoluene	UG/KG	0	0%		0	0	41	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
4-amino-2,6-Dinitrotoluene	UG/KG	0	0%		0	0	41	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
HMX	UG/KG	0	0%		0	0	41	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
Nitrobenzene	UG/KG	0	0%		0	0	41	500 U	500 U	500 U	500 U	500 U	500 U
Nitroglycerine	UG/KG	0	0%		0	0	41	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
Pentaerythritol Tetranitrate	UG/KG	0	0%		0	0	41	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
RDX	UG/KG	0	0%		0	0	41	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
Tetryl	UG/KG	0	0%		0	0	41	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
PCBs													
Aroclor-1016	UG/KG	0	0%		0	0	41	43 UJ	50 U	44 U	46 U	45 U	44 U
Aroclor-1221	UG/KG	0	0%		0	0	41	88 UJ	100 U	89 U	94 U	92 U	90 U
Aroclor-1232	UG/KG	0	0%		0	0	41	43 UJ	50 U	44 U	46 U	45 U	44 U
Aroclor-1242	UG/KG	0	0%		0	0	41	43 UJ	50 U	44 U	46 U	45 U	44 U
Aroclor-1248	UG/KG	0	0%		0	0	41	43 UJ	50 U	44 U	46 U	45 U	44 U
Aroclor-1254	UG/KG	0	0%		0	0	41	43 UJ	50 U	44 U	46 U	45 U	44 U
Aroclor-1260	UG/KG	0	0%		0	0	41	43 UJ	50 U	44 U	46 U	45 U	44 U
Pesticides													
4,4'-DDD	UG/KG	0	0%	3.3	0	0	41	4.3 U	5 U	4.4 U	4.6 U	4.5 U	4.4 U
4,4'-DDE	UG/KG	0	0%	3.3	0	0	41	4.3 U	5 U	4.4 U	4.6 U	4.5 U	4.4 U
4,4'-DDT	UG/KG	0	0%	3.3	0	0	41	4.3 U	5 U	4.4 U	4.6 U	4.5 U	4.4 U
Aldrin	UG/KG	0	0%	5	0	0	41	2.2 U	2.6 U	2.3 U	2.4 U	2.3 U	2.3 U
Alpha-BHC	UG/KG	0	0%	20	0	0	41	2.2 U	2.6 U	2.3 U	2.4 U	2.3 U	2.3 U
Alpha-Chlordane	UG/KG	0	0%	94	0	0	41	2.2 U	2.6 U	2.3 U	2.4 U	2.3 U	2.3 U
Beta-BHC	UG/KG	0	0%	36	0	0	41	2.2 U	2.6 U	2.3 U	2.4 U	2.3 U	2.3 U
Delta-BHC	UG/KG	0	0%	40	0	0	41	2.2 U	2.6 U	2.3 U	2.4 U	2.3 U	2.3 U
Dieldrin	UG/KG	0	0%	5	0	0	41	4.3 U	5 U	4.4 U	4.6 U	4.5 U	4.4 U
Endosulfan I	UG/KG	0	0%	2400	0	0	41	2.2 U	2.6 U	2.3 U	2.4 U	2.3 U	2.3 U
Endosulfan II	UG/KG	0	0%	2400	0	0	41	4.3 U	5 U	4.4 U	4.6 U	4.5 U	4.4 U
Endosulfan sulfate	UG/KG	0	0%	2400	0	0	41	4.3 U	5 U	4.4 U	4.6 U	4.5 U	4.4 U
Endrin	UG/KG	0	0%	14	0	0	41	4.3 U	5 U	4.4 U	4.6 U	4.5 U	4.4 U
Endrin aldehyde	UG/KG	0	0%		0	0	41	4.3 U	5 U	4.4 U	4.6 U	4.5 U	4.4 U
Endrin ketone	UG/KG	0	0%		0	0	41	4.3 U	5 U	4.4 U	4.6 U	4.5 U	4.4 U
Gamma-BHC Lindane	UG/KG	0	0%	100	0	0	41	2.2 U	2.6 U	2.3 U	2.4 U	2.3 U	2.3 U
Gamma-Chlordane	UG/KG	0	0%		0	0	41	2.2 U	2.6 U	2.3 U	2.4 U	2.3 U	2.3 U
Heptachlor	UG/KG	0	0%	42	0	0	41	2.2 U	2.6 U	2.3 U	2.4 U	2.3 U	2.3 U
Heptachlor epoxide	UG/KG	0	0%		0	0	41	2.2 U	2.6 U	2.3 U	2.4 U	2.3 U	2.3 U
Methoxychlor	UG/KG	0	0%		0	0	41	22 U	26 U	23 U	24 U	23 U	23 U
Toxaphene	UG/KG	0	0%		0	0	41	43 U	50 U	44 U	46 U	45 U	44 U
Metals													
Aluminum	MG/KG	19600	100%		0	41	41	16300	15300	14800	16600	14300	15000
Antimony	MG/KG	0	0%		0	0	41	0.44 UJ	0.53 UJ	0.46 UJ	0.47 UJ	0.47 UJ	0.46 UJ
Arsenic	MG/KG	9.3	100%	13	0	41	41	3.9	2.4	3.6	3.1	4.5	2.5
Barium	MG/KG	180	100%	350	0	41	41	86.2	110	60.5	128	99.5	87.4
Beryllium	MG/KG	1.1	98%	7.2	0	40	41	0.68 J	0.75 J	0.6 J	0.81 J	0.71 J	0.68 J
Cadmium	MG/KG	0.25	59%	2.5	0	24	41	0.04 U	0.08 J	0.05 U	0.11 J	0.1 J	0.05 U
Calcium	MG/KG	11100	100%		0	41	41	1530	3580	1900	2900	2130	1800
Chromium	MG/KG	27.7	100%		0	41	41	21.4	22.5	22.4	23.1	19.3	21.4
Cobalt	MG/KG	23.5	100%		0	41	41	11.3	9.4	8.6	12.1	13.7	8.9
Copper	MG/KG	22.2	100%	50	0	41	41	13.2	17.2	18.4	15.6	13	16.4
Iron	MG/KG	32300	100%		0	41	41	23400	20800	21100	21700	23200	20000
Lead	MG/KG	38.5	100%	63	0	41	41	21.5	24.7	22.8	22	23.1	20.7
Magnesium	MG/KG	5230	100%		0	41	41	3660	3820	3970	3880	3070	3650
Manganese	MG/KG	1880	100%	1600	1	41	41	648	553	217	818	1180	521
Mercury	MG/KG	0.08	100%	0.18	0	41	41	0.04	0.06	0.04 J	0.05	0.05	0.05
Nickel	MG/KG	31.1	100%	30	2	41	41	20.1	24.9	24.2	23.7	18	22.7
Potassium	MG/KG	2370	100%		0	41	41	1400	2370	1860	1930	1470	1570
Selenium	MG/KG	4.4	100%	3.9	2	41	41	2.1 J	1.5 J	1.9 J	1.7 J	2.2 J	1.6 J
Silver	MG/KG	0	0%	2	0	0	41	0.15 U	0.17 U	0.15 U	0.15 U	0.15 U	0.15 U

TABLE 1
SEAD-007-R-001 (Grenade Range) SOIL SAMPLE RESULTS
SENECA ARMY DEPOT ACTIVITY

SITE LOCATION								GR	GR	GR	GR	GR	GR
LOCATION ID								GR-G2	GR-G2	GR-G3-A	GR-G3-B	GR-G4-A	GR-G4-B
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								007R011041	007R011037	007R011038	007R011039	007R011040	007R011042
TOP OF SAMPLE								0	0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								12/13/06	12/13/06	12/13/06	12/13/06	12/13/06	12/13/06
QC CODE								DU	SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA
Parameter	**Units**	**Maximum Concentration**	**Frequency of Detection**	**NYSDEC Unrestricted Use Value (1)**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed (2)**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Volatile Organic Compounds													
1,1,1-Trichloroethane	UG/KG	0	0%	680	0	0	41	7.6 U	7.2 U	8.2 U	8.4 U	6.7 U	6.9 U
1,1,2,2-Tetrachloroethane	UG/KG	0	0%		0	0	41	7.6 U	7.2 U	8.2 U	8.4 U	6.7 U	6.9 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/KG	0	0%		0	0	41	7.6 U	7.2 U	8.2 U	8.4 U	6.7 U	6.9 U
1,1,2-Trichloroethane	UG/KG	0	0%		0	0	41	7.6 U	7.2 U	8.2 U	8.4 U	6.7 U	6.9 U
1,1-Dichloroethane	UG/KG	0	0%	270	0	0	41	7.6 U	7.2 U	8.2 U	8.4 U	6.7 U	6.9 U
1,1-Dichloroethene	UG/KG	0	0%	330	0	0	41	7.6 U	7.2 U	8.2 U	8.4 U	6.7 U	6.9 U
1,2,4-Trichlorobenzene	UG/KG	0	0%		0	0	41	7.6 U	7.2 U	8.2 U	8.4 U	6.7 U	6.9 U
1,2-Dibromo-3-chloropropane	UG/KG	0	0%		0	0	41	7.6 U	7.2 U	8.2 U	8.4 U	6.7 U	6.9 U
1,2-Dibromoethane	UG/KG	0	0%		0	0	41	7.6 U	7.2 U	8.2 U	8.4 U	6.7 U	6.9 U
1,2-Dichlorobenzene	UG/KG	0	0%	1100	0	0	41	7.6 U	7.2 U	8.2 U	8.4 U	6.7 U	6.9 U
1,2-Dichloroethane	UG/KG	0	0%	20	0	0	41	7.6 U	7.2 U	8.2 U	8.4 U	6.7 U	6.9 U
1,2-Dichloropropane	UG/KG	0	0%		0	0	41	7.6 U	7.2 U	8.2 U	8.4 U	6.7 U	6.9 U
1,3-Dichlorobenzene	UG/KG	0	0%	2400	0	0	41	7.6 U	7.2 U	8.2 U	8.4 U	6.7 U	6.9 U
1,4-Dichlorobenzene	UG/KG	0	0%	1800	0	0	41	7.6 U	7.2 U	8.2 U	8.4 U	6.7 U	6.9 U
Acetone	UG/KG	290	98%	50	31	40	41	290 J	75 J	200	160	150	130
Benzene	UG/KG	0	0%	60	0	0	41	7.6 U	7.2 U	8.2 U	8.4 U	6.7 U	6.9 U
Bromodichloromethane	UG/KG	0	0%		0	0	41	7.6 U	7.2 U	8.2 U	8.4 U	6.7 U	6.9 U
Bromoform	UG/KG	0	0%		0	0	41	7.6 U	7.2 U	8.2 U	8.4 U	6.7 U	6.9 U
Carbon disulfide	UG/KG	0	0%		0	0	41	15 U	14 U	16 U	17 U	13 U	14 U
Carbon tetrachloride	UG/KG	0	0%	760	0	0	41	7.6 U	7.2 U	8.2 U	8.4 U	6.7 U	6.9 U
Chlorobenzene	UG/KG	0	0%	1100	0	0	41	7.6 U	7.2 U	8.2 U	8.4 U	6.7 U	6.9 U
Chlorodibromomethane	UG/KG	0	0%		0	0	41	7.6 U	7.2 U	8.2 U	8.4 U	6.7 U	6.9 U
Chloroethane	UG/KG	0	0%		0	0	41	15 U	14 U	16 U	17 U	13 U	14 U
Chloroform	UG/KG	0	0%	370	0	0	41	7.6 U	7.2 U	8.2 U	8.4 U	6.7 U	6.9 U
Cis-1,2-Dichloroethene	UG/KG	0	0%	250	0	0	41	7.6 U	7.2 U	8.2 U	8.4 U	6.7 U	6.9 U
Cis-1,3-Dichloropropene	UG/KG	0	0%		0	0	41	7.6 U	7.2 U	8.2 U	8.4 U	6.7 U	6.9 U
Cyclohexane	UG/KG	1.5	2%		0	1	41	7.6 U	7.2 U	8.2 U	8.4 U	6.7 U	6.9 U
Dichlorodifluoromethane	UG/KG	0	0%		0	0	41	7.6 U	7.2 U	8.2 U	8.4 U	6.7 U	6.9 U
Ethyl benzene	UG/KG	0	0%	1000	0	0	41	7.6 U	7.2 U	8.2 U	8.4 U	6.7 U	6.9 U
Isopropylbenzene	UG/KG	0	0%		0	0	41	7.6 U	7.2 U	8.2 U	8.4 U	6.7 U	6.9 U
Meta-Para Xylene	UG/KG	0	0%		0	0	41	7.6 U	7.2 U	8.2 U	8.4 U	6.7 U	6.9 U
Methyl Acetate	UG/KG	11	2%		0	1	41	15 U	14 U	16 U	17 U	13 U	14 U
Methyl Tertbutyl Ether	UG/KG	0	0%	930	0	0	41	7.6 U	7.2 U	8.2 U	8.4 U	6.7 U	6.9 U
Methyl bromide	UG/KG	0	0%		0	0	41	7.6 U	7.2 U	8.2 U	8.4 U	6.7 U	6.9 U
Methyl butyl ketone	UG/KG	8.1	2%		0	1	41	15 U	14 U	16 U	17 U	13 U	14 U
Methyl chloride	UG/KG	0	0%		0	0	41	7.6 U	7.2 U	8.2 U	8.4 U	6.7 U	6.9 U
Methyl cyclohexane	UG/KG	0	0%		0	0	41	7.6 U	7.2 U	8.2 U	8.4 U	6.7 U	6.9 U
Methyl ethyl ketone	UG/KG	63	90%	120	0	37	41	27 J	5.5 J	29	13 J	11 J	9.5 J
Methyl isobutyl ketone	UG/KG	0	0%		0	0	41	15 U	14 U	16 U	17 U	13 U	14 U
Methylene chloride	UG/KG	4.6	73%	50	0	30	41	7.6 U	7.2 U	8.2 U	8.4 U	6.7 U	6.9 U
Ortho Xylene	UG/KG	0	0%		0	0	41	7.6 U	7.2 U	8.2 U	8.4 U	6.7 U	6.9 U
Styrene	UG/KG	0	0%		0	0	41	7.6 U	7.2 U	8.2 U	8.4 U	6.7 U	6.9 U
Tetrachloroethene	UG/KG	2.4	10%	1300	0	4	41	7.6 U	7.2 U	8.2 U	8.4 U	6.7 U	0.55 J
Toluene	UG/KG	8.7	27%	700	0	11	41	0.8 J	7.2 U	0.59 J	8.4 U	6.7 U	0.63 J
Trans-1,2-Dichloroethene	UG/KG	0	0%	190	0	0	41	7.6 U	7.2 U	8.2 U	8.4 U	6.7 U	6.9 U
Trans-1,3-Dichloropropene	UG/KG	0	0%		0	0	41	7.6 U	7.2 U	8.2 U	8.4 U	6.7 U	6.9 U
Trichloroethene	UG/KG	0	0%	470	0	0	41	7.6 U	7.2 U	8.2 U	8.4 U	6.7 U	6.9 U
Trichlorofluoromethane	UG/KG	0	0%		0	0	41	7.6 U	7.2 U	8.2 U	8.4 U	6.7 U	6.9 U
Vinyl chloride	UG/KG	0	0%	20	0	0	41	7.6 U	7.2 U	8.2 U	8.4 U	6.7 U	6.9 U
Semivolatile Organic Compounds													
1,1'-Biphenyl	UG/KG	0	0%		0	0	41	450 U	450 U	470 U	480 U	440 U	450 U
2,4,5-Trichlorophenol	UG/KG	0	0%		0	0	41	450 U	450 U	470 U	480 U	440 U	450 U
2,4,6-Trichlorophenol	UG/KG	0	0%		0	0	41	450 U	450 U	470 U	480 U	440 U	450 U
2,4-Dichlorophenol	UG/KG	0	0%		0	0	41	450 U	450 U	470 U	480 U	440 U	450 U
2,4-Dimethylphenol	UG/KG	0	0%		0	0	41	450 U	450 U	470 U	480 U	440 U	450 U
2,4-Dinitrophenol	UG/KG	0	0%		0	0	41	2300 U	2300 U	2400 U	2500 U	2300 U	2300 U
2,4-Dinitrotoluene	UG/KG	430	2%		0	1	41	430 J	450 U	470 U	480 U	440 U	450 U
2,6-Dinitrotoluene	UG/KG	0	0%		0	0	41	450 U	450 U	470 U	480 U	440 U	450 U
2-Chloronaphthalene	UG/KG	0	0%		0	0	41	450 U	450 U	470 U	480 U	440 U	450 U
2-Chlorophenol	UG/KG	0	0%		0	0	41	450 U	450 U	470 U	480 U	440 U	450 U

TABLE 1
SEAD-007-R-001 (Grenade Range) SOIL SAMPLE RESULTS
SENECA ARMY DEPOT ACTIVITY

SITE LOCATION								GR	GR	GR	GR	GR	GR
LOCATION ID								GR-G2	GR-G2	GR-G3-A	GR-G3-B	GR-G4-A	GR-G4-B
MATRIX								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE ID								007R011041	007R011037	007R011038	007R011039	007R011040	007R011042
TOP OF SAMPLE								0	0	0	0	0	0
BOTTOM OF SAMPLE								0.2	0.2	0.2	0.2	0.2	0.2
SAMPLE DATE								12/13/06	12/13/06	12/13/06	12/13/06	12/13/06	12/13/06
QC CODE								DU	SA	SA	SA	SA	SA
STUDY ID								RA	RA	RA	RA	RA	RA
Parameter	**Units**	**Maximum Concentration**	**Frequency of Detection**	**NYSDEC Unrestricted Use Value (1)**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed (2)**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
2-Nitrotoluene	UG/KG	0	0%		0	0	41	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
2-amino-4,6-Dinitrotoluene	UG/KG	0	0%		0	0	41	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
3-Nitrotoluene	UG/KG	0	0%		0	0	41	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
4-Nitrotoluene	UG/KG	0	0%		0	0	41	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
4-amino-2,6-Dinitrotoluene	UG/KG	0	0%		0	0	41	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
HMX	UG/KG	0	0%		0	0	41	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
Nitrobenzene	UG/KG	0	0%		0	0	41	500 U	500 U	500 U	500 U	500 U	500 U
Nitroglycerine	UG/KG	0	0%		0	0	41	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
Pentaerythritol Tetranitrate	UG/KG	0	0%		0	0	41	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
RDX	UG/KG	0	0%		0	0	41	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
Tetryl	UG/KG	0	0%		0	0	41	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
PCBs													
Aroclor-1016	UG/KG	0	0%		0	0	41	45 U	45 U	47 U	48 U	44 U	45 U
Aroclor-1221	UG/KG	0	0%		0	0	41	91 U	92 U	96 U	98 U	90 U	92 U
Aroclor-1232	UG/KG	0	0%		0	0	41	45 U	45 U	47 U	48 U	44 U	45 U
Aroclor-1242	UG/KG	0	0%		0	0	41	45 U	45 U	47 U	48 U	44 U	45 U
Aroclor-1248	UG/KG	0	0%		0	0	41	45 U	45 U	47 U	48 U	44 U	45 U
Aroclor-1254	UG/KG	0	0%		0	0	41	45 U	45 U	47 U	48 U	44 U	45 U
Aroclor-1260	UG/KG	0	0%		0	0	41	45 U	45 U	47 U	48 U	44 U	45 U
Pesticides													
4,4'-DDD	UG/KG	0	0%	3.3	0	0	41	4.5 U	4.5 U	4.7 U	4.8 U	4.4 U	4.5 U
4,4'-DDE	UG/KG	0	0%	3.3	0	0	41	4.5 U	4.5 U	4.7 U	4.8 U	4.4 U	4.5 U
4,4'-DDT	UG/KG	0	0%	3.3	0	0	41	4.5 U	4.5 U	4.7 U	4.8 U	4.4 U	4.5 U
Aldrin	UG/KG	0	0%	5	0	0	41	2.3 U	2.3 U	2.4 U	2.5 U	2.3 U	2.3 U
Alpha-BHC	UG/KG	0	0%	20	0	0	41	2.3 U	2.3 U	2.4 U	2.5 U	2.3 U	2.3 U
Alpha-Chlordane	UG/KG	0	0%	94	0	0	41	2.3 U	2.3 U	2.4 U	2.5 U	2.3 U	2.3 U
Beta-BHC	UG/KG	0	0%	36	0	0	41	2.3 U	2.3 U	2.4 U	2.5 U	2.3 U	2.3 U
Delta-BHC	UG/KG	0	0%	40	0	0	41	2.3 U	2.3 U	2.4 U	2.5 U	2.3 U	2.3 U
Dieldrin	UG/KG	0	0%	5	0	0	41	4.5 U	4.5 U	4.7 U	4.8 U	4.4 U	4.5 U
Endosulfan I	UG/KG	0	0%	2400	0	0	41	2.3 U	2.3 U	2.4 U	2.5 U	2.3 U	2.3 U
Endosulfan II	UG/KG	0	0%	2400	0	0	41	4.5 U	4.5 U	4.7 U	4.8 U	4.4 U	4.5 U
Endosulfan sulfate	UG/KG	0	0%	2400	0	0	41	4.5 U	4.5 U	4.7 U	4.8 U	4.4 U	4.5 U
Endrin	UG/KG	0	0%	14	0	0	41	4.5 U	4.5 U	4.7 U	4.8 U	4.4 U	4.5 U
Endrin aldehyde	UG/KG	0	0%		0	0	41	4.5 U	4.5 U	4.7 U	4.8 U	4.4 U	4.5 U
Endrin ketone	UG/KG	0	0%		0	0	41	4.5 U	4.5 U	4.7 U	4.8 U	4.4 U	4.5 U
Gamma-BHC Lindane	UG/KG	0	0%	100	0	0	41	2.3 U	2.3 U	2.4 U	2.5 U	2.3 U	2.3 U
Gamma-Chlordane	UG/KG	0	0%		0	0	41	2.3 U	2.3 U	2.4 U	2.5 U	2.3 U	2.3 U
Heptachlor	UG/KG	0	0%	42	0	0	41	2.3 U	2.3 U	2.4 U	2.5 U	2.3 U	2.3 U
Heptachlor epoxide	UG/KG	0	0%		0	0	41	2.3 U	2.3 U	2.4 U	2.5 U	2.3 U	2.3 U
Methoxychlor	UG/KG	0	0%		0	0	41	23 U	23 U	24 U	25 U	23 U	23 U
Toxaphene	UG/KG	0	0%		0	0	41	45 U	45 U	47 U	48 U	44 U	45 U
Metals													
Aluminum	MG/KG	19600	100%		0	41	41	16400	15900	13200	16200	12200	14000
Antimony	MG/KG	0	0%		0	0	41	0.46 UJ	0.48 UJ	0.48 UJ	0.49 UJ	0.46 UJ	0.46 UJ
Arsenic	MG/KG	9.3	100%	13	0	41	41	3.6	3.3	2.8	3.2	2.8	3
Barium	MG/KG	180	100%	350	0	41	41	86	84.6	97.6	180	84.5	88.2
Beryllium	MG/KG	1.1	98%	7.2	0	40	41	0.76 J	0.75 J	0.58 J	0.95 J	0.55 J	0.69 J
Cadmium	MG/KG	0.25	59%	2.5	0	24	41	0.05 U	0.05 J	0.05 U	0.24 J	0.05 J	0.05 U
Calcium	MG/KG	11100	100%		0	41	41	2090	2250	3120	4420	2370	3020
Chromium	MG/KG	27.7	100%		0	41	41	24.4	23.9	16.7	23.1	15.9	20.2
Cobalt	MG/KG	23.5	100%		0	41	41	13.9	13.7	5 J	9.4	10.5	8.6
Copper	MG/KG	22.2	100%	50	0	41	41	21.4	21	12.1	20.8	11.8	15.9
Iron	MG/KG	32300	100%		0	41	41	24300	23800	15900	22400	16400	20900
Lead	MG/KG	38.5	100%	63	0	41	41	27	26.3	18.2	38.5	17.1	20
Magnesium	MG/KG	5230	100%		0	41	41	4380	4300	2940	3940	2790	3700
Manganese	MG/KG	1880	100%	1600	1	41	41	606	605	133	564	563	269
Mercury	MG/KG	0.08	100%	0.18	0	41	41	0.05	0.04 J	0.05	0.08	0.04	0.05
Nickel	MG/KG	31.1	100%	30	2	41	41	**31.1**	**30.5**	13.9	24.9	14.7	21.7
Potassium	MG/KG	2370	100%		0	41	41	2030	1970	1230	1900	1090	1500
Selenium	MG/KG	4.4	100%	3.9	2	41	41	2 J	1.6 J	1.4 J	2.2 J	1.3 J	1.8 J
Silver	MG/KG	0	0%	2	0	0	41	0.15 U	0.16 U	0.16 U	0.16 U	0.15 U	0.15 U

TABLE 2
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN IN SEAD-007-R-01 (Grenade Range) SOIL
SENECA ARMY DEPOT ACTIVITY

Scenario Time frame:	Curent/Future
Medium:	Soil
Exposure Medium:	Soil
Exposure Point:	Grenade Range

CAS Number	Chemical	Minimum Detected Concentration [1] (mg/kg)	Q	Maximum Detected Concentration [1] (mg/kg)	Q	Location of Maximum Concentration	Detection Frequency [1]			Range of Reporting Limits 1 (mg/kg)			Concentration Used for Screening [2] (mg/kg)	Background Value [3] (mg/kg)	Screening Value [4] (mg/kg)	Potential ARAR/TBC Source	ARAR / TBC Value [5] (mg/kg)	COPC Flag	Rationale for Contaminant Deletion or Selection [6]
VOC																			
67-64-1	Acetone	0.012	J	0.29	J	GR-G2	41	/	42	0.0296	-	0.0296	0.29		6,100	NYSDEC Subpart 375-6	0.05	NO	BSL
110-82-7	Cyclohexane	0.0015	J	0.0015	J	GR-A2-B	1	/	42	0.0059	-	0.014	0.0015		720			NO	BSL
79-20-9	Methyl Acetate	0.011	J	0.011	J	GR-E4	1	/	42	0.012	-	0.028	0.011		7,800			NO	BSL
96-33-3	Methyl butyl ketone	0.0081	J	0.0081	J	GR-F1	1	/	42	0.012	-	0.028	0.0081		230			NO	BSL
78-93-3	Methyl ethyl ketone	0.0021	J	0.063		GR-F1	38	/	42	0.013	-	0.019	0.063		2,800	NYSDEC Subpart 375-6	0.12	NO	BSL
75-09-2	Methylene chloride	0.00092	J	0.0046	J	GR-B4-A	31	/	42	0.0067	-	0.01	0.0046		11	NYSDEC Subpart 375-6	0.05	NO	BSL
127-18-4	Tetrachloroethene	0.00055	J	0.0024	J	GR-E1	4	/	42	0.0059	-	0.014	0.0024		0.57	NYSDEC Subpart 375-6	1.3	NO	BSL
108-88-3	Toluene	0.00054	J	0.0087		GR-F4	11	/	42	0.0059	-	0.014	0.0087		500	NYSDEC Subpart 375-6	0.7	NO	BSL
SVOCs																			
121-14-2	2,4-Dinitrotoluene	0.43	J	0.43	J	GR-G2	1	/	42	0.42	-	0.51	0.43		1.6			NO	BSL
100-52-7	Benzaldehyde	0.42	J	0.42	J	GR-G3-A	1	/	42	0.42	-	0.51	0.42		780			NO	BSL
METALS																			
7429-90-5	Aluminum	10,500		19,600		GR-B4-A	42	/	42	0	-	0	19,600	20,500	7,700			YES	ASL
7440-38-2	Arsenic	2.4		9.3		GR-A4-A	42	/	42	0	-	0	9.3	21.5	0.39	NYSDEC Subpart 375-6	13	YES	ASL
7440-39-3	Barium	60.5		180		GR-G3-B	42	/	42	0	-	0	180	159	1,500	NYSDEC Subpart 375-6	350	NO	BSL
7440-41-7	Beryllium	0.45	J	1.1	J	GR-E3	41	/	42	0.02	-	0.02	1.1	1.4	16	NYSDEC Subpart 375-6	7.2	NO	BSL
7440-43-9	Cadmium	0.04	J	0.25	J	GR-E2-B	24	/	42	0.04	-	0.05	0.25	2.9	7	NYSDEC Subpart 375-6	2.5	NO	BSL
7440-70-2	Calcium	1,480		11,100		GR-C1	42	/	42	0	-	0	11,100	293,000					NUT
7440-47-3	Chromium	13.7		27.7		GR-A2-B	42	/	42	0	-	0	27.7	32.7	280			NO	BSL
7440-48-4	Cobalt	5	J	23.5		GR-A2-B	42	/	42	0	-	0	23.5	29.1	2.3			YES	ASL
7440-50-8	Copper	11.6		23.1		GR-D3-A	42	/	42	0	-	0	23.1	62.8	310	NYSDEC Subpart 375-6	50	NO	BSL
7439-89-6	Iron	13,700		32,300		GR-A2-B	42	/	42	0	-	0	32,300	38,600	5,500			YES	ASL
7439-92-1	Lead	13.6		38.5		GR-G3-B	42	/	42	0	-	0	38.5	266	40	NYSDEC Subpart 375-6	63	NO	BSL
7539-95-4	Magnesium	2,370		5,230		GR-C1	42	/	42	0	-	0	5,230	29,100					NUT
7439-96-5	Manganese	133		1,880		GR-A2-B	42	/	42	0	-	0	1,880	2,380	180	NYSDEC Subpart 375-6	1,600	YES	ASL
7439-97-6	Mercury	0.04		0.08		GR-A4-B	42	/	42	0	-	0	0.08	0.13	0.43	NYSDEC Subpart 375-6	0.18	NO	BSL
7440-02-0	Nickel	11.6		31.9		GR-D3-A	42	/	42	0	-	0	31.9	62.3	150	NYSDEC Subpart 375-6	30	NO	BSL
7440-09-7	Potassium	962		2370		GR-E3	42	/	42	0	-	0	2370	3,160					NUT
7782-49-2	Selenium	1.3	J	4.4		GR-D4-B	42	/	42	0	-	0	4.4	1.7	39	NYSDEC Subpart 375-6	3.9	NO	BSL
122-34-9	Sodium	32.2	J	54.7	J	GR-G3-B	27	/	42	125	-	153	54.7	269	4			YES	NUT
7440-62-2	Vanadium	20.5		33.5		GR-A2-B	42	/	42	0	-	0	33.5	32.7	55			NO	BSL
7440-66-6	Zinc	51		110		GR-E3	42	/	42	0	-	0	110	126	2,300	NYSDEC Subpart 375-6	109	NO	BSL

Notes:

1. Field duplicate pairs were averaged as a discrete sample. Laboratory duplicates were not included in the assessment. Range of reporting limits were presented for nondetects only.
2. The maximum detected concentration was used for screening.
3. Background value is the maximum Seneca background concentration.
4. EPA Regional Screening Levels for residential soil. On-line resources available at http://www.epa.gov/region09/superfund/prg/index.html. Last updated April 2009.
   Region 9 PRGs were derived based on Direct contact exposure (ingestion and dermal contact) and a target Cancer Risk of 1E-6 or a Target Hazard Quotient of 0.1.
   Screening values for calcium, magnesium, potassium, and sodium were calculated based on an assumption of 200 mg/day soil ingestion and recommended dietary allowances and adequate intakes for 1-3 yr children
   (500 mg/day and 80 mg/day for calcium and magnesium) and minimum requirements for 1 yr children (225 mg/day and 1000 mg/day for sodium and potassium) from Marilyn Wright (2001) Dietary Reference Intakes.
   PRG for total chromium (1:6 ratio Cr VI: Cr III) was used as screening value for chromium.
   PRG for nickel (soluble salts) was used as screening value for nickel.
5. Potential ARAR/TBC values are from NYSDEC Brownfield Unrestricted Use Soil Cleanup Objectives, http://www.dec.state.ny.us/website/regs/subpart375_6.html
6. Rationale codes
   Selection Reason:
   Above Screening Levels (ASL)
   No Screening Value (NSV)
   Chemicals in the Same Group were retained as COPC (CSG)
   Deletion Reason:
   Essential Nutrient (NUT)
   Below Screening Level (BSL)

Definitions:

COPC = Chemical of Potential Concern
ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered
Q = Qualifier
J = Estimated Value

TABLE 3A
SOIL EXPOSURE POINT CONCENTRATION SUMMARY FOR SEAD-007-R-01 (Grenade Range)
SENECA ARMY DEPOT ACTIVITY

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Soil
Exposure Point:	Grenade Range

CAS #	Chemical of Potential Concern	Units	Arithmetic Mean (1)	EPA ProUCL Student-t 95th UCL Value (1, 2)	Maximum Detected Concentration (1)	Q	EPC Units	Reasonable Maximum Exposure (2)		
								EPA ProUCL Recommended UCL Value	Medium EPC Statistic	Medium EPC Rationale
7429-90-5	Aluminum	mg/kg	15,338	15,771	19,600		mg/kg	15,771	95% Student's-t UCL	Normal
7440-38-2	Arsenic	mg/kg	3.66	3.94	9.3		mg/kg	3.94	95% Student's-t UCL	Normal
7440-48-4	Cobalt	mg/kg	10.28	11.07	23.5		mg/kg	11.07	95% Approximate Gamma	Gamma
7439-89-6	Iron	mg/kg	22,314	23,107	32,300		mg/kg	23,107	95% Student's-t UCL	Normal
7439-96-5	Manganese	mg/kg	551.20	631.6	1,880		mg/kg	631.6	95% Approximate Gamma	Gamma

Notes:

1. Field duplicates were not averaged and presented as discreet samples. Laboratory duplicates were not included in the assessment. Non-detectes were included in the dataset and 95% UCL analysis was performed as 'With ND' in ProUCL.
2. The EPCs were calculated using the ProUCL (Version 4.00.02) and the EPCs were selected in accordance with the ProUCL Version 4.0 User Guide (USEPA, 2004) and the Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites (USEPA, 2002).

Q - qualifier
J = Estimated Value
KM = Kaplan-Meier statistical method

TABLE 3B
AMBIENT AIR EXPOSURE POINT CONCENTRATIONS FOR PARK WORKERS, VISITORS, & RESIDENTS AT SEAD-007-R-01 (Grenade Range)
SENECA ARMY DEPOT ACTIVITY

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Air
Exposure Point:	SEAD-007-R-01-(Grenade Range)

Equation for Air EPC from Surface Soil (mg/m^3) = CSsurf x PM10 x CF

Variables:
CSsurf = Chemical Concentration in Surface Soil, from EPC data (mg/kg)
PM10 = Average Measured PM10 Concentration = 41.18 ug/m^3
CF = Conversion Factor = 1E-9 kg/ug

Analyte	Reasonable Maximum Exposure	
	EPC Data for Surface Soil (mg/kg)	**Calculated Air EPC Surface Soil** (mg/m^3)
Aluminum	1.6E+04	6.5E-04
Arsenic	3.9E+00	1.6E-07
Cobalt	1.1E+01	4.6E-07
Iron	2.3E+04	9.5E-04
Manganese	6.3E+02	2.6E-05

TABLE 4
CALCULATION OF INTAKE AND RISK FROM THE INGESTION OF SOIL
REASONABLE MAXIMUM EXPOSURE (RME) - SEAD-007-R-01 (Grenade Range)
SENECA ARMY DEPOT ACTIVITY

Equation for Intake (mg/kg-day) = $\frac{EPC \times IR \times CF \times FI \times EF \times ED \times B}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):

EPC = Exposure Point Concentration in Soil, mg/kg		EF = Exposure Frequency
IR = Ingestion Rate		ED = Exposure Duration
CF = Conversion Factor	B = Bioavailability	BW = Bodyweight
FI = Fraction Ingested		AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Oral RfD	Carc. Slope Oral	Bioavailability	EPC Surface Soil	Park Worker				Construction Worker				Recreational Child Visitor			
					Intake (mg/kg-day)		Hazard Quotient	Cancer Risk	Intake (mg/kg-day)		Hazard Quotient	Cancer Risk	Intake (mg/kg-day)		Hazard Quotient	Cancer Risk
	(mg/kg-day)	(mg/kg-day)-1	(unitless)	(mg/kg)	(Nc)	(Car)			(Nc)	(Car)			(Nc)	(Car)		
Aluminum	1.00E+00	N/A	1	1.6E+04	1.08E-02		1E-02		5.09E-02		5E-02		8.07E-03		8E-03	
Arsenic	3.00E-04	1.5E+00	1	3.9E+00	2.70E-06	9.63E-07	9E-03	1E-06	1.27E-05	1.82E-07	4E-02	3E-07	2.01E-06	1.44E-07	7E-03	2E-07
Cobalt	3.00E-04	N/A	1	1.1E+01	7.58E-06		3E-02		3.57E-05		1E-01		5.66E-06		2E-02	
Iron	3.00E-01	N/A	1	2.3E+04	1.58E-02		5E-02		7.46E-02		2E-01		1.18E-02		4E-02	
Manganese	2.40E-02	N/A	1	6.3E+02	4.33E-04		2E-02		2.04E-03		8E-02		3.23E-04		1E-02	
Total Hazard Quotient and Cancer Risk:							**1E-01**	**1E-06**			**5E-01**	**3E-07**			**9E-02**	**2E-07**

Assumptions for Park Worker		Assumptions for Construction Worker		Assumptions for Recreational Child Visitor	
CF =	1E-06 kg/mg	CF =	1E-06 kg/mg	CF =	1E-06 kg/mg
EPC=	EPC Surface Only	EPC=	EPC Surface and Subsurface	EPC=	EPC Surface Only
BW =	70 kg	BW =	70 kg	BW =	15 kg
IR =	100 mg/day	IR =	330 mg/day	IR =	200 mg/day
FI =	1 unitless	FI =	1 unitless	FI =	1 unitless
EF =	175 days/year	EF =	250 days/year	EF =	14 days/year
ED =	25 years	ED =	1 years	ED =	5 years
AT (Nc) =	9,125 days	AT (Nc) =	365 days	AT (Nc) =	1,825 days
AT (Car) =	25,550 days	AT (Car) =	25,550 days	AT (Car) =	25,550 days

TABLE 5
CALCULATION OF ABSORBED DOSE AND RISK FROM DERMAL CONTACT TO SOIL
REASONABLE MAXIMUM EXPOSURE (RME) - SEAD-007-R-01 (Grenade Range) SOIL
SENECA ARMY DEPOT ACTIVITY

Equation for Intake (mg/kg-day) = $\frac{EPC \times CF \times SA \times AF \times ABS \times EV \times EF \times ED}{B \quad W \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):

EPC = Chemical Concentration in Soil, mg/kg
CF = Conversion Factor
SA = Surface Area Contact
AF = Adherence Factor
ABS = Absorption Factor
EV = Event Frequency
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Dermal RfD	Carc. Slope Dermal	Absorption Fraction*	EPC Surface Soil	EPC from Total Soils	Park Worker				Construction Worker				Recreational Child Visitor			
						Absorbed Dose (mg/kg-day)		Hazard Quotient	Cancer Risk	Absorbed Dose (mg/kg-day)		Hazard Quotient	Cancer Risk	Absorbed Dose (mg/kg-day)		Hazard Quotient	Cancer Risk
	(mg/kg-day)	(mg/kg-day)-1	(unitless)	(mg/kg)	(mg/kg)	(Nc)	(Car)			(Nc)	(Car)			(Nc)	(Car)		
Aluminum	1.00E+00	N/A	1E-03	1.6E+04	1.6E+04	7.13E-05		7E-05		1.53E-04		2E-04		2.26E-05		2.26E-05	
Arsenic	3.00E-04	1.5E+00	3E-02	3.9E+00	3.9E+00	5.34E-07	1.91E-07	2E-03	3E-07	1.14E-06	1.63E-08	4E-03	2E-08	1.69E-07	1.21E-08	5.64E-04	1.81E-08
Cobalt	3.00E-04	N/A	1E-03	1.1E+01	1.1E+01	5.00E-08		2E-04		1.07E-07		4E-04		1.59E-08		5.28E-05	
Iron	3.00E-01	N/A	1E-03	2.3E+04	2.3E+04	1.04E-04		3E-04		2.24E-04		7E-04		3.31E-05		1.10E-04	
Manganese	9.60E-04	N/A	1E-03	6.3E+02	6.3E+02	2.86E-06		3E-03		6.12E-06		6E-03		9.04E-07		9.42E-04	
Total Hazard Quotient and Cancer Risk:								**5E-03**	**3E-07**			**1E-02**	**2E-08**			**2E-03**	**2E-08**

Assumptions for Park Worker		Assumptions for Construction Worker		Assumptions for Recreational Child Visitor	
CF =	1E-06 kg/mg	CF =	1E-06 kg/mg	CF =	1E-06 kg/mg
CS =	EPC Surface Only	EPC =	EPC Surface and Subsurface	EPC =	EPC Surface Only
BW =	70 kg	BW =	70 kg	BW =	15 kg
SA =	3,300 cm^2	SA =	3,300 cm^2	SA =	2,800 cm^2
AF =	0.2 mg/cm^2-event	AF =	0.3 mg/cm^2-event	AF =	0.2 mg/cm^2-event
EV =	1 event/day	EV =	1 event/day	EV =	1 event/day
EF =	175 days/year	EF =	250 days/year	EF =	14 days/year
ED	25 years	ED =	1 years	ED =	5 years
AT (Nc) =	9,125 days	AT (Nc) =	365 days	AT (Nc) =	1,825 days
AT (Car) =	25,550 days	AT (Car) =	25,550 days	AT (Car) =	25,550 days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.
* Absorption factors from Exhibit 3-4 of USEPA (2004) Supplemental Guidance for Dermal Risk Assessment, Part E of Risk Assessment Guidance for Superfund, Human Health Evaluation Manual (Volume I).
Absorption factor for VOC was assumed to be 0.01 and metals not presented in the EPA (2004) document, assumed to be 0.001 in accordance with the USEPA Region 4 (2000)
Supplemental Guidance to RAGS: Region 4 Bulletins, Human Health Risk Assessment Bulletins (http://www.epa.gov/region4/waste/ots/healtbul.htm).
Absorption factor for pesticides was assumed to be 0.037 in accordance with the average absorption factor of chlordane (0.03), DDT (0.04), and lindane (0.04) in accordance with USEPA Region 4 (2000).

TABLE 6
CALCULATION OF INTAKE AND RISK FROM INHALATION OF DUST IN AMBIENT AIR
REASONABLE MAXIMUM EXPOSURE (RME) - SEAD-007-R-01 (Grenade Range) SOIL
SENECA ARMY DEPOT ACTIVITY

Equation for Intake (mg/kg-day) = $\frac{EPC \times IR \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):

EPC = EPC in Air, mg/m3
IR = Inhalation Rate
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Inhalation RfD	Carc. Slope Inhalation	Air EPC from Surface Soil	Air EPC from Total Soils	Park Worker				Construction Worker				Recreational Child Visitor			
					Intake (mg/kg-day)		Hazard Quotient	Cancer Risk	Intake (mg/kg-day)		Hazard Quotient	Cancer Risk	Intake (mg/kg-day)		Hazard Quotient	Cancer Risk
	(mg/kg-day)	(mg/kg-day)-1	(mg/m3)	(mg/m3)	(Nc)	(Car)			(Nc)	(Car)			(Nc)	(Car)		
Aluminum	1.43E-03	N/A	6.5E-04	6.5E-04	3.56E-05		2E-02		6.61E-05		5E-02		1.44E-05		1E-02	
Arsenic	N/A	1.51E+01	1.6E-07	1.6E-07		3.17E-09		5E-08		2.36E-10		4E-09		2.58E-10		4E-09
Cobalt	1.71E-06	3.15E+01	4.6E-07	4.6E-07	2.50E-08	8.92E-09	1E-02	3E-07	4.64E-08	6.63E-10	3E-02	2E-08	1.01E-08	7.24E-10	6E-03	2E-08
Iron	N/A	N/A	9.5E-04	9.5E-04												
Manganese	1.43E-05	N/A	2.6E-05	2.6E-05	1.43E-06		1E-01		2.65E-06		2E-01		5.79E-07		4E-02	
Total Hazard Quotient and Cancer Risk:							**1E-01**	**3E-07**			**3E-01**	**2E-08**			**6E-02**	**3E-08**

Assumptions for Park Worker		Assumptions for Construction Worker		Assumptions for Recreational Child Visitor	
CA =	EPC Surface Only	CA =	EPC Surface and Sub-Surface	CA =	EPC Surface Only
BW =	70 kg	BW =	70 kg	BW =	15 kg
IR =	8 m3/day	IR =	10.4 m3/day	IR =	8.7 m3/day
EF =	175 days/year	EF =	250 days/year	EF =	14 days/year
ED =	25 years	ED =	1 year	ED =	5 years
AT (Nc) =	9,125 days	AT (Nc) =	365 days	AT (Nc) =	1,825 days
AT (Car) =	25,550 days	AT (Car) =	25,550 days	AT (Car) =	25,550 days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.

TABLE 7
CALCULATION OF TOTAL NONCARCINOGENIC AND CARCINOGENIC RISKS - SEAD-007-R-01 (Grenade Range)
REASONABLE MAXIMUM EXPOSURE (RME)
SENECA ARMY DEPOT ACTIVITY

RECEPTOR	EXPOSURE ROUTE	REASONABLE MAXIMUM EXPOSURE (RME)			
		HAZARD INDEX		CANCER RISK	
		Hazard Index	Percent	Cancer Risk	Percent
PARK WORKER	Inhalation of Dust in Ambient Air	1E-01	53%	3E-07	16%
	Ingestion of Soil	1E-01	44%	1E-06	70%
	Dermal Contact to Soil	5E-03	2%	3E-07	14%
	TOTAL RECEPTOR RISK (Nc & Car)	*3E-01*	100%	*2E-06*	100%
CONSTRUCTION WORKER	Inhalation of Dust in Ambient Air	3E-01	32%	2E-08	8%
	Ingestion of Soil	5E-01	67%	3E-07	85%
	Dermal Contact to Soil	1E-02	1%	2E-08	8%
	TOTAL RECEPTOR RISK (Nc & Car)	*8E-01*	100%	*3E-07*	100%
RECREATIONAL CHILD VISITOR	Inhalation of Dust in Ambient Air	6E-02	39%	3E-08	10%
	Ingestion of Soil	9E-02	60%	2E-07	83%
	Dermal Contact to Soil	2E-03	1%	2E-08	7%
	TOTAL RECEPTOR RISK (Nc & Car)	*1E-01*	100%	*3E-07*	100%
RESIDENT (ADULT)	Inhalation of Dust in Ambient Air	7E-01	75%	2E-06	34%
	Ingestion of Soil	2E-01	25%	3E-06	59%
	Dermal Contact to Soil	6E-03	1%	3E-07	7%
	TOTAL RECEPTOR RISK (Nc & Car)	*9E-01*	100%	*5E-06*	100%
RESIDENT (CHILD)	Inhalation of Dust in Ambient Air	1E+00	39%	8E-07	10%
	Ingestion of Soil	2E+00	60%	6E-06	83%
	Dermal Contact to Soil	4E-02	1%	5E-07	7%
	TOTAL RECEPTOR RISK (Nc & Car)	*4E+00*	100%	*8E-06*	100%
RESIDENT (TOTAL)	Inhalation of Dust in Ambient Air			2E-06	19%
	Ingestion of Soil			9E-06	74%
	Dermal Contact to Soil			9E-07	7%
	TOTAL RECEPTOR CANCER RISK			*1E-05*	100%

NA - Not Applicable

Attachment F

SEAD-70 – Building 2110 Filled Area

TABLE 1
SEAD-70 SOIL SAMPLE RESULTS
SENECA ARMY DEPOT ACTIVITY

								SEAD-70 70EXFL10000 SOIL 70EXFL10002 1 1.2 5/22/2008 SA RA	SEAD-70 70EXFL10003 SOIL 70EXFL10003 1 1.5 5/22/2008 SA RA	SEAD-70 70EXFL10004 SOIL 70EXFL10009 3 3.2 8/20/2008 SA RA	SEAD-70 70EXFL10010 SOIL 70EXFL10010 1 1.2 8/20/2008 SA RA	SEAD-70 70EXFL10017 SOIL 70EXFL10017 2 2.2 9/4/2008 SA RA	SEAD-70 70EXFL10018 SOIL 70EXFL10018 5 5.5 9/4/2008 SA RA	SEAD-70 70EXFL10019 SOIL 70EXFL10019 6.2 6.4 9/4/2008 SA RA	SEAD-70 70EXFL10020 SOIL 70EXFL10020 4.5 4.7 9/4/2008 SA RA
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Criteria Value [1]**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed [2]**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value
Volatile Organic Compounds															
1,1,1-Trichloroethane	UG/KG	0	0%	680	0	0	11								
1,1,2,2-Tetrachloroethane	UG/KG	0	0%		0	0	11								
1,1,2-Trichloroethane	UG/KG	0	0%		0	0	11								
1,1-Dichloroethane	UG/KG	0	0%	270	0	0	11								
1,1-Dichloroethene	UG/KG	0	0%	330	0	0	11								
1,2-Dichloroethane	UG/KG	0	0%	20	0	0	11								
1,2-Dichloroethene (total)	UG/KG	0	0%	190	0	0	11								
1,2-Dichloropropane	UG/KG	0	0%		0	0	11								
Acetone	UG/KG	79	9%	50	1	1	11								
Benzene	UG/KG	0	0%	60	0	0	11								
Bromodichloromethane	UG/KG	0	0%		0	0	11								
Bromoform	UG/KG	0	0%		0	0	11								
Carbon disulfide	UG/KG	0	0%		0	0	11								
Carbon tetrachloride	UG/KG	0	0%	760	0	0	11								
Chlorobenzene	UG/KG	0	0%	1100	0	0	11								
Chlorodibromomethane	UG/KG	0	0%		0	0	11								
Chloroethane	UG/KG	0	0%		0	0	11								
Chloroform	UG/KG	0	0%	370	0	0	11								
Cis-1,3-Dichloropropene	UG/KG	0	0%		0	0	11								
Ethyl benzene	UG/KG	0	0%	1000	0	0	11								
Methyl bromide	UG/KG	0	0%		0	0	11								
Methyl butyl ketone	UG/KG	0	0%		0	0	11								
Methyl chloride	UG/KG	0	0%		0	0	8								
Methyl ethyl ketone	UG/KG	36	9%	120	0	1	11								
Methyl isobutyl ketone	UG/KG	0	0%		0	0	11								
Methylene chloride	UG/KG	0	0%	50	0	0	11								
Styrene	UG/KG	0	0%		0	0	11								
Tetrachloroethene	UG/KG	0	0%	1300	0	0	11								
Toluene	UG/KG	3	9%	700	0	1	11								
Total Xylenes	UG/KG	0	0%	260	0	0	11								
Trans-1,3-Dichloropropene	UG/KG	0	0%		0	0	11								
Trichloroethene	UG/KG	0	0%	470	0	0	11								
Vinyl chloride	UG/KG	0	0%	20	0	0	11								
Semivolatile Organic Compounds															
1,2,4-Trichlorobenzene	UG/KG	0	0%		0	0	11								
1,2-Dichlorobenzene	UG/KG	0	0%	1100	0	0	11								
1,3-Dichlorobenzene	UG/KG	0	0%	2400	0	0	11								
1,4-Dichlorobenzene	UG/KG	0	0%	1800	0	0	11								
2,2'-oxybis(1-Chloropropane)	UG/KG	0	0%		0	0	11								
2,4,5-Trichlorophenol	UG/KG	0	0%		0	0	11								
2,4,6-Trichlorophenol	UG/KG	0	0%		0	0	11								
2,4-Dichlorophenol	UG/KG	0	0%		0	0	11								
2,4-Dimethylphenol	UG/KG	0	0%		0	0	11								
2,4-Dinitrophenol	UG/KG	0	0%		0	0	11								
2,4-Dinitrotoluene	UG/KG	0	0%		0	0	11								
2,6-Dinitrotoluene	UG/KG	0	0%		0	0	11								
2-Chloronaphthalene	UG/KG	0	0%		0	0	11								
2-Chlorophenol	UG/KG	0	0%		0	0	11								
2-Methylnaphthalene	UG/KG	0	0%		0	0	11								
2-Methylphenol	UG/KG	0	0%	330	0	0	11								
2-Nitroaniline	UG/KG	0	0%		0	0	11								
2-Nitrophenol	UG/KG	0	0%		0	0	11								
3,3'-Dichlorobenzidine	UG/KG	0	0%		0	0	11								
3-Nitroaniline	UG/KG	0	0%		0	0	11								
4,6-Dinitro-2-methylphenol	UG/KG	0	0%		0	0	11								

TABLE 1
SEAD-70 SOIL SAMPLE RESULTS
SENECA ARMY DEPOT ACTIVITY

								SEAD-70	SEAD-70	SEAD-70	SEAD-70	SEAD-70	SEAD-70	SEAD-70	SEAD-70
								70EXFL10000	70EXFL10003	70EXFL10004	70EXFL10010	70EXFL10017	70EXFL10018	70EXFL10019	70EXFL10020
								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
								70EXFL10002	70EXFL10003	70EXFL10009	70EXFL10010	70EXFL10017	70EXFL10018	70EXFL10019	70EXFL10020
								1	1	3	1	2	5	6.2	4.5
								1.2	1.5	3.2	1.2	2.2	5.5	6.4	4.7
								5/22/2008	5/22/2008	8/20/2008	8/20/2008	9/4/2008	9/4/2008	9/4/2008	9/4/2008
								SA	SA	SA	SA	SA	SA	SA	SA
		Maximum	Frequency of	Criteria	Number of	Number of Times	Number of Samples	RA	RA	RA	RA	RA	RA	RA	RA
Parameter	Units	Value	Detection	Value [1]	Exceedances	Detected	Analyzed [2]	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value
Aroclor-1232	UG/KG	0	0%	100	0	0	11								
Aroclor-1242	UG/KG	0	0%	100	0	0	11								
Aroclor-1248	UG/KG	0	0%	100	0	0	11								
Aroclor-1254	UG/KG	0	0%	100	0	0	11								
Aroclor-1260	UG/KG	0	0%	100	0	0	11								
Beta-BHC	UG/KG	0	0%	36	0	0	11								
Delta-BHC	UG/KG	0	0%	40	0	0	11								
Dieldrin	UG/KG	0	0%	5	0	0	11								
Endosulfan I	UG/KG	0	0%	2400	0	0	11								
Endosulfan II	UG/KG	0	0%	2400	0	0	11								
Endosulfan sulfate	UG/KG	0	0%	2400	0	0	11								
Endrin	UG/KG	0	0%	14	0	0	11								
Endrin aldehyde	UG/KG	0	0%		0	0	11								
Endrin ketone	UG/KG	0	0%		0	0	11								
Gamma-BHC/Lindane	UG/KG	0	0%	100	0	0	11								
Gamma-Chlordane	UG/KG	0	0%		0	0	11								
Heptachlor	UG/KG	0	0%	42	0	0	11								
Heptachlor epoxide	UG/KG	0	0%		0	0	11								
Methoxychlor	UG/KG	0	0%		0	0	11								
Toxaphene	UG/KG	0	0%		0	0	11								
Metals															
Aluminum	MG/KG	16600	100%		0	11	11								
Antimony	MG/KG	0.47	73%		0	8	11								
Arsenic	MG/KG	15.2	100%	13	2	46	46	4.5	11.1	12.1 J	7.7 J	5.1 J	5.8 J	5.1 J	5.1
Barium	MG/KG	170	100%	350	0	11	11								
Beryllium	MG/KG	0.81	100%	7.2	0	11	11								
Cadmium	MG/KG	0.8	100%	2.5	0	11	11								
Calcium	MG/KG	59100	100%		0	11	11								
Chromium	MG/KG	26.2	100%	30	0	11	11								
Cobalt	MG/KG	21	100%		0	11	11								
Copper	MG/KG	35.2	100%	50	0	11	11								
Cyanide	MG/KG	0	0%	27	0	0	11								
Iron	MG/KG	32200	100%		0	11	11								
Lead	MG/KG	22.1	100%	63	0	11	11								
Magnesium	MG/KG	13600	100%		0	11	11								
Manganese	MG/KG	1040	100%	1600	0	11	11								
Mercury	MG/KG	0.1	91%	0.18	0	10	11								
Nickel	MG/KG	52.4	100%	30	8	11	11								
Potassium	MG/KG	1750	100%		0	11	11								
Selenium	MG/KG	1	64%	3.9	0	7	11								
Silver	MG/KG	0	0%	2	0	0	11								
Sodium	MG/KG	165	82%		0	9	11								
Thallium	MG/KG	0	0%		0	0	11								
Vanadium	MG/KG	26.9	100%		0	11	11								
Zinc	MG/KG	116	100%	109	1	11	11								

Notes

(1) Criteria based on NYSDEC Brownfield Unrestricted Use Soil Cleanup Objectives,
http://www.dec.state.ny.us/website/regs/subpart375_6.html

(2) Sample-duplicate pairs were not averaged. Samples were presented as discreet samples in the summary statistics.

(3) A bolded and outlined cell indicates a concentration that exceeded the criteria.

U = compound was not detected

J = the reported value is an estimated concentration

UJ = the compound was not detected, the associated reporting limit is approximate

R = the analytical result was rejected during data validation.

TABLE 1
SEAD-70 SOIL SAMPLE RESULTS
SENECA army DEPOT ACTIVITY

Parameter	Units	Maximum Value	Frequency of Detection	Criteria Value [1]	Number of Exceedances	Number of Times Detected	Number of Samples Analyzed [2]	(Q)	SEAD-70 70EXFL10021 SOIL 70EXFL10022 3.2 3.4 9/4/2008 DU RA Value	(Q)	SEAD-70 70EXFL10021 SOIL 70EXFL10021 3.2 3.4 9/4/2008 SA RA Value	(Q)	SEAD-70 70EXPR10000 SOIL 70EXPR10000 0 0.2 2/6/2008 SA RA Value	(Q)	SEAD-70 70EXPR10003 SOIL 70EXPR10003 0 0.2 2/6/2008 SA RA Value	(Q)	SEAD-70 70EXPR10007 SOIL 70EXPR10007 0.5 0.8 5/22/2008 SA RA Value	(Q)	SEAD-70 70EXPR10008 SOIL 70EXPR10008 0 0.2 5/22/2008 SA RA Value	(Q)	SEAD-70 70EXPR10009 SOIL 70EXPR10009 0.2 0.4 5/22/2008 SA RA Value	(Q)
4-Bromophenyl phenyl ether	UG/KG	0	0%		0	0	11															
4-Chloro-3-methylphenol	UG/KG	0	0%		0	0	11															
4-Chloroaniline	UG/KG	0	0%		0	0	11															
4-Chlorophenyl phenyl ether	UG/KG	0	0%		0	0	11															
4-Methylphenol	UG/KG	0	0%	330	0	0	11															
4-Nitroaniline	UG/KG	0	0%		0	0	11															
4-Nitrophenol	UG/KG	0	0%		0	0	11															
Acenaphthene	UG/KG	0	0%	20000	0	0	11															
Acenaphthylene	UG/KG	0	0%	100000	0	0	11															
Anthracene	UG/KG	0	0%	100000	0	0	11															
Benzo(a)anthracene	UG/KG	0	0%	1000	0	0	11															
Benzo(a)pyrene	UG/KG	0	0%	1000	0	0	11															
Benzo(b)fluoranthene	UG/KG	0	0%	1000	0	0	11															
Benzo(ghi)perylene	UG/KG	0	0%	100000	0	0	11															
Benzo(k)fluoranthene	UG/KG	0	0%	800	0	0	11															
Bis(2-Chloroethoxy)methane	UG/KG	0	0%		0	0	11															
Bis(2-Chloroethyl)ether	UG/KG	0	0%		0	0	11															
Bis(2-Ethylhexyl)phthalate	UG/KG	610	100%		0	11	11															
Butylbenzylphthalate	UG/KG	0	0%		0	0	11															
Carbazole	UG/KG	0	0%		0	0	11															
Chrysene	UG/KG	0	0%	1000	0	0	11															
Di-n-butylphthalate	UG/KG	51	55%		0	6	11															
Di-n-octylphthalate	UG/KG	30	9%		0	1	11															
Dibenz(a,h)anthracene	UG/KG	0	0%	330	0	0	11															
Dibenzofuran	UG/KG	0	0%	7000	0	0	11															
Diethyl phthalate	UG/KG	0	0%		0	0	11															
Dimethylphthalate	UG/KG	0	0%		0	0	11															
Fluoranthene	UG/KG	0	0%	100000	0	0	11															
Fluorene	UG/KG	0	0%	30000	0	0	11															
Hexachlorobenzene	UG/KG	0	0%	330	0	0	11															
Hexachlorobutadiene	UG/KG	0	0%		0	0	11															
Hexachlorocyclopentadiene	UG/KG	0	0%		0	0	11															
Hexachloroethane	UG/KG	0	0%		0	0	11															
Indeno(1,2,3-cd)pyrene	UG/KG	0	0%	500	0	0	11															
Isophorone	UG/KG	0	0%		0	0	11															
N-Nitrosodiphenylamine	UG/KG	0	0%		0	0	11															
N-Nitrosodipropylamine	UG/KG	0	0%		0	0	11															
Naphthalene	UG/KG	0	0%	12000	0	0	11															
Nitrobenzene	UG/KG	0	0%		0	0	11															
Pentachlorophenol	UG/KG	0	0%	800	0	0	11															
Phenanthrene	UG/KG	0	0%	100000	0	0	11															
Phenol	UG/KG	0	0%	330	0	0	11															
Pyrene	UG/KG	0	0%	100000	0	0	11															
Pesticides and PCBs																						
4,4'-DDD	UG/KG	0	0%	3.3	0	0	11															
4,4'-DDE	UG/KG	0	0%	3.3	0	0	11															
4,4'-DDT	UG/KG	0	0%	3.3	0	0	11															
Aldrin	UG/KG	0	0%	5	0	0	11															
Alpha-BHC	UG/KG	0	0%	20	0	0	11															
Alpha-Chlordane	UG/KG	0	0%	94	0	0	11															
Aroclor-1016	UG/KG	0	0%	100	0	0	11															
Aroclor-1221	UG/KG	0	0%	100	0	0	11															

TABLE 1
SEAD-70 SOIL SAMPLE RESULTS
SENECA ARMY DEPOT ACTIVITY

								SEAD-70	SEAD-70	SEAD-70	SEAD-70	SEAD-70	SEAD-70	SEAD-70	SEAD-70
								70EXPR10011	70EXPR10011	70EXPR10012	70EXPR10013	70EXPR10014	70EXPR10015	70EXPR10016	70EXPR10018
								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
								70EXFL10008	70EXFL10007	70EXPR10012	70EXPR10013	70EXPR10014	70EXPR10015	70EXPR10016	70EXPR10018
								1.5	1.5	0.5	0	0	1.5	1.5	1.5
								1.7	1.7	0.8	0.2	0.2	1.7	1.7	1.7
								6/26/2008	6/26/2008	5/22/2008	6/26/2008	6/26/2008	8/20/2008	8/20/2008	8/20/2008
								DU	SA	SA	SA	SA	SA	SA	SA
		Maximum	Frequency of	Criteria	Number of	Number of Times	Number of Samples	RA	RA	RA	RA	RA	RA	RA	RA
Parameter	Units	Value	Detection	Value [1]	Exceedances	Detected	Analyzed [2]	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value
Volatile Organic Compounds															
1,1,1-Trichloroethane	UG/KG	0	0%	680	0	0	11								
1,1,2,2-Tetrachloroethane	UG/KG	0	0%		0	0	11								
1,1,2-Trichloroethane	UG/KG	0	0%		0	0	11								
1,1-Dichloroethane	UG/KG	0	0%	270	0	0	11								
1,1-Dichloroethene	UG/KG	0	0%	330	0	0	11								
1,2-Dichloroethane	UG/KG	0	0%	20	0	0	11								
1,2-Dichloroethene (total)	UG/KG	0	0%	190	0	0	11								
1,2-Dichloropropane	UG/KG	0	0%		0	0	11								
Acetone	UG/KG	79	9%	50	1	1	11								
Benzene	UG/KG	0	0%	60	0	0	11								
Bromodichloromethane	UG/KG	0	0%		0	0	11								
Bromoform	UG/KG	0	0%		0	0	11								
Carbon disulfide	UG/KG	0	0%		0	0	11								
Carbon tetrachloride	UG/KG	0	0%	760	0	0	11								
Chlorobenzene	UG/KG	0	0%	1100	0	0	11								
Chlorodibromomethane	UG/KG	0	0%		0	0	11								
Chloroethane	UG/KG	0	0%		0	0	11								
Chloroform	UG/KG	0	0%	370	0	0	11								
Cis-1,3-Dichloropropene	UG/KG	0	0%		0	0	11								
Ethyl benzene	UG/KG	0	0%	1000	0	0	11								
Methyl bromide	UG/KG	0	0%		0	0	11								
Methyl butyl ketone	UG/KG	0	0%		0	0	11								
Methyl chloride	UG/KG	0	0%		0	0	8								
Methyl ethyl ketone	UG/KG	36	9%	120	0	1	11								
Methyl isobutyl ketone	UG/KG	0	0%		0	0	11								
Methylene chloride	UG/KG	0	0%	50	0	0	11								
Styrene	UG/KG	0	0%		0	0	11								
Tetrachloroethene	UG/KG	0	0%	1300	0	0	11								
Toluene	UG/KG	3	9%	700	0	1	11								
Total Xylenes	UG/KG	0	0%	260	0	0	11								
Trans-1,3-Dichloropropene	UG/KG	0	0%		0	0	11								
Trichloroethene	UG/KG	0	0%	470	0	0	11								
Vinyl chloride	UG/KG	0	0%	20	0	0	11								
Semivolatile Organic Compounds															
1,2,4-Trichlorobenzene	UG/KG	0	0%		0	0	11								
1,2-Dichlorobenzene	UG/KG	0	0%	1100	0	0	11								
1,3-Dichlorobenzene	UG/KG	0	0%	2400	0	0	11								
1,4-Dichlorobenzene	UG/KG	0	0%	1800	0	0	11								
2,2'-oxybis(1-Chloropropane)	UG/KG	0	0%		0	0	11								
2,4,5-Trichlorophenol	UG/KG	0	0%		0	0	11								
2,4,6-Trichlorophenol	UG/KG	0	0%		0	0	11								
2,4-Dichlorophenol	UG/KG	0	0%		0	0	11								
2,4-Dimethylphenol	UG/KG	0	0%		0	0	11								
2,4-Dinitrophenol	UG/KG	0	0%		0	0	11								
2,4-Dinitrotoluene	UG/KG	0	0%		0	0	11								
2,6-Dinitrotoluene	UG/KG	0	0%		0	0	11								
2-Chloronaphthalene	UG/KG	0	0%		0	0	11								
2-Chlorophenol	UG/KG	0	0%		0	0	11								
2-Methylnaphthalene	UG/KG	0	0%		0	0	11								
2-Methylphenol	UG/KG	0	0%	330	0	0	11								
2-Nitroaniline	UG/KG	0	0%		0	0	11								
2-Nitrophenol	UG/KG	0	0%		0	0	11								
3,3'-Dichlorobenzidine	UG/KG	0	0%		0	0	11								
3-Nitroaniline	UG/KG	0	0%		0	0	11								
4,6-Dinitro-2-methylphenol	UG/KG	0	0%		0	0	11								

TABLE 1
SEAD-70 SOIL SAMPLE RESULTS
SENECA ARMY DEPOT ACTIVITY

Parameter	Units	Maximum Value	Frequency of Detection	Criteria Value [1]	Number of Exceedances	Number of Times Detected	Number of Samples Analyzed [2]	SEAD-70 70EXPR10011 SOIL 70EXFL10008 1.5 1.7 6/26/2008 DU RA Value (Q)	SEAD-70 70EXPR10011 SOIL 70EXFL10007 1.5 1.7 6/26/2008 SA RA Value (Q)	SEAD-70 70EXPR10012 SOIL 70EXPR10012 0.5 0.8 5/22/2008 SA RA Value (Q)	SEAD-70 70EXPR10013 SOIL 70EXPR10013 0 0.2 6/26/2008 SA RA Value (Q)	SEAD-70 70EXPR10014 SOIL 70EXPR10014 0 0.2 6/26/2008 SA RA Value (Q)	SEAD-70 70EXPR10015 SOIL 70EXPR10015 1.5 1.7 8/20/2008 SA RA Value (Q)	SEAD-70 70EXPR10016 SOIL 70EXPR10016 1.5 1.7 8/20/2008 SA RA Value (Q)	SEAD-70 70EXPR10018 SOIL 70EXPR10018 1.5 1.7 8/20/2008 SA RA Value
Aroclor-1232	UG/KG	0	0%	100	0	0	11								
Aroclor-1242	UG/KG	0	0%	100	0	0	11								
Aroclor-1248	UG/KG	0	0%	100	0	0	11								
Aroclor-1254	UG/KG	0	0%	100	0	0	11								
Aroclor-1260	UG/KG	0	0%	100	0	0	11								
Beta-BHC	UG/KG	0	0%	36	0	0	11								
Delta-BHC	UG/KG	0	0%	40	0	0	11								
Dieldrin	UG/KG	0	0%	5	0	0	11								
Endosulfan I	UG/KG	0	0%	2400	0	0	11								
Endosulfan II	UG/KG	0	0%	2400	0	0	11								
Endosulfan sulfate	UG/KG	0	0%	2400	0	0	11								
Endrin	UG/KG	0	0%	14	0	0	11								
Endrin aldehyde	UG/KG	0	0%		0	0	11								
Endrin ketone	UG/KG	0	0%		0	0	11								
Gamma-BHC (Lindane	UG/KG	0	0%	100	0	0	11								
Gamma-Chlordane	UG/KG	0	0%		0	0	11								
Heptachlor	UG/KG	0	0%	42	0	0	11								
Heptachlor epoxide	UG/KG	0	0%		0	0	11								
Methoxychlor	UG/KG	0	0%		0	0	11								
Toxaphene	UG/KG	0	0%		0	0	11								
Metals															
Aluminum	MG/KG	16600	100%		0	11	11								
Antimony	MG/KG	0.47	73%		0	8	11								
Arsenic	MG/KG	15.2	100%	13	2	46	46	4.2	4.9	9.4	4	**14.9**	5.6 J	4.7 J	12.8
Barium	MG/KG	170	100%	350	0	11	11								
Beryllium	MG/KG	0.81	100%	7.2	0	11	11								
Cadmium	MG/KG	0.8	100%	2.5	0	11	11								
Calcium	MG/KG	59100	100%		0	11	11								
Chromium	MG/KG	26.2	100%	30	0	11	11								
Cobalt	MG/KG	21	100%		0	11	11								
Copper	MG/KG	35.2	100%	50	0	11	11								
Cyanide	MG/KG	0	0%	27	0	0	11								
Iron	MG/KG	32200	100%		0	11	11								
Lead	MG/KG	22.1	100%	63	0	11	11								
Magnesium	MG/KG	13600	100%		0	11	11								
Manganese	MG/KG	1040	100%	1600	0	11	11								
Mercury	MG/KG	0.1	91%	0.18	0	10	11								
Nickel	MG/KG	52.4	100%	30	8	11	11								
Potassium	MG/KG	1750	100%		0	11	11								
Selenium	MG/KG	1	64%	3.9	0	7	11								
Silver	MG/KG	0	0%	2	0	0	11								
Sodium	MG/KG	165	82%		0	9	11								
Thallium	MG/KG	0	0%		0	0	11								
Vanadium	MG/KG	26.9	100%		0	11	11								
Zinc	MG/KG	116	100%	109	1	11	11								

Notes

(1) Criteria based on NYSDEC Brownfield Unrestricted Use Soil Cleanup Objectives,
http://www.dec.state.ny.us/website/regs/subpart375_6.html

(2) Sample-duplicate pairs were not averaged. Samples were presented as discreet samples in the summary statistics.

(3) A bolded and outlined cell indicates a concentration that exceeded the criteria.

U = compound was not detected

J = the reported value is an estimated concentration

UJ = the compound was not detected, the associated reporting limit is approximate

R = the analytical result was rejected during data validation.

TABLE 1
SEAD-70 SOIL SAMPLE RESULTS
SENECA ARMY DEPOT ACTIVITY

Parameter	Units	Maximum Value	Frequency of Detection	Criteria Value [1]	Number of Exceedances	Number of Times Detected	Number of Samples Analyzed [2]	(Q)	SEAD-70 70EXPR10044 SOIL 70EXPR10044 0.2 0.4 6/4/2009 SA RA Value (Q)	SEAD-70 70EXPR10045 SOIL 70EXPR10045 1.4 1.6 6/4/2009 SA RA Value (Q)	SEAD-70 70EXPR10046 SOIL 70EXPR10046 1.2 1.4 6/4/2009 SA RA Value (Q)	SEAD-70 70EXPR10047 SOIL 70EXPR10047 0.2 0.4 6/4/2009 SA RA Value (Q)	SEAD-70 70EXPR10048 SOIL 70EXPR10049 1.8 2 6/4/2009 DU RA Value (Q)	SEAD-70 70EXPR10048 SOIL 70EXPR10048 1.8 2 6/4/2009 SA RA Value (Q)	SEAD-70 Location-1 SOIL 70EXPR10025 0.2 0.4 12 15 2008 SA RA Value (Q)
4-Bromophenyl phenyl ether	UG/KG	0	0%		0	0	11								
4-Chloro-3-methylphenol	UG/KG	0	0%		0	0	11								
4-Chloroaniline	UG/KG	0	0%		0	0	11								
4-Chlorophenyl phenyl ether	UG/KG	0	0%		0	0	11								
4-Methylphenol	UG/KG	0	0%	330	0	0	11								
4-Nitroaniline	UG/KG	0	0%		0	0	11								
4-Nitrophenol	UG/KG	0	0%		0	0	11								
Acenaphthene	UG/KG	0	0%	20000	0	0	11								
Acenaphthylene	UG/KG	0	0%	100000	0	0	11								
Anthracene	UG/KG	0	0%	100000	0	0	11								
Benzo(a)anthracene	UG/KG	0	0%	1000	0	0	11								
Benzo(a)pyrene	UG/KG	0	0%	1000	0	0	11								
Benzo(b)fluoranthene	UG/KG	0	0%	1000	0	0	11								
Benzo(ghi)perylene	UG/KG	0	0%	100000	0	0	11								
Benzo(k)fluoranthene	UG/KG	0	0%	800	0	0	11								
Bis(2-Chloroethoxy)methane	UG/KG	0	0%		0	0	11								
Bis(2-Chloroethyl)ether	UG/KG	0	0%		0	0	11								
Bis(2-Ethylhexyl)phthalate	UG/KG	610	100%		0	11	11								
Butylbenzylphthalate	UG/KG	0	0%		0	0	11								
Carbazole	UG/KG	0	0%		0	0	11								
Chrysene	UG/KG	0	0%	1000	0	0	11								
Di-n-butylphthalate	UG/KG	51	55%		0	6	11								
Di-n-octylphthalate	UG/KG	30	9%		0	1	11								
Dibenz(a,h)anthracene	UG/KG	0	0%	330	0	0	11								
Dibenzofuran	UG/KG	0	0%	7000	0	0	11								
Diethyl phthalate	UG/KG	0	0%		0	0	11								
Dimethylphthalate	UG/KG	0	0%		0	0	11								
Fluoranthene	UG/KG	0	0%	100000	0	0	11								
Fluorene	UG/KG	0	0%	30000	0	0	11								
Hexachlorobenzene	UG/KG	0	0%	330	0	0	11								
Hexachlorobutadiene	UG/KG	0	0%		0	0	11								
Hexachlorocyclopentadiene	UG/KG	0	0%		0	0	11								
Hexachloroethane	UG/KG	0	0%		0	0	11								
Indeno(1,2,3-cd)pyrene	UG/KG	0	0%	500	0	0	11								
Isophorone	UG/KG	0	0%		0	0	11								
N-Nitrosodiphenylamine	UG/KG	0	0%		0	0	11								
N-Nitrosodipropylamine	UG/KG	0	0%		0	0	11								
Naphthalene	UG/KG	0	0%	12000	0	0	11								
Nitrobenzene	UG/KG	0	0%		0	0	11								
Pentachlorophenol	UG/KG	0	0%	800	0	0	11								
Phenanthrene	UG/KG	0	0%	100000	0	0	11								
Phenol	UG/KG	0	0%	330	0	0	11								
Pyrene	UG/KG	0	0%	100000	0	0	11								
Pesticides and PCBs															
4,4'-DDD	UG/KG	0	0%	3.3	0	0	11								
4,4'-DDE	UG/KG	0	0%	3.3	0	0	11								
4,4'-DDT	UG/KG	0	0%	3.3	0	0	11								
Aldrin	UG/KG	0	0%	5	0	0	11								
Alpha-BHC	UG/KG	0	0%	20	0	0	11								
Alpha-Chlordane	UG/KG	0	0%	94	0	0	11								
Aroclor-1016	UG/KG	0	0%	100	0	0	11								
Aroclor-1221	UG/KG	0	0%	100	0	0	11								

TABLE 1
SEAD-70 SOIL SAMPLE RESULTS
SENECA ARMY DEPOT ACTIVITY

Parameter	Units	Maximum Value	Frequency of Detection	Criteria Value [1]	Number of Exceedances	Number of Times Detected	Number of Samples Analyzed [2]	SEAD-70 Location-1 SOIL 70EXPR10026 0.5 1 12/15/2008 SA RA Value (Q)	SEAD-70 Location-1 SOIL 70EXFL10027 1 2 12/15/2008 DU RA Value (Q)	SEAD-70 Location-1 SOIL 70EXPR10027 1 2 12/15/2008 SA RA Value (Q)	SEAD-70 Location-2 SOIL 70EXPR10028 0.2 0.4 12/15/2008 SA RA Value (Q)	SEAD-70 Location-3 SOIL 70EXPR10029 0.2 0.4 12/15/2008 SA RA Value (Q)	SEAD-70 MW70-1 SOIL MW70-1-00 0 0.2 5/11/1994 SA ESI Value (Q)	SEAD-70 MW70-1 SOIL MW70-1-02 2 4 5 11 1994 SA ESI Value (Q)	SEAD-70 MW70-1 SOIL MW70-1-03 4 6 5 11/1994 SA ESI Value
Volatile Organic Compounds															
1,1,1-Trichloroethane	UG/KG	0	0%	680	0	0	11						14 U	12 U	11
1,1,2,2-Tetrachloroethane	UG/KG	0	0%		0	0	11						14 U	12 U	11
1,1,2-Trichloroethane	UG/KG	0	0%		0	0	11						14 U	12 U	11
1,1-Dichloroethane	UG/KG	0	0%	270	0	0	11						14 U	12 U	11
1,1-Dichloroethene	UG/KG	0	0%	330	0	0	11						14 U	12 U	11
1,2-Dichloroethane	UG/KG	0	0%	20	0	0	11						14 U	12 U	11
1,2-Dichloroethene (total)	UG/KG	0	0%	190	0	0	11						14 U	12 U	11
1,2-Dichloropropane	UG/KG	0	0%		0	0	11						14 U	12 U	11
Acetone	UG/KG	79	9%	50	1	1	11						14 U	14 U	11
Benzene	UG/KG	0	0%	60	0	0	11						14 U	12 U	11
Bromodichloromethane	UG/KG	0	0%		0	0	11						14 U	12 U	11
Bromoform	UG/KG	0	0%		0	0	11						14 U	12 U	11
Carbon disulfide	UG/KG	0	0%		0	0	11						14 U	12 U	11
Carbon tetrachloride	UG/KG	0	0%	760	0	0	11						14 U	12 U	11
Chlorobenzene	UG/KG	0	0%	1100	0	0	11						14 U	12 U	11
Chlorodibromomethane	UG/KG	0	0%		0	0	11						14 U	12 U	11
Chloroethane	UG/KG	0	0%		0	0	11						14 U	12 U	11
Chloroform	UG/KG	0	0%	370	0	0	11						14 U	12 U	11
Cis-1,3-Dichloropropene	UG/KG	0	0%		0	0	11						14 U	12 U	11
Ethyl benzene	UG/KG	0	0%	1000	0	0	11						14 U	12 U	11
Methyl bromide	UG/KG	0	0%		0	0	11						14 U	12 U	11
Methyl butyl ketone	UG/KG	0	0%		0	0	11						14 U	12 U	11
Methyl chloride	UG/KG	0	0%		0	0	8								
Methyl ethyl ketone	UG/KG	36	9%	120	0	1	11						14 U	12 U	11
Methyl isobutyl ketone	UG/KG	0	0%		0	0	11						14 U	12 U	11
Methylene chloride	UG/KG	0	0%	50	0	0	11						14 U	12 U	11
Styrene	UG/KG	0	0%		0	0	11						14 U	12 U	11
Tetrachloroethene	UG/KG	0	0%	1300	0	0	11						14 U	12 U	11
Toluene	UG/KG	3	9%	700	0	1	11						14 U	12 U	11
Total Xylenes	UG/KG	0	0%	260	0	0	11						14 U	12 U	11
Trans-1,3-Dichloropropene	UG/KG	0	0%		0	0	11						14 U	12 U	11
Trichloroethene	UG/KG	0	0%	470	0	0	11						14 U	12 U	11
Vinyl chloride	UG/KG	0	0%	20	0	0	11						14 U	12 U	11
Semivolatile Organic Compounds															
1,2,4-Trichlorobenzene	UG/KG	0	0%		0	0	11						490 U	400 U	370
1,2-Dichlorobenzene	UG/KG	0	0%	1100	0	0	11						490 U	400 U	370
1,3-Dichlorobenzene	UG/KG	0	0%	2400	0	0	11						490 U	400 U	370
1,4-Dichlorobenzene	UG/KG	0	0%	1800	0	0	11						490 U	400 U	370
2,2'-oxybis(1-Chloropropane)	UG/KG	0	0%		0	0	11						490 U	400 U	370
2,4,5-Trichlorophenol	UG/KG	0	0%		0	0	11						1200 U	960 U	890
2,4,6-Trichlorophenol	UG/KG	0	0%		0	0	11						490 U	400 U	370
2,4-Dichlorophenol	UG/KG	0	0%		0	0	11						490 U	400 U	370
2,4-Dimethylphenol	UG/KG	0	0%		0	0	11						490 U	400 U	370
2,4-Dinitrophenol	UG/KG	0	0%		0	0	11						1200 U	960 U	890
2,4-Dinitrotoluene	UG/KG	0	0%		0	0	11						490 U	400 U	370
2,6-Dinitrotoluene	UG/KG	0	0%		0	0	11						490 U	400 U	370
2-Chloronaphthalene	UG/KG	0	0%		0	0	11						490 U	400 U	370
2-Chlorophenol	UG/KG	0	0%		0	0	11						490 U	400 U	370
2-Methylnaphthalene	UG/KG	0	0%		0	0	11						490 U	400 U	370
2-Methylphenol	UG/KG	0	0%	330	0	0	11						490 U	400 U	370
2-Nitroaniline	UG/KG	0	0%		0	0	11						1200 U	960 U	890
2-Nitrophenol	UG/KG	0	0%		0	0	11						490 U	400 U	370
3,3'-Dichlorobenzidine	UG/KG	0	0%		0	0	11						490 U	400 U	370
3-Nitroaniline	UG/KG	0	0%		0	0	11						1200 U	960 U	890
4,6-Dinitro-2-methylphenol	UG/KG	0	0%		0	0	11						1200 U	960 U	890

TABLE 1
SEAD-70 SOIL SAMPLE RESULTS
SENECA ARMY DEPOT ACTIVITY

								SEAD-70 Location-1 SOIL 70EXPR10026 0.5 1 12/15/2008 SA RA	SEAD-70 Location-1 SOIL 70EXFL10027 1 2 12/15/2008 DU RA	SEAD-70 Location-1 SOIL 70EXPR10027 1 2 12/15/2008 SA RA	SEAD-70 Location-2 SOIL 70EXPR10028 0.2 0.4 12/15/2008 SA RA	SEAD-70 Location-3 SOIL 70EXPR10029 0.2 0.4 12/15/2008 SA RA	SEAD-70 MW70-1 SOIL MW70-1-00 0 0.2 5-11-1994 SA ESI	SEAD-70 MW70-1 SOIL MW70-1-02 2 4 5 11 1994 SA ESI	SEAD-70 MW70-1 SOIL MW70-1-03 4 6 5-11-1994 SA ESI
Parameter	Units	Maximum Value	Frequency of Detection	Criteria Value [1]	Number of Exceedances	Number of Times Detected	Number of Samples Analyzed [2]	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value
Aroclor-1232	UG/KG	0	0%	100	0	0	11						49 U	40 U	37
Aroclor-1242	UG/KG	0	0%	100	0	0	11						49 U	40 U	37
Aroclor-1248	UG/KG	0	0%	100	0	0	11						49 U	40 U	37
Aroclor-1254	UG/KG	0	0%	100	0	0	11						49 U	40 U	37
Aroclor-1260	UG/KG	0	0%	100	0	0	11						49 U	40 U	37
Beta-BHC	UG/KG	0	0%	36	0	0	11						2.5 U	2 U	1.9
Delta-BHC	UG/KG	0	0%	40	0	0	11						2.5 U	2 U	1.9
Dieldrin	UG/KG	0	0%	5	0	0	11						4.9 U	4 U	3.7
Endosulfan I	UG/KG	0	0%	2400	0	0	11						2.5 U	2 U	1.9
Endosulfan II	UG/KG	0	0%	2400	0	0	11						4.9 U	4 U	3.7
Endosulfan sulfate	UG/KG	0	0%	2400	0	0	11						4.9 U	4 U	3.7
Endrin	UG/KG	0	0%	14	0	0	11						4.9 U	4 U	3.7
Endrin aldehyde	UG/KG	0	0%		0	0	11						4.9 U	4 U	3.7
Endrin ketone	UG/KG	0	0%		0	0	11						4.9 U	4 U	3.7
Gamma-BHC/Lindane	UG/KG	0	0%	100	0	0	11						2.5 U	2 U	1.9
Gamma-Chlordane	UG/KG	0	0%		0	0	11						2.5 U	2 U	1.9
Heptachlor	UG/KG	0	0%	42	0	0	11						2.5 U	2 U	1.9
Heptachlor epoxide	UG/KG	0	0%		0	0	11						2.5 U	2 U	1.9
Methoxychlor	UG/KG	0	0%		0	0	11						25 U	20 U	19
Toxaphene	UG/KG	0	0%		0	0	11						250 U	200 U	190
Metals															
Aluminum	MG/KG	16600	100%		0	11	11						12200	9480	11000
Antimony	MG/KG	0.47	73%		0	8	11						0.23 UJ	0.21 UJ	0.19
Arsenic	MG/KG	15.2	100%	13	2	46	46	11.7	10.4 J	6.1 J	9.3	6.4	5.4	4.1	5.7
Barium	MG/KG	170	100%	350	0	11	11						67.5	56.6	79.9
Beryllium	MG/KG	0.81	100%	7.2	0	11	11						0.44 J	0.41 J	0.54
Cadmium	MG/KG	0.8	100%	2.5	0	11	11						0.57 J	0.43 J	0.8
Calcium	MG/KG	59100	100%		0	11	11						3600	51600	48600
Chromium	MG/KG	26.2	100%	30	0	11	11						13.7	14.7	17.8
Cobalt	MG/KG	21	100%		0	11	11						5.5 J	7.1 J	21
Copper	MG/KG	35.2	100%	50	0	11	11						12.4	19.7	33.5
Cyanide	MG/KG	0	0%	27	0	0	11						0.64 U	0.59 U	0.48
Iron	MG/KG	32200	100%		0	11	11						17700	16000	26400
Lead	MG/KG	22.1	100%	63	0	11	11						20.7	9.1	13.6
Magnesium	MG/KG	13600	100%		0	11	11						2830	13600	7980
Manganese	MG/KG	1040	100%	1600	0	11	11						233	470	1040
Mercury	MG/KG	0.1	91%	0.18	0	10	11						0.1	0.03 J	0.02
Nickel	MG/KG	52.4	100%	30	8	11	11						12.3	17.6	**52.4**
Potassium	MG/KG	1750	100%		0	11	11						982 J	1590	1350
Selenium	MG/KG	1	64%	3.9	0	7	11						1 J	0.64 J	0.32
Silver	MG/KG	0	0%	2	0	0	11						0.16 UJ	0.14 UJ	0.13
Sodium	MG/KG	165	82%		0	9	11						36.4 U	126 J	165
Thallium	MG/KG	0	0%		0	0	11						0.37 U	0.33 U	0.31
Vanadium	MG/KG	26.9	100%		0	11	11						23.3	17.2	17.6
Zinc	MG/KG	116	100%	109	1	11	11						55.4	42.4	**116**

Notes

(1) Criteria based on NYSDEC Brownfield Unrestricted Use Soil Cleanup Objectives,
http://www.dec.state.ny.us/website/regs/subpart375_6.html

(2) Sample-duplicate pairs were not averaged. Samples were presented as discreet samples in the summary statistics.

(3) A bolded and outlined cell indicates a concentration that exceeded the criteria.

U = compound was not detected

J = the reported value is an estimated concentration

UJ = the compound was not detected, the associated reporting limit is approximate

R = the analytical result was rejected during data validation.

TABLE 1
SEAD-70 SOIL SAMPLE RESULTS
SENECA ARMY DEPOT ACTIVITY

									SEAD-70	SEAD-70	SEAD-70	SEAD-70	SEAD-70	SEAD-70	SEAD-70	SEAD-70	SEAD-70	SEAD-70
									SB70-1	SB70-1	SB70-1	SB70-2	SB70-2	SB70-3	SB70-3	SB70-3	SB70-3	SB70-3
									SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
									SB70-1-01	SB70-1-02	SB70-1-03	SB70-2-03	SB70-2-05	SB70-3-01	SB70-3-03	SB70-3-03	SB70-3-03	SB70-3-03
									0	2	4	4	8	0	4	4	4	4
									0.2	4	6	6	10	0.2	6	6	6	6
									2/22/1994	2/22/1994	2/22/1994	2/21/1994	2/21/1994	2/21/1994	2/21/1994	2/21/1994	2/21/1994	2/21/1994
									SA	SA	SA	SA	SA	SA	SA	SA	SA	SA
		Maximum	Frequency of	Criteria	Number of	Number of Times	Number of Samples		ESI	ESI	ESI	ESI	ESI	ESI	ESI	ESI	ESI	ESI
Parameter	Units	Value	Detection	Value [1]	Exceedances	Detected	Analyzed [2]	(Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
4-Bromophenyl phenyl ether	UG/KG	0	0%		0	0	11	U	390 U	370 U	400 U	360 U	360 U	430 U	370 U	370 U	370 U	370 U
4-Chloro-3-methylphenol	UG/KG	0	0%		0	0	11	U	390 U	370 U	400 U	360 U	360 U	430 U	370 U	370 U	370 U	370 U
4-Chloroaniline	UG/KG	0	0%		0	0	11	U	390 U	370 U	400 U	360 U	360 U	430 U	370 U	370 U	370 U	370 U
4-Chlorophenyl phenyl ether	UG/KG	0	0%		0	0	11	U	390 U	370 U	400 U	360 U	360 U	430 U	370 U	370 U	370 U	370 U
4-Methylphenol	UG/KG	0	0%	330	0	0	11	U	390 U	370 U	400 U	360 U	360 U	430 U	370 U	370 U	370 U	370 U
4-Nitroaniline	UG/KG	0	0%		0	0	11	U	940 U	910 U	960 U	870 U	880 U	1100 U	890 U	890 U	890 U	890 U
4-Nitrophenol	UG/KG	0	0%		0	0	11	U	940 U	910 U	960 U	870 U	880 U	1100 U	890 U	890 U	890 U	890 U
Acenaphthene	UG/KG	0	0%	20000	0	0	11	U	390 U	370 U	400 U	360 U	360 U	430 U	370 U	370 U	370 U	370 U
Acenaphthylene	UG/KG	0	0%	100000	0	0	11	U	390 U	370 U	400 U	360 U	360 U	430 U	370 U	370 U	370 U	370 U
Anthracene	UG/KG	0	0%	100000	0	0	11	U	390 U	370 U	400 U	360 U	360 U	430 U	370 U	370 U	370 U	370 U
Benzo(a)anthracene	UG/KG	0	0%	1000	0	0	11	U	390 U	370 U	400 U	360 U	360 U	430 U	370 U	370 U	370 U	370 U
Benzo(a)pyrene	UG/KG	0	0%	1000	0	0	11	U	390 U	370 U	400 U	360 U	360 U	430 U	370 U	370 U	370 U	370 U
Benzo(b)fluoranthene	UG/KG	0	0%	1000	0	0	11	U	390 U	370 U	400 U	360 U	360 U	430 U	370 U	370 U	370 U	370 U
Benzo(ghi)perylene	UG/KG	0	0%	100000	0	0	11	U	390 U	370 U	400 U	360 U	360 U	430 U	370 U	370 U	370 U	370 U
Benzo(k)fluoranthene	UG/KG	0	0%	800	0	0	11	U	390 U	370 U	400 U	360 U	360 U	430 U	370 U	370 U	370 U	370 U
Bis(2-Chloroethoxy)methane	UG/KG	0	0%		0	0	11	U	390 U	370 U	400 U	360 U	360 U	430 U	370 U	370 U	370 U	370 U
Bis(2-Chloroethyl)ether	UG/KG	0	0%		0	0	11	U	390 U	370 U	400 U	360 U	360 U	430 U	370 U	370 U	370 U	370 U
Bis(2-Ethylhexyl)phthalate	UG/KG	610	100%		0	11	11		21 J	27 J	73 J	43 J	66 J	48 J	89 J	89 J	89 J	89 J
Butylbenzylphthalate	UG/KG	0	0%		0	0	11	U	390 U	370 U	400 U	360 U	360 U	430 U	370 U	370 U	370 U	370 U
Carbazole	UG/KG	0	0%		0	0	11	U	390 U	370 U	400 U	360 U	360 U	430 U	370 U	370 U	370 U	370 U
Chrysene	UG/KG	0	0%	1000	0	0	11	U	390 U	370 U	400 U	360 U	360 U	430 U	370 U	370 U	370 U	370 U
Di-n-butylphthalate	UG/KG	51	55%		0	6	11	U	35 J	28 J	35 J	360 U	360 U	45 J	51 J	51 J	51 J	51 J
Di-n-octylphthalate	UG/KG	30	9%		0	1	11	U	390 U	30 J	400 U	360 U	360 U	430 U	370 U	370 U	370 U	370 U
Dibenz(a,h)anthracene	UG/KG	0	0%	330	0	0	11	U	390 U	370 U	400 U	360 U	360 U	430 U	370 U	370 U	370 U	370 U
Dibenzofuran	UG/KG	0	0%	7000	0	0	11	U	390 U	370 U	400 U	360 U	360 U	430 U	370 U	370 U	370 U	370 U
Diethyl phthalate	UG/KG	0	0%		0	0	11	U	390 U	370 U	400 U	360 U	360 U	430 U	370 U	370 U	370 U	370 U
Dimethylphthalate	UG/KG	0	0%		0	0	11	U	390 U	370 U	400 U	360 U	360 U	430 U	370 U	370 U	370 U	370 U
Fluoranthene	UG/KG	0	0%	100000	0	0	11	U	390 U	370 U	400 U	360 U	360 U	430 U	370 U	370 U	370 U	370 U
Fluorene	UG/KG	0	0%	30000	0	0	11	U	390 U	370 U	400 U	360 U	360 U	430 U	370 U	370 U	370 U	370 U
Hexachlorobenzene	UG/KG	0	0%	330	0	0	11	U	390 U	370 U	400 U	360 U	360 U	430 U	370 U	370 U	370 U	370 U
Hexachlorobutadiene	UG/KG	0	0%		0	0	11	U	390 U	370 U	400 U	360 U	360 U	430 U	370 U	370 U	370 U	370 U
Hexachlorocyclopentadiene	UG/KG	0	0%		0	0	11	U	390 U	370 U	400 U	360 U	360 U	430 U	370 U	370 U	370 U	370 U
Hexachloroethane	UG/KG	0	0%		0	0	11	U	390 U	370 U	400 U	360 U	360 U	430 U	370 U	370 U	370 U	370 U
Indeno(1,2,3-cd)pyrene	UG/KG	0	0%	500	0	0	11	U	390 U	370 U	400 U	360 U	360 U	430 U	370 U	370 U	370 U	370 U
Isophorone	UG/KG	0	0%		0	0	11	U	390 U	370 U	400 U	360 U	360 U	430 U	370 U	370 U	370 U	370 U
N-Nitrosodiphenylamine	UG/KG	0	0%		0	0	11	U	390 U	370 U	400 U	360 U	360 U	430 U	370 U	370 U	370 U	370 U
N-Nitrosodipropylamine	UG/KG	0	0%		0	0	11	U	390 U	370 U	400 U	360 U	360 U	430 U	370 U	370 U	370 U	370 U
Naphthalene	UG/KG	0	0%	12000	0	0	11	U	390 U	370 U	400 U	360 U	360 U	430 U	370 U	370 U	370 U	370 U
Nitrobenzene	UG/KG	0	0%		0	0	11	U	390 U	370 U	400 U	360 U	360 U	430 U	370 U	370 U	370 U	370 U
Pentachlorophenol	UG/KG	0	0%	800	0	0	11	U	940 U	910 U	960 U	870 U	880 U	1100 U	890 U	890 U	890 U	890 U
Phenanthrene	UG/KG	0	0%	100000	0	0	11	U	390 U	370 U	400 U	360 U	360 U	430 U	370 U	370 U	370 U	370 U
Phenol	UG/KG	0	0%	330	0	0	11	U	390 U	370 U	400 U	360 U	360 U	430 U	370 U	370 U	370 U	370 U
Pyrene	UG/KG	0	0%	100000	0	0	11	U	390 U	370 U	400 U	360 U	360 U	430 U	370 U	370 U	370 U	370 U
Pesticides and PCBs																		
4,4'-DDD	UG/KG	0	0%	3.3	0	0	11	U	3.9 U	3.7 U	4 U	3.6 U	3.6 U	4.3 U	3.7 U	3.7 U	3.7 U	3.7 U
4,4'-DDE	UG/KG	0	0%	3.3	0	0	11	U	3.9 U	3.7 U	4 U	3.6 U	3.6 U	4.3 U	3.7 U	3.7 U	3.7 U	3.7 U
4,4'-DDT	UG/KG	0	0%	3.3	0	0	11	U	3.9 U	3.7 U	4 U	3.6 U	3.6 U	4.3 U	3.7 U	3.7 U	3.7 U	3.7 U
Aldrin	UG/KG	0	0%	5	0	0	11	U	2 U	1.9 U	2 U	1.8 U	1.9 U	2.2 U	1.9 U	1.9 U	1.9 U	1.9 U
Alpha-BHC	UG/KG	0	0%	20	0	0	11	U	2 U	1.9 U	2 U	1.8 U	1.9 U	2.2 U	1.9 U	1.9 U	1.9 U	1.9 U
Alpha-Chlordane	UG/KG	0	0%	94	0	0	11	U	2 U	1.9 U	2 U	1.8 U	1.9 U	2.2 U	1.9 U	1.9 U	1.9 U	1.9 U
Aroclor-1016	UG/KG	0	0%	100	0	0	11	U	39 U	37 U	40 U	36 U	36 U	43 U	37 U	37 U	37 U	37 U
Aroclor-1221	UG/KG	0	0%	100	0	0	11	U	79 U	76 U	81 U	73 U	74 U	88 U	74 U	74 U	74 U	74 U

TABLE 1
SEAD-70 SOIL SAMPLE RESULTS
SENECA ARMY DEPOT ACTIVITY

Parameter	Units	Maximum Value	Frequency of Detection	Criteria Value [1]	Number of Exceedances	Number of Times Detected	Number of Samples Analyzed [2]	SEAD-70 SB70-3 SOIL SB70-3-05 8 10 2.21/1994 SA ESI Value (Q)
Volatile Organic Compounds								
1,1,1-Trichloroethane	UG/KG	0	0%	680	0	0	11	11 U
1,1,2,2-Tetrachloroethane	UG/KG	0	0%		0	0	11	11 U
1,1,2-Trichloroethane	UG/KG	0	0%		0	0	11	11 U
1,1-Dichloroethane	UG/KG	0	0%	270	0	0	11	11 U
1,1-Dichloroethene	UG/KG	0	0%	330	0	0	11	11 U
1,2-Dichloroethane	UG/KG	0	0%	20	0	0	11	11 U
1,2-Dichloroethene (total)	UG/KG	0	0%	190	0	0	11	11 U
1,2-Dichloropropane	UG/KG	0	0%		0	0	11	11 U
Acetone	UG/KG	79	9%	50	1	1	11	11 U
Benzene	UG/KG	0	0%	60	0	0	11	11 U
Bromodichloromethane	UG/KG	0	0%		0	0	11	11 U
Bromoform	UG/KG	0	0%		0	0	11	11 U
Carbon disulfide	UG/KG	0	0%		0	0	11	11 U
Carbon tetrachloride	UG/KG	0	0%	760	0	0	11	11 U
Chlorobenzene	UG/KG	0	0%	1100	0	0	11	11 U
Chlorodibromomethane	UG/KG	0	0%		0	0	11	11 U
Chloroethane	UG/KG	0	0%		0	0	11	11 U
Chloroform	UG/KG	0	0%	370	0	0	11	11 U
Cis-1,3-Dichloropropene	UG/KG	0	0%		0	0	11	11 U
Ethyl benzene	UG/KG	0	0%	1000	0	0	11	11 U
Methyl bromide	UG/KG	0	0%		0	0	11	11 U
Methyl butyl ketone	UG/KG	0	0%		0	0	11	11 U
Methyl chloride	UG/KG	0	0%		0	0	8	11 U
Methyl ethyl ketone	UG/KG	36	9%	120	0	1	11	11 U
Methyl isobutyl ketone	UG/KG	0	0%		0	0	11	11 U
Methylene chloride	UG/KG	0	0%	50	0	0	11	11 U
Styrene	UG/KG	0	0%		0	0	11	11 U
Tetrachloroethene	UG/KG	0	0%	1300	0	0	11	11 U
Toluene	UG/KG	3	9%	700	0	1	11	11 U
Total Xylenes	UG/KG	0	0%	260	0	0	11	11 U
Trans-1,3-Dichloropropene	UG/KG	0	0%		0	0	11	11 U
Trichloroethene	UG/KG	0	0%	470	0	0	11	11 U
Vinyl chloride	UG/KG	0	0%	20	0	0	11	11 U
Semivolatile Organic Compounds								
1,2,4-Trichlorobenzene	UG/KG	0	0%		0	0	11	360 U
1,2-Dichlorobenzene	UG/KG	0	0%	1100	0	0	11	360 U
1,3-Dichlorobenzene	UG/KG	0	0%	2400	0	0	11	360 U
1,4-Dichlorobenzene	UG/KG	0	0%	1800	0	0	11	360 U
2,2'-oxybis(1-Chloropropane)	UG/KG	0	0%		0	0	11	360 U
2,4,5-Trichlorophenol	UG/KG	0	0%		0	0	11	880 U
2,4,6-Trichlorophenol	UG/KG	0	0%		0	0	11	360 U
2,4-Dichlorophenol	UG/KG	0	0%		0	0	11	360 U
2,4-Dimethylphenol	UG/KG	0	0%		0	0	11	360 U
2,4-Dinitrophenol	UG/KG	0	0%		0	0	11	880 U
2,4-Dinitrotoluene	UG/KG	0	0%		0	0	11	360 U
2,6-Dinitrotoluene	UG/KG	0	0%		0	0	11	360 U
2-Chloronaphthalene	UG/KG	0	0%		0	0	11	360 U
2-Chlorophenol	UG/KG	0	0%		0	0	11	360 U
2-Methylnaphthalene	UG/KG	0	0%		0	0	11	360 U
2-Methylphenol	UG/KG	0	0%	330	0	0	11	360 U
2-Nitroaniline	UG/KG	0	0%		0	0	11	880 U
2-Nitrophenol	UG/KG	0	0%		0	0	11	360 U
3,3'-Dichlorobenzidine	UG/KG	0	0%		0	0	11	360 U
3-Nitroaniline	UG/KG	0	0%		0	0	11	880 U
4,6-Dinitro-2-methylphenol	UG/KG	0	0%		0	0	11	880 U

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SENECA ARMY DEPOT ACTIVITY

Parameter	Units	Maximum Value	Frequency of Detection	Criteria Value [1]	Number of Exceedances	Number of Times Detected	Number of Samples Analyzed [2]	SEAD-70 SB70-3 SOIL SB70-3-05 8 10 2/21/1994 SA ESI Value (Q)
Aroclor-1232	UG/KG	0	0%	100	0	0	11	36 U
Aroclor-1242	UG/KG	0	0%	100	0	0	11	36 U
Aroclor-1248	UG/KG	0	0%	100	0	0	11	36 U
Aroclor-1254	UG/KG	0	0%	100	0	0	11	36 U
Aroclor-1260	UG/KG	0	0%	100	0	0	11	36 U
Beta-BHC	UG/KG	0	0%	36	0	0	11	1.9 U
Delta-BHC	UG/KG	0	0%	40	0	0	11	1.9 U
Dieldrin	UG/KG	0	0%	5	0	0	11	3.6 U
Endosulfan I	UG/KG	0	0%	2400	0	0	11	1.9 U
Endosulfan II	UG/KG	0	0%	2400	0	0	11	3.6 U
Endosulfan sulfate	UG/KG	0	0%	2400	0	0	11	3.6 U
Endrin	UG/KG	0	0%	14	0	0	11	3.6 U
Endrin aldehyde	UG/KG	0	0%		0	0	11	3.6 U
Endrin ketone	UG/KG	0	0%		0	0	11	3.6 U
Gamma-BHC/Lindane	UG/KG	0	0%	100	0	0	11	1.9 U
Gamma-Chlordane	UG/KG	0	0%		0	0	11	1.9 U
Heptachlor	UG/KG	0	0%	42	0	0	11	1.9 U
Heptachlor epoxide	UG/KG	0	0%		0	0	11	1.9 U
Methoxychlor	UG/KG	0	0%		0	0	11	19 U
Toxaphene	UG/KG	0	0%		0	0	11	190 U
Metals								
Aluminum	MG/KG	16600	100%		0	11	11	11400
Antimony	MG/KG	0.47	73%		0	8	11	0.25 J
Arsenic	MG/KG	15.2	100%	13	2	46	46	3.9 J
Barium	MG/KG	170	100%	350	0	11	11	50.4
Beryllium	MG/KG	0.81	100%	7.2	0	11	11	0.55 J
Cadmium	MG/KG	0.8	100%	2.5	0	11	11	0.13 J
Calcium	MG/KG	59100	100%		0	11	11	37300
Chromium	MG/KG	26.2	100%	30	0	11	11	19.7
Cobalt	MG/KG	21	100%		0	11	11	12.1
Copper	MG/KG	35.2	100%	50	0	11	11	17.2
Cyanide	MG/KG	0	0%	27	0	0	11	0.53 U
Iron	MG/KG	32200	100%		0	11	11	24800
Lead	MG/KG	22.1	100%	63	0	11	11	5.3 J
Magnesium	MG/KG	13600	100%		0	11	11	8170
Manganese	MG/KG	1040	100%	1600	0	11	11	414
Mercury	MG/KG	0.1	91%	0.18	0	10	11	0.02 UJ
Nickel	MG/KG	52.4	100%	30	8	11	11	**30.8**
Potassium	MG/KG	1750	100%		0	11	11	1260
Selenium	MG/KG	1	64%	3.9	0	7	11	0.49 J
Silver	MG/KG	0	0%	2	0	0	11	0.13 U
Sodium	MG/KG	165	82%		0	9	11	89.1 J
Thallium	MG/KG	0	0%		0	0	11	0.21 U
Vanadium	MG/KG	26.9	100%		0	11	11	16
Zinc	MG/KG	116	100%	109	1	11	11	73

Notes:

(1) Criteria based on NYSDEC Brownfield Unrestricted Use Soil Cleanup Objectives,
http://www.dec.state.ny.us/website/regs/subpart375_6.html

(2) Sample-duplicate pairs were not averaged. Samples were presented as discreet samples in the summary statistics.

(3) A bolded and outlined cell indicates a concentration that exceeded the criteria.

U = compound was not detected

J = the reported value is an estimated concentration

UJ = the compound was not detected; the associated reporting limit is approximate

R = the analytical result was rejected during data validation.

TABLE 2
SEAD-70 GROUNDWATER SAMPLE RESULTS
SENECA ARMY DEPOT ACTIVITY

Parameter	Units	Maximum Value	Frequency of Detection	Criteria Level	Number of Exceedances	Number of Times Detected	Number of Samples Analyzed	SEAD-70 MW70-1 GW MW70-1 3.7 9.6 7/7/2094 SA ESI Value (Q)	SEAD-70 MW70-2 GW MW70-2 4 10.7 7/7/2094 SA ESI Value (Q)	SEAD-70 MW70-3 GW MW70-3 4.3 8.3 7/8/2094 SA ESI Value (Q)	SEAD-70 MW70-4 GW MW70-4 3.4 9.3 7/8/2094 SA ESI Value (Q)
Volatile Organic Compounds											
1,1,1-Trichloroethane	UG/L	0	0%	5	0	0	4	10 U	10 U	10 U	10 U
1,1,2,2-Tetrachloroethane	UG/L	0	0%	5	0	0	4	10 U	10 U	10 U	10 U
1,1,2-Trichloroethane	UG/L	0	0%	1	0	0	4	10 U	10 U	10 U	10 U
1,1-Dichloroethane	UG/L	0	0%	5	0	0	4	10 U	10 U	10 U	10 U
1,1-Dichloroethene	UG/L	0	0%	5	0	0	4	10 U	10 U	10 U	10 U
1,2-Dichloroethane	UG/L	0	0%	0.6	0	0	4	10 U	10 U	10 U	10 U
1,2-Dichloroethene (total)	UG/L	0	0%	5	0	0	4	10 U	10 U	10 U	10 U
1,2-Dichloropropane	UG/L	0	0%	1	0	0	4	10 U	10 U	10 U	10 U
Acetone	UG/L	11	25%		0	1	4	10 U	11	10 U	10 U
Benzene	UG/L	0	0%	1	0	0	4	10 U	10 U	10 U	10 U
Bromodichloromethane	UG/L	0	0%	80	0	0	4	10 U	10 U	10 U	10 U
Bromoform	UG/L	0	0%	80	0	0	4	10 U	10 U	10 U	10 U
Carbon disulfide	UG/L	0	0%		0	0	4	10 U	10 U	10 U	10 U
Carbon tetrachloride	UG/L	0	0%	5	0	0	4	10 U	10 U	10 U	10 U
Chlorobenzene	UG/L	0	0%	5	0	0	4	10 U	10 U	10 U	10 U
Chlorodibromomethane	UG/L	0	0%	80	0	0	4	10 U	10 U	10 U	10 U
Chloroethane	UG/L	0	0%	5	0	0	4	10 U	10 U	10 U	10 U
Chloroform	UG/L	0	0%	7	0	0	4	10 U	10 U	10 U	10 U
Cis-1,3-Dichloropropene	UG/L	0	0%	0.4	0	0	4	10 U	10 U	10 U	10 U
Ethyl benzene	UG/L	0	0%	5	0	0	4	10 U	10 U	10 U	10 U
Methyl bromide	UG/L	0	0%	5	0	0	4	10 U	10 U	10 U	10 U
Methyl butyl ketone	UG/L	0	0%		0	0	4	10 U	10 U	10 U	10 U
Methyl ethyl ketone	UG/L	0	0%		0	0	4	10 U	10 U	10 U	10 U
Methyl isobutyl ketone	UG/L	0	0%		0	0	4	10 U	10 U	10 U	10 U
Methylene chloride	UG/L	0	0%	5	0	0	4	10 U	10 U	10 U	10 U
Styrene	UG/L	0	0%	5	0	0	4	10 U	10 U	10 U	10 U
Tetrachloroethene	UG/L	0	0%	5	0	0	4	10 U	10 U	10 U	10 U
Toluene	UG/L	0	0%	5	0	0	4	10 U	10 U	10 U	10 U
Total Xylenes	UG/L	0	0%	5	0	0	4	10 U	10 U	10 U	10 U
Trans-1,3-Dichloropropene	UG/L	0	0%	0.4	0	0	4	10 U	10 U	10 U	10 U
Trichloroethene	UG/L	0	0%	5	0	0	4	10 U	10 U	10 U	10 U
Vinyl chloride	UG/L	0	0%	2	0	0	4	10 U	10 U	10 U	10 U
Semivolatile Organic Compounds											
1,2,4-Trichlorobenzene	UG/L	0	0%	5	0	0	4	11 U	10 U	11 U	10 U
1,2-Dichlorobenzene	UG/L	0	0%	3	0	0	4	11 U	10 U	11 U	10 U
1,3-Dichlorobenzene	UG/L	0	0%	3	0	0	4	11 U	10 U	11 U	10 U
1,4-Dichlorobenzene	UG/L	0	0%	3	0	0	4	11 U	10 U	11 U	10 U
2,2'-oxybis(1-Chloropropane)	UG/L	0	0%		0	0	4	11 U	10 U	11 U	10 U
2,4,5-Trichlorophenol	UG/L	0	0%	1	0	0	4	28 U	25 U	28 U	25 U
2,4,6-Trichlorophenol	UG/L	0	0%	1	0	0	4	11 U	10 U	11 U	10 U
2,4-Dichlorophenol	UG/L	0	0%	5	0	0	4	11 U	10 U	11 U	10 U

TABLE 2
SEAD-70 GROUNDWATER SAMPLE RESULTS
SENECA ARMY DEPOT ACTIVITY

								SEAD-70	SEAD-70	SEAD-70	SEAD-70
								MW70-1	MW70-2	MW70-3	MW70-4
								GW	GW	GW	GW
								MW70-1	MW70-2	MW70-3	MW70-4
								3.7	4	4.3	3.4
								9.6	10.7	8.3	9.3
								7/7/2094	7/7/2094	7/8/2094	7/8/2094
								SA	SA	SA	SA
								ESI	ESI	ESI	ESI
Parameter	**Units**	**Maximum Value**	**Frequency of Detection**	**Criteria Level**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Hexachlorobenzene	UG/L	0	0%	0.04	0	0	4	11 U	10 U	11 U	10 U
Hexachlorobutadiene	UG/L	0	0%	0.5	0	0	4	11 U	10 U	11 U	10 U
Hexachlorocyclopentadiene	UG/L	0	0%	5	0	0	4	11 U	10 U	11 U	10 U
Hexachloroethane	UG/L	0	0%	5	0	0	4	11 U	10 U	11 U	10 U
Indeno(1,2,3-cd)pyrene	UG/L	0	0%		0	0	4	11 U	10 U	11 U	10 U
Isophorone	UG/L	0	0%		0	0	4	11 U	10 U	11 U	10 U
N-Nitrosodiphenylamine	UG/L	0	0%		0	0	4	11 U	10 U	11 U	10 U
N-Nitrosodipropylamine	UG/L	0	0%		0	0	4	11 U	10 U	11 U	10 U
Naphthalene	UG/L	0	0%		0	0	4	11 U	10 U	11 U	10 U
Nitrobenzene	UG/L	0	0%	0.4	0	0	4	11 U	10 U	11 U	10 U
Pentachlorophenol	UG/L	0	0%	1	0	0	4	28 U	25 U	28 U	25 U
Phenanthrene	UG/L	0	0%		0	0	4	11 U	10 U	11 U	10 U
Phenol	UG/L	0	0%	1	0	0	4	11 U	10 U	11 U	10 U
Pyrene	UG/L	0	0%		0	0	4	11 U	10 U	11 U	10 U
Pesticides and PCBs											
4,4'-DDD	UG/L	0	0%	0.3	0	0	4	0.1 U	0.11 U	0.1 UJ	0.11 U
4,4'-DDE	UG/L	0	0%	0.2	0	0	4	0.1 U	0.11 U	0.1 UJ	0.11 U
4,4'-DDT	UG/L	0	0%	0.2	0	0	4	0.1 U	0.11 U	0.1 UJ	0.11 U
Aldrin	UG/L	0	0%	0	0	0	4	0.051 U	0.054 U	0.052 UJ	0.054 U
Alpha-BHC	UG/L	0	0%	0.01	0	0	4	0.051 U	0.054 U	0.052 UJ	0.054 U
Alpha-Chlordane	UG/L	0	0%		0	0	4	0.051 U	0.054 U	0.052 UJ	0.054 U
Aroclor-1016	UG/L	0	0%	0.09	0	0	4	1 U	1.1 U	1 UJ	1.1 U
Aroclor-1221	UG/L	0	0%	0.09	0	0	4	2 U	2.1 U	2.1 UJ	2.2 U
Aroclor-1232	UG/L	0	0%	0.09	0	0	4	1 U	1.1 U	1 UJ	1.1 U
Aroclor-1242	UG/L	0	0%	0.09	0	0	4	1 U	1.1 U	1 UJ	1.1 U
Aroclor-1248	UG/L	0	0%	0.09	0	0	4	1 U	1.1 U	1 UJ	1.1 U
Aroclor-1254	UG/L	0	0%	0.09	0	0	4	1 U	1.1 U	1 UJ	1.1 U
Aroclor-1260	UG/L	0	0%	0.09	0	0	4	1 U	1.1 U	1 UJ	1.1 U
Beta-BHC	UG/L	0	0%	0.04	0	0	4	0.051 U	0.054 U	0.052 UJ	0.054 U
Delta-BHC	UG/L	0	0%	0.04	0	0	4	0.051 U	0.054 U	0.052 UJ	0.054 U
Dieldrin	UG/L	0	0%	0.004	0	0	4	0.1 U	0.11 U	0.1 UJ	0.11 U
Endosulfan I	UG/L	0	0%		0	0	4	0.051 U	0.054 U	0.052 UJ	0.054 U
Endosulfan II	UG/L	0	0%		0	0	4	0.1 U	0.11 U	0.1 UJ	0.11 U
Endosulfan sulfate	UG/L	0	0%		0	0	4	0.1 U	0.11 U	0.1 UJ	0.11 U
Endrin	UG/L	0	0%	0	0	0	4	0.1 U	0.11 U	0.1 UJ	0.11 U
Endrin aldehyde	UG/L	0	0%	5	0	0	4	0.1 U	0.11 U	0.1 UJ	0.11 U
Endrin ketone	UG/L	0	0%	5	0	0	4	0.1 U	0.11 U	0.1 UJ	0.11 U
Gamma-BHC/Lindane	UG/L	0	0%	0.05	0	0	4	0.051 U	0.054 U	0.052 UJ	0.054 U
Gamma-Chlordane	UG/L	0	0%		0	0	4	0.051 U	0.054 U	0.052 UJ	0.054 U
Heptachlor	UG/L	0	0%	0.04	0	0	4	0.051 U	0.054 U	0.052 UJ	0.054 U
Heptachlor epoxide	UG/L	0	0%	0.03	0	0	4	0.051 U	0.054 U	0.052 UJ	0.054 U
Methoxychlor	UG/L	0	0%	35	0	0	4	0.51 U	0.54 U	0.52 UJ	0.54 U

TABLE 3A
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN IN SEAD-70 SOIL
SENECA ARMY DEPOT ACTIVITY

Scenario Time frame:	Current/Future
Medium:	Soil
Exposure Medium:	Soil
Exposure Point:	SEAD-70

CAS Number	Chemical	Minimum Detected Concentration [1] (mg/kg)	Q	Maximum Detected Concentration [1] (mg/kg)	Q	Location of Maximum Concentration	Detection Frequency [1]	Range of Reporting Limits 1 (mg/kg)	Concentration Used for Screening [2] (mg/kg)	Background Value [3] (mg/kg)	Screening Value [4] (mg/kg)	Potential ARAR/TBC Source	ARAR / TBC Value [5] (mg/kg)	COPC Flag	Rationale for Contaminant Deletion or Selection [6]
VOC															
67-64-1	Acetone	0.079		0.079		SB70-1	1 / 11	0.011 - 0.035	0.079		6,100	NYSDEC Subpart 375-6	0.05	NO	BSL
78-93-3	Methyl ethyl ketone	0.036		0.036		SB70-1	1 / 11	0.011 - 0.017	0.036		2,800	NYSDEC Subpart 375-6	0.12	NO	BSL
108-88-3	Toluene	0.003	J	0.003	J	SB70-1	1 / 11	0.011 - 0.014	0.003		500	NYSDEC Subpart 375-6	0.7	NO	BSL
SVOC															
117-81-7	Bis(2-Ethylhexyl)phthalate	0.021	J	0.61		MW70-1	11 / 11	0 - 0	0.61		35			NO	BSL
84-74-2	Di-n-butylphthalate	0.025	J	0.051	J	SB70-3	6 / 11	0.36 - 0.49	0.051		610			NO	BSL
117-84-0	Di-n-octylphthalate	0.03	J	0.03	J	SB70-1	1 / 11	0.36 - 0.49	0.03						NSV
Metals															
7429-90-5	Aluminum	9,340		16,600		SB70-1	11 / 11	0 - 0	16,600	20,500	7,700			YES	ASL
7440-36-0	Antimony	0.19	J	0.47	J	SB70-2	8 / 11	0.19 - 0.23	0.47	6.55	3.1			NO	BSL
7440-38-2	Arsenic	2.4	J	15.2	J	70EXPR10046	46 / 46	0 - 0	15.2	21.5	0.39	NYSDEC Subpart 375-6	13	YES	ASL
7440-39-3	Barium	40.5		170		SB70-1	11 / 11	0 - 0	170	159	1,500	NYSDEC Subpart 375-6	350	NO	BSL
7440-41-7	Beryllium	0.41	J	0.81	J	SB70-1	11 / 11	0 - 0	0.81	1.4	16	NYSDEC Subpart 375-6	7.2	NO	BSL
7440-43-9	Cadmium	0.05	J	0.8	J	MW70-1	11 / 11	0 - 0	0.8	2.9	7	NYSDEC Subpart 375-6	2.5	NO	BSL
7440-70-2	Calcium	3,600		59,100		SB70-3	11 / 11	0 - 0	59,100	293,000					NUT
7440-47-3	Chromium	13.7		26.2		SB70-1	11 / 11	0 - 0	26.2	32.7	280	NYSDEC Subpart 375-6	30	NO	BSL
7440-48-4	Cobalt	5.5	J	21		MW70-1	11 / 11	0 - 0	21	29.1	2.3			YES	ASL
7440-50-8	Copper	12.4		35.2		SB70-1	11 / 11	0 - 0	35.2	62.8	310	NYSDEC Subpart 375-6	50	NO	BSL
7439-89-6	Iron	16,000		32,200		SB70-1	11 / 11	0 - 0	32,200	381,600	5,500			YES	ASL
7439-92-1	Lead	4.2	J	22.1	J	SB70-1	11 / 11	0 - 0	22.1	266	40	NYSDEC Subpart 375-6	63	NO	BSL
7439-95-4	Magnesium	2,830		13,600		MW70-1	11 / 11	0 - 0	13,600	29,100					NUT
7439-96-5	Manganese	233		1,040		MW70-1	11 / 11	0 - 0	1,040	2,380	180	NYSDEC Subpart 375-6	1,600	YES	ASL
7439-97-6	Mercury	0.02	J	0.1		MW70-1	10 / 11	0.02 - 0.02	0.1	0.13	0.43	NYSDEC Subpart 375-6	0.18	NO	BSL
7440-02-0	Nickel	12.3		52.4		MW70-1	11 / 11	0 - 0	52.4	62.3	150	NYSDEC Subpart 375-6	30	NO	BSL
7440-09-7	Potassium	982	J	1,750		SB70-2	11 / 11	0 - 0	1,750	3,160					NUT
7782-49-2	Selenium	0.32	J	1	J	MW70-1	7 / 11	0.24 - 0.32	1	1.7	39	NYSDEC Subpart 375-6	3.9	NO	BSL
122-34-9	Sodium	30.3	J	165	J	MW70-1	9 / 11	34.9 - 36.4	165	269	4			YES	NUT
7440-62-2	Vanadium	13.9		26.9		SB70-1	11 / 11	0 - 0	26.9	32.7	55			NO	BSL
7440-66-6	Zinc	42.4		116		MW70-1	11 / 11	0 - 0	116	126	2,300	NYSDEC Subpart 375-6	109	NO	BSL

Notes:

1. Field duplicate pairs were not averaged and were presented as discrete samples. Laboratory duplicates were not included in the assessment. Range of reporting limits were presented for nondetects only.
2. The maximum detected concentration was used for screening.
3. Background value is the maximum Seneca background concentration.
4. EPA Regional Screening Levels for residential soil. On-line resources available at http://www.epa.gov/region09/superfund/prg/index.html. Last updated April 2009.
   Region 9 PRGs were derived based on Direct contact exposure (ingestion and dermal contact) and a target Cancer Risk of 1E-6 or a Target Hazard Quotient of 0.1.
   Screening values for calcium, magnesium, potassium, and sodium were calculated based on an assumption of 200 mg/day soil ingestion and recommended dietary allowances and adequate intakes for 1-3 yr children
   (500 mg/day and 80 mg/day for calcium and magnesium) and minimum requirements for 1 yr children (225 mg/day and 1000 mg/day for sodium and potassium) from Marilyn Wright (2001) Dietary Reference Intakes.
   PRG for total chromium (1:6 ratio Cr VI: Cr III) was used as screening value for chromium.
   PRG for nickel (soluble salts) was used as screening value for nickel.
5. Potential ARAR/TBC values are from NYSDEC Brownfield Unrestricted Use Soil Cleanup Objectives, http://www.dec.state.ny.us/website/regs/subpart375_6.html
6. Rationale codes

	Selection Reason:	Above Screening Levels (ASL)
		Chemicals in the Same Group were retained as COPC (CSG)
	Deletion Reason:	Essential Nutrient (NUT)
		Below Screening Level (BSL)
		No Screening Value (NSV)

Definitions:

COPC = Chemical of Potential Concern
ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered
Q = Qualifier
J = Estimated Value

TABLE 4A
SEAD-70 SOIL EXPOSURE POINT CONCENTRATION SUMMARY
SENECA ARMY DEPOT ACTIVITY

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Soil
Exposure Point:	SEAD-70

CAS #	Chemical of Potential Concern	Units	Arithmetic Mean (1)	EPA ProUCL Student-t 95th UCL Value (1, 2, 4)	Maximum Detected Concentration (1)	Q	EPC Units	Reasonable Maximum Exposure (2)		
								EPA ProUCL Recommended UCL Value	Medium EPC Statistic	Medium EPC Rationale
117-84-0	Di-n-octylphthalate	mg/kg	0.437	-(3)	0.490	J	mg/kg	0.49	-	-
7429-90-5	Aluminum	mg/kg	11,313	-(3)	12400		mg/kg	12400	-	-
7440-38-2	Arsenic	mg/kg	7.43	8.49	15.2	J	mg/kg	8.49	95% Student's-t UCL	Normal
7440-48-4	Cobalt	mg/kg	8.6	-(3)	12		mg/kg	11.90	-	-
7439-89-6	Iron	mg/kg	20,967	-(3)	26300		mg/kg	26300	-	-
7439-96-5	Manganese	mg/kg	332	-(3)	465		mg/kg	465	-	-

Notes:

1. Field duplicates were not averaged and presented as discreet samples. Laboratory duplicates were not included in the assessment.
   Non-detectes were included in the dataset and 95% UCL analysis was performed as 'With ND' in ProUCL.
2. The EPCs were calculated using the ProUCL (Version 4.00.02) and the EPCs were selected in accordance with the ProUCL Version 4.0 User Guide (USEPA, 2004) and the Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites (USEPA, 2002).
   Q - qualifier
   J = Estimated Value
   KM = Kaplan-Meier statistical method
3. Insufficient number of detects in the dataset to perform 95th UCL analysis in ProUCL. This typical means there was a single detect in the dataset for this compound.

TABLE 4C
AMBIENT AIR EXPOSURE POINT CONCENTRATIONS FOR PARK WORKERS, VISITORS, & RESIDENTS AT SEAD-70
SENECA ARMY DEPOT ACTIVITY

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Air
Exposure Point:	SEAD-70

Equation for Air EPC from Surface Soil (mg/m^3) = CSsurf x PM10 x CF

Variables:
CSsurf = Chemical Concentration in Surface Soil, from EPC data (mg/kg)
PM10 = Average Measured PM10 Concentration = 32.58 ug/m^3
CF = Conversion Factor = 1E-9 kg/ug

Analyte	Reasonable Maximum Exposure	
	EPC Data for Surface Soil (mg/kg)	**Calculated Air EPC Surface Soil** (mg/m^3)
Di-n-octylphthalate	4.9E-01	1.6E-08
Aluminum	1.2E+04	4.0E-04
Arsenic	8.5E+00	2.8E-07
Cobalt	1.2E+01	3.9E-07
Iron	2.6E+04	8.6E-04
Manganese	4.7E+02	1.5E-05

TABLE 4E
CALCULATION OF AIR CONCENTRATION IN SHOWER
FROM VOLATILIZATION OF GROUNDWATER (DAILY) IN SEAD-70
SENECA ARMY DEPOT ACTIVITY

Scenario Time frame:	Current/Future
Medium:	Groundwater
Exposure Medium:	Air
Exposure Point:	SEAD-70

Analyte	Residential Adult Time of Shower -T_{event} (min)	Residential Adult EPC Air (mg/m^3)	Residential Child Time of Shower -T_{event} (min)	Residential Child EPC Air (mg/m^3)	Shower - Fw (L/min)	Reasonable Maximum Exposure: EPC Groundwater (mg/l)	Flow Rate of Air in Shower-Fa (m^3/min)	Volume of Bathroom- (m^3)	Henry Laws Constant-H (m^3-atm/mol)	Asymptotic Air Conc.-Cinf (mg/m^3)	Rate Constant-K (1/min)	Efficiency of Release-E (unitless)	Efficiency of Release for TCE - E-TCE	Henry Laws Constant- H-TCE (m^3-atm/mol)
Iron	35	1.55E+01	60	1.55E+01	19	2.14E+00	2.4	12	1.77E-02	1.69E+01	0.20	1.00E+00	0.6	0.0091

Concentration in Air (mg/m^3) = Cinf[1+(1/(kTs)(exp(-kTs)-1)]

Asymptotic Air Conc. - Cinf (mg/m^3) = [(E)(Fw)(EPCgw)]/Fa

Rate Constant - k (l/min) = Fa/Vb

Efficiency of Release - E (unitless) = (E-tce)(H)/(H-tce)

Variables:

CA = Chemical Concentration in Air (mg/m^3)
Ts = Time of Shower (minutes)

Fw = Flow Rate of Shower (L/min)
Fa = Flow Rate of Air in Shower (m^3/min)
Vb = Volume of Bathroom (m^3)

Assumptions:

EPC - Groundwater Data - RME
35 and 60 minutes for adult and child, respectively

2.4 (Average Air Flow)
12 (Average Bathroom Volume)

Note:
Henry's law constants not available for the inorganic COPC.

TABLE 5
CALCULATION OF INTAKE AND RISK FROM THE INGESTION OF SOIL
REASONABLE MAXIMUM EXPOSURE (RME) - SEAD-70
SENECA ARMY DEPOT ACTIVITY

Equation for Intake (mg/kg-day) = $\frac{EPC \times IR \times CF \times FI \times EF \times ED \times B}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):

EPC = Exposure Point Concentration in Soil, mg/kg
IR = Ingestion Rate
CF = Conversion Factor
FI = Fraction Ingested
B = Bioavailability
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Oral RfD	Carc. Slope Oral	Bioavailability	EPC Surface Soil	Park Worker				Construction Worker				Recreational Child Visitor			
					Intake (mg/kg-day)		Hazard Quotient	Cancer Risk	Intake (mg/kg-day)		Hazard Quotient	Cancer Risk	Intake (mg/kg-day)		Hazard Quotient	Cancer Risk
	(mg/kg-day)	(mg/kg-day)-1	(unitless)	(mg/kg)	(Nc)	(Car)			(Nc)	(Car)			(Nc)	(Car)		
Di-n-octylphthalate	N/A	N/A	1	4.9E-01												
Aluminum	1.00E+00	N/A	1	1.2E+04	8.49E-03		8E-03		4.00E-02		4E-02		6.34E-03		6E-03	
Arsenic	3.00E-04	1.5E+00	1	8.5E+00	5.81E-06	2.08E-06	2E-02	3E-06	2.74E-05	3.91E-07	9E-02	6E-07	4.34E-06	3.10E-07	1E-02	5E-07
Cobalt	3.00E-04	N/A	1	1.2E+01	8.15E-06		3E-02		3.84E-05		1E-01		6.09E-06		2E-02	
Iron	3.00E-01	N/A	1	2.6E+04	1.80E-02		6E-02		8.49E-02		3E-01		1.35E-02		4E-02	
Manganese	2.40E-02	N/A	1	4.7E+02	3.18E-04		1E-02		1.50E-03		6E-02		2.38E-04		1E-02	
Total Hazard Quotient and Cancer Risk:							**1E-01**	**3E-06**			**6E-01**	**6E-07**			**1E-01**	**5E-07**

Assumptions for Park Worker		Assumptions for Construction Worker		Assumptions for Recreational Child Visitor	
CF =	1E-06 kg/mg	CF =	1E-06 kg/mg	CF =	1E-06 kg/mg
EPC=	EPC Surface Only	EPC=	EPC Surface and Subsurface	EPC=	EPC Surface Only
BW =	70 kg	BW =	70 kg	BW =	15 kg
IR =	100 mg/day	IR =	330 mg/day	IR =	200 mg/day
FI =	1 unitless	FI =	1 unitless	FI =	1 unitless
EF =	175 days/year	EF =	250 days/year	EF =	14 days/year
ED =	25 years	ED =	1 years	ED =	5 years
AT (Nc) =	9,125 days	AT (Nc) =	365 days	AT (Nc) =	1,825 days
AT (Car) =	25,550 days	AT (Car) =	25,550 days	AT (Car) =	25,550 days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.

TABLE 6
CALCULATION OF INTAKE AND RISK FROM THE INTAKE OF GROUNDWATER
REASONABLE MAXIMUM EXPOSURE (RME) - SEAD-46
SENECA ARMY DEPOT ACTIVITY

Equation for Intake (mg/kg-day) = $\frac{EPC \times IR \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):

EPC = Exposure Point Concentration in Groundwater (mg/L)
IR = Intake Rate
EF = Exposure Frequency
ED=Exposure Duration
BW=Bodyweight
AT=Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Oral RfD	Carc. Slope Oral	EPC Groundwater	Park Worker				Construction Worker				Recreational Child Vistor			
				Intake (mg/kg-day)		Hazard Quotient	Cancer Risk	Intake (mg/kg-day)		Hazard Quotient	Cancer Risk	Intake (mg/kg-day)		Hazard Quotient	Cancer Risk
	(mg/kg-day)	(mg/kg-day)-1	(mg/liter)	(Nc)	(Car)			(Nc)	(Car)			(Nc)	(Car)		
Iron	3.E-01	N/A	2.14	1.5E-02	5.2E-03	5E-02		2.1E-02	3.0E-04	7E-02		8.2E-03	5.9E-04	3E-02	
Total Hazard Quotient and Cancer Risk:						**5E-02**				**7E-02**				**3E-02**	

Assumptions for Park Worker		Assumptions for Construction Worker		Assumptions for Recreational Child Visitor	
BW =	70 kg	BW =	70 kg	BW =	15 kg
IR =	1 liters/day	IR =	1 liters/day	IR =	1.5 liters/day
EF =	175 days/year	EF =	250 days/year	EF =	14 days/year
ED =	25 years	ED =	1 years	ED =	5 years
AT (Nc) =	9,125 days	AT (Nc) =	365 days	AT (Nc) =	1,825 days
AT (Car) =	25,550 days	AT (Car) =	25,550 days	AT (Car) =	25,550 days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
N/A= Information not available.

TABLE 7
CALCULATION OF ABSORBED DOSE AND RISK FROM DERMAL CONTACT TO SOIL
REASONABLE MAXIMUM EXPOSURE (RME) - SEAD-70 SOIL
SENECA ARMY DEPOT ACTIVITY

Equation for Intake (mg/kg-day) = $\frac{EPC \times CF \times SA \times AF \times ABS \times EV \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):

EPC = Chemical Concentration in Soil, mg/kg
CF = Conversion Factor
SA = Surface Area Contact
AF = Adherence Factor
ABS = Absorption Factor
EV = Event Frequency
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Dermal RfD	Carc. Slope Dermal	Absorbtion Fraction*	EPC Surface Soil	EPC from Total Soils	Park Worker				Construction Worker				Recreational Child Visitor			
						Absorbed Dose (mg/kg-day)		Hazard Quotient	Cancer Risk	Absorbed Dose (mg/kg-day)		Hazard Quotient	Cancer Risk	Absorbed Dose (mg/kg-day)		Hazard Quotient	Cancer Risk
	(mg/kg-day)	(mg/kg-day)-1	(unitless)	(mg/kg)	(mg/kg)	(Nc)	(Car)			(Nc)	(Car)			(Nc)	(Car)		
Di-n-octylphthalate	N/A	N/A	1.0E-01	4.9E-01	4.9E-01												
Aluminum	1.00E+00	N/A	1E-03	1.2E+04	1.2E+04	5.61E-05		6E-05		1.20E-04		1E-04		1.78E-05		1.78E-05	
Arsenic	3.00E-04	1.5E+00	3.0E-02	8.5E+00	8.5E+00	1.15E-06	4.11E-07	4E-03	6E-07	2.47E-06	3.52E-08	8E-03	5E-08	3.65E-07	2.60E-08	1.22E-03	3.91E-08
Cobalt	3.00E-04	N/A	1.0E-03	1.2E+01	1.2E+01	5.38E-08		2E-04		1.15E-07		4E-04		1.70E-08		5.68E-05	
Iron	3.00E-01	N/A	1.0E-03	2.6E+04	2.6E+04	1.19E-04		4E-04		2.55E-04		8E-04		3.77E-05		1.26E-04	
Manganese	9.60E-04	N/A	1.0E-03	4.7E+02	4.7E+02	2.10E-06		2E-03		4.50E-06		5E-03		6.66E-07		6.94E-04	
Total Hazard Quotient and Cancer Risk:								**7E-03**	**6E-07**			**1E-02**	**5E-08**			**2E-03**	**4E-08**

Assumptions for Park Worker		Assumptions for Construction Worker		Assumptions for Recreational Child Visitor	
CF =	1E-06 kg/mg	CF =	1E-06 kg/mg	CF =	1E-06 kg/mg
CS =	EPC Surface Only	EPC =	EPC Surface and Subsurface	EPC =	EPC Surface Only
BW =	70 kg	BW =	70 kg	BW =	15 kg
SA =	3,300 cm^2	SA =	3,300 cm^2	SA =	2,800 cm^2
AF =	0.2 mg/cm^2-event	AF =	0.3 mg/cm^2-event	AF =	0.2 mg/cm^2-event
EV =	1 event/day	EV =	1 event/day	EV =	1 event/day
EF =	175 days/year	EF =	250 days/year	EF =	14 days/year
ED =	25 years	ED =	1 years	ED =	5 years
AT (Nc) =	9,125 days	AT (Nc) =	365 days	AT (Nc) =	1,825 days
AT (Car) =	25,550 days	AT (Car) =	25,550 days	AT (Car) =	25,550 days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.
* Absorption factors from Exhibit 3-4 of USEPA (2004) Supplemental Guidance for Dermal Risk Assessment, Part E of Risk Assessment Guidance for Superfund, Human Health Evaluation Manual (Volume 1).
Absorption factor for VOC was assumed to be 0.01 and metals not presented in the EPA (2004) document, assumed to be 0.001 in accordance with the USEPA Region 4 (2000)
Supplemental Guidance to RAGS: Region 4 Bulletins, Human Health Risk Assessment Bulletins (http://www.epa.gov/region4/waste/ots/healtbul.htm).
Absorption factor for pesticides was assumed to be 0.037 in accordance with the average absorption factor of chlordane (0.03), DDT (0.04), and lindane (0.04) in accordance with USEPA Region 4 (2000).

TABLE 8
CALCULATION OF ABSORBED DOSE AND RISK FROM DERMAL CONTACT TO GROUNDWATER
REASONABLE MAXIMUM EXPOSURE (RME) - SEAD-70
SENECA ARMY DEPOT ACTIVITY

Equation for Dermal (mg/kg-day) = $\frac{DA \times SA \times EF \times ED \times EV}{B \times W \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):

DA = Absorbed Dose per Event, mg/cm^2-event
SA = Surface Area Contact
EF = Exposure Frequency
EV = Event Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Absorbed Dose per Event (DA):

For inorgani $DA = Kp \times EPC \times t_{event} \times C$

For organics If $t_{event} <= t^*$, then: $DA_{event} = 2\ FA \times K_p \times EPC \times C\ (\ (6\ t_{event} \times t_{event}) / p\ )^{1/2}$

if $t_{event} > t^*$, then: $DA_{event} = FA \times K_p \times EPC \times C\ [\ (t_{event} / 1 + B) + 2\ t_{event}\ (\ (1 + 3\ B + 3\ B^2) / (1 + B)^2\ )\ ]$

K_p = Permeability Coefficient, cm/hr
EPC = EPC in Groundwater, mg/L
C = Conversion Factor, 10^{-3} L/cm^3

B = Dimensionless ratio of the permeability coefficient of a compound through the stratum corneum relative to its permeability coefficient across the viable epidermis (ve) (dimensionless)
FA = Fraction absorbed water (dimensionless)

$B = Kp\ (MW)^{1/2} / 2.6$

If B<= 0.6, then $t^* = 2.4\ t_{event}$

t_{event} is Lag Time per event (hr/event) = $0.105 \times 10^{(0.0056MW)}$

If B > 0.6, then $t^* = 6t_{event}\ (b - SQRT(b^2 - c^2))$

t^* is time to reach steady-state (hr)

$b = ((2(1+B)^2)/p) - c$

t_{event} = duration of event, hr/event

$c = (1+3B+3B^2)/3(1+B)$

Equation for Hazard Quotient = $\frac{\text{Chronic Daily Intake (Nc)}}{\text{Reference Dose}}$

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Dermal RfD (mg/kg-day)	Carc. Slope Dermal (mg/kg-day)-1	Permeability Coefficient Kp (cm/hr)	t_{event} (hr/event)	Fraction Absorbed Water	B	t* (hour)	EPC Ground Water (mg/L)	Absorbed Dose/Event (mg/cm^2-event)	Park Worker Intake (mg/kg-day) (Nc)	Park Worker Intake (mg/kg-day) (Car)	Park Worker Hazard Quotient	Park Worker Cancer Risk	Construction Worker Intake (mg/kg-day) (Nc)	Construction Worker Intake (mg/kg-day) (Car)	Construction Worker Hazard Quotient	Construction Worker Cancer Risk	Recreational Child Visitor Intake (mg/kg-day) (Nc)	Recreational Child Visitor Intake (mg/kg-day) (Car)	Recreational Child Visitor Hazard Quotient	Recreational Child Visitor Cancer Risk
Iron	3.E-01	N/A	1.00E-03	8.9.E-01	1.00E+00	5.0.E-03	2.1.E+00	2.E+00	3.9.E-06					4E-05		1E-04					
Total Hazard Quotient and Cancer Risk:																**1E-04**	**0E+00**				

Assumptions for Construction Worker

BW =	70	kg
SA =	2,490	cm2
EV=	1	event/day
EF =	100	days/year
ED =	1	years
t_{event} =	0.5	hr/event
AT (Nc) =	365	days
AT (Car) =	25,550	days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.
Kp value from Exhibit B1 or B-2 of "Supplemental Guidance for Dermal Risk Assessment", Part E of Risk Assessment Guidance for Superfund, Human Health Evaluation Manual (Volume 1), August 16, 2004. For chemicals that did not have a Kp value listed in Exibit B-1 or B-2, Kp was calculated using:
Kp = 10^(-2.80+0.66(logKow)-0.0056(MW))

TABLE 9
CALCULATION OF INTAKE AND RISK FROM INHALATION OF GROUNDWATER (WHILE SHOWERING)
REASONABLE MAXIMUM EXPOSURE (RME) - SEAD-70
SENECA ARMY DEPOT ACTIVITY

Equation for Intake (mg/kg-day) = $\frac{EPC \times IR \times t_{event} \times EV \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):

EPC =Exposure Point Concentration in Air (mg/m^3)
t_{event} = Event Duration
IR = Inhalation Rate
EF = Exposure Frequency
ED=Exposure Duration
EV = Event Frequency
BW=Body Weight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Inhalation RfD	Carc. Slope Inhalation	EPC* Air Adult	EPC* Air Child	Resident Adult				Resident Child				Resident
					Intake (mg/kg-day)		Hazard Quotient	Contribution to Lifetime Cancer Risk	Intake (mg/kg-day)		Hazard Quotient	Contribution to Lifetime Cancer Risk	Total Lifetime Cancer Risk
	(mg/kg-day)	(mg/kg-day)-1	(mg/m^3)	(mg/m^3)	(Nc)	(Car)			(Nc)	(Car)			
Iron	N/A	N/A	1.55E+01	1.55E+01									
Total Hazard Quotient and Cancer Risk:													

Assumptions for Future Resident (Adult)		Assumptions for Future Resident (Child)	
BW =	70 kg	BW =	15 kg
IR =	1.0 m^3/hr	IR =	1.0 m^3/hr
t_{event} =	0.58 hr/event	t_{event} =	1.0 hr/event
EV =	1 event/day	EV =	1 event/day
EF =	350 days/year	EF =	350 days/year
ED =	24 years	ED =	6 years
AT (Nc) =	8,760 days	AT (Nc) =	2,190 days
AT (Car) =	25,550 days	AT (Car) =	25,550 days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.
* EPC air is the concentration of chemical available for inhalation after accounting for partitioning between the air and water in the shower.

TABLE 10
CALCULATION OF INTAKE AND RISK FROM INHALATION OF DUST IN AMBIENT AIR
REASONABLE MAXIMUM EXPOSURE (RME) - SEAD-70 SOIL
SENECA ARMY DEPOT ACTIVITY

Equation for Intake (mg/kg-day) = $\frac{EPC \times IR \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):

EPC = EPC in Air, mg/m3
IR = Inhalation Rate
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Inhalation RfD	Carc. Slope Inhalation	Air EPC from Surface Soil	Air EPC from Total Soils	Park Worker				Construction Worker				Recreational Child Visitor			
					Intake (mg/kg-day)		Hazard Quotient	Cancer Risk	Intake (mg/kg-day)		Hazard Quotient	Cancer Risk	Intake (mg/kg-day)		Hazard Quotient	Cancer Risk
	(mg/kg-day)	(mg/kg-day)-1	(mg/m3)	(mg/m3)	(Nc)	(Car)			(Nc)	(Car)			(Nc)	(Car)		
Di-n-octylphthalate	N/A	N/A	1.6E-08	1.6E-08												
Aluminum	1.43E-03	N/A	4.0E-04	4.0E-04	2.21E-05		2E-02		4.11E-05		3E-02		8.99E-06		6E-03	
Arsenic	N/A	1.51E+01	2.8E-07	2.8E-07		5.41E-09		8E-08		4.02E-10		6E-09		4.39E-10		7E-09
Cobalt	1.71E-06	3.15E+01	3.9E-07	3.9E-07	2.12E-08	7.59E-09	1E-02	2E-07	3.95E-08	5.64E-10	2E-02	2E-08	8.62E-09	6.16E-10	5E-03	2E-08
Iron	N/A	N/A	8.6E-04	8.6E-04												
Manganese	1.43E-05	N/A	1.5E-05	1.5E-05	8.30E-07		6E-02		1.54E-06		1E-01		3.37E-07		2E-02	
Total Hazard Quotient and Cancer Risk:							**9E-02**	**3E-07**			**2E-01**	**2E-08**			**3E-02**	**3E-08**

Assumptions for Park Worker		Assumptions for Construction Worker		Assumptions for Recreational Child Visitor	
CA =	EPC Surface Only	CA =	EPC Surface and Sub-Surface	CA =	EPC Surface Only
BW =	70 kg	BW =	70 kg	BW =	15 kg
IR =	8 m3/day	IR =	10.4 m3/day	IR =	8.7 m3/day
EF =	175 days/year	EF =	250 days/year	EF =	14 days/year
ED =	25 years	ED =	1 year	ED =	5 years
AT (Nc) =	9,125 days	AT (Nc) =	365 days	AT (Nc) =	1,825 days
AT (Car) =	25,550 days	AT (Car) =	25,550 days	AT (Car) =	25,550 days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.

TABLE 11
CALCULATION OF TOTAL NONCARCINOGENIC AND CARCINOGENIC RISKS - SEAD-70
REASONABLE MAXIMUM EXPOSURE (RME)
SENECA ARMY DEPOT ACTIVITY

RECEPTOR	EXPOSURE ROUTE	REASONABLE MAXIMUM EXPOSURE (RME)			
		HAZARD INDEX		CANCER RISK	
		Hazard Index	Percent Contribution	Cancer Risk	Percent Contribution
PARK WORKER	Inhalation of Dust in Ambient Air	9E-02	32%	3E-07	8%
	Ingestion of Soil	1E-01	48%	3E-06	77%
	Intake of Groundwater	5E-02	18%	NA	
	Dermal Contact to Soil	7E-03	2%	6E-07	15%
	Dermal Contact to Groundwater	NA		NA	
	TOTAL RECEPTOR RISK (Nc & Car)	*3E-01*	100%	*4E-06*	100%
CONSTRUCTION WORKER	Inhalation of Dust in Ambient Air	2E-01	19%	2E-08	4%
	Ingestion of Soil	6E-01	71%	6E-07	88%
	Intake of Groundwater	7E-02	8%	NA	
	Dermal Contact to Soil	1E-02	2%	5E-08	8%
	Dermal Contact to Groundwater	1E-04	0%	0E+00	0%
	TOTAL RECEPTOR RISK (Nc & Car)	*8E-01*	100%	*7E-07*	100%
RECREATIONAL CHILD VISITOR	Inhalation of Dust in Ambient Air	3E-02	22%	3E-08	5%
	Ingestion of Soil	1E-01	60%	5E-07	88%
	Intake of Groundwater	3E-02	17%	BA	
	Dermal Contact to Soil	2E-03	1%	4E-08	7%
	Dermal Contact to Groundwater	NA		NA	
	TOTAL RECEPTOR RISK (Nc & Car)	*2E-01*	100%	*5E-07*	100%
RESIDENT (ADULT)	Inhalation of Dust in Ambient Air	4E-01	48%	2E-06	19%
	Ingestion of Soil	3E-01	29%	6E-06	73%
	Intake of Groundwater	2E-01	22%	NA	
	Dermal Contact to Soil	8E-03	1%	7E-07	9%
	Dermal Contact to Groundwater	5E-03	1%	0E+00	0%
	TOTAL RECEPTOR RISK (Nc & Car)	*9E-01*	100%	*8E-06*	100%
RESIDENT (CHILD)	Inhalation of Dust in Ambient Air	9E-01	22%	8E-07	5%
	Ingestion of Soil	2E+00	60%	1E-05	88%
	Intake of Groundwater	7E-01	17%	NA	
	Dermal Contact to Soil	5E-02	1%	1E-06	7%
	Dermal Contact to Groundwater	8E-03	0%	0E+00	0%
	TOTAL RECEPTOR RISK (Nc & Car)	*4E+00*	100%	*2E-05*	100%
RESIDENT (TOTAL)	Inhalation of Dust in Ambient Air			2E-06	10%
	Ingestion of Soil			2E-05	83%
	Intake Groundwater			NA	
	Dermal Contact to Soil			2E-06	8%
	Dermal Contact to Groundwater			0E+00	0%
	TOTAL RECEPTOR CANCER RISK			*2E-05*	100%

NA - Not Applicable

Attachment G

Derivation of EPC in Air for Construction Worker

The EPC in air was calculated based on the soil EPC and PM_{10} concentration. PM_{10} represents smaller particles which can be inhaled (particles larger than 10μm diameter typically cannot enter the narrow airways in the lung). Ambient PM_{10} concentrations for a construction worker were estimated using an emission and dispersion model.

During construction activities, fugitive dusts may be generated from soil by wind erosion, construction vehicle traffic on temporary unpaved roads, excavation, and other construction activities. The dusts would contain the chemicals present in the soil. Construction workers in the construction area would breathe this PM in the ambient air and therefore may be exposed to chemicals in site soils via inhalation. A model presented in the USEPA (2002a) Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites, which evaluates the fugitive dust emission by truck traffic on unpaved roads during construction was used to estimate the EPC in ambient air during the construction. This model was selected as truck traffic on unpaved road is a common activity and occurs frequently at a construction site and therefore is considered a significant mechanism to cause dust. According to USEPA (2002a), "*emissions from truck traffic on unpaved roads, which typically contribute the majority of dust emissions during construction...*". "*In the case of particulate matter, traffic on contaminated unpaved roads typically accounts for the majority of emissions, with wind erosion, excavation soil dumping, dozing, grading, and tilling operations contributing lesser emissions.*" Based on the above discussion, the emissions from truck traffic on unpaved roads were modeled to represent PM_{10} produced by the construction activity.

$$EPC_{air} = EPC_{soil} \times \frac{1}{PEF_{sc}}$$

Where:

EPC_{air} = Exposure Point Concentration of chemicals in air associated with fugitive dust (mg/m^3);
EPC_{soil} = Exposure Point Concentration of chemicals in soil (mg/kg);
PEF_{sc} = Subchronic road particulate emission factor (m^3/kg).

$$PEF_{sc} = Q/C_{sr} \times \frac{1}{F_D} \times \left[\frac{T \times A_R}{556 \times (W/3)^{0.4} \times \frac{365d/yr - p}{365d/yr} \times \sum VKT} \right]$$

Where:

Q/C_{sr} = Inverse of the ratio of the 1-h geometric mean air concentration to the emission flux along a straight road segment bisecting a square site (g/m^2-s per kg/m^3)
F_D = Dispersion correction factor (unitless), 0.185
T = Total time over which construction occurs (s)
A_R = Surface area of contaminated road segment (m^2)
$A_R = L_R x W_R x 0.092903 m^2/ft^2$
L_R = Length of road segment (ft), see Attachment H Table 1 for length

TABLE 1A
EXPOSURE FACTOR ASSUMPTIONS FOR PARK WORKER
Munitions Response
Seneca Army Depot Activity

Scenario Timeframe:	Future
Medium:	Soil
Exposure Medium:	Soil
Exposure Point:	SEAD-46/57/EOD2/EOD3/Grenade Range
Receptor Population:	Park Worker
Receptor Age:	Adult

EXPOSURE ROUTE	PARAMETER CODE	PARAMETER DEFINITION	UNITS	RME VALUE	RME RATIONALE	RME REFERENCE	CT VALUE	CT RATIONALE	CT REFERENCE
Ingestion of Soil	EPC	Soil EPC	mg/kg	Table 2/3	Surface soils.	Table 2/3	Table ?	Surface soils	Table ?
	BW	Body Weight	kg	70	Default value for park worker.	USEPA, 2002.	70	Default value for park worker.	USEPA, 2002.
	IR	Ingestion Rate	mg/day	100	Default value for outdoor worker.	USEPA, 2002.	50	Mean adult soil ingestion rate.	USEPA, 1997.
	FI	Fraction Ingested	unitless	1	Assumng 100% ingestion from site.	BPJ.	1	Assuming 100% ingestion from site.	BPJ.
	EF				Default value for park worker.			Default value for park worker.	
	ED	Exposure Frequency	days/yr	175	Default value for park worker.	USEPA, 2002, 2004.	153	Default value for park worker.	USEPA, 2004.
	CF	Exposure Duration	year	25		USEPA, 2002, 2004.	7		USEPA, 2004.
	AT(Nc)	Conversion Factor	kg/mg	1E-6	25 years.		1E-6	7 years.	
	AT(Cair)	Averaging Time - Nc	days	9,125	70 years, default value for park	USEPA, 2002.	2,555	70 years, default value for park	
		Averaging Time - Car	days	25,550	worker.		25,550	worker.	USEPA, 2002.
Dermal Contact of Soil	EPC	Soil EPC	mg/kg	Table 2/3	Surface soils.	Table 2/3	Table ?	Surface soils.	Table ?
	BW	Body Weight	kg	70	Default value for park worker.	USEPA, 2002.	70	Default value for park worker.	USEPA, 2002.
	SA	Skin Contact Surface Area	cm^2	5,800	Hands, legs, arms, neck, and head	USEPA, 1992.	5,000	Hands, legs, arms, neck, and head	USEPA, 1992.
	AF				exposed, 25% of upper bound body			exposed, 25% of average body skin	
	ABS				skin area of adult.			area of adult.	
	EV	Soil/Skin Adherence Factor	mg/cm^2-event	1	Default value for adherence factor.	USEPA, 2002, 2004.	0.2	Default value for adherence factor.	USEPA, 2004.
	EF		unitless						
	ED	Dermal Absorption Fraction	events/day		Chemical-specific	USEPA, 2004.		Chemical-specific	USEPA, 2004.
	CF	Event Frequency	days/yr	1	Default value for park worker.	USEPA, 2004.	1	Default value for park worker.	USEPA, 2002, 2004.
	AT(Nc)	Exposure Frequency	year	175	Default value for park worker.	USEPA, 2002, 2004.	153	Default value for park worker.	USEPA, 2004.
	AT(Cair)	Exposure Duration	kg/mg	25	Default value for park worker.	USEPA, 2002, 2004.	7	Default value for park worker.	USEPA, 2004.
		Conversion Factor	days	1E-6			1E-6		
		Averaging Time - Nc	days	9,125	25 year.	USEPA, 2002.	2,555	7 years.	
		Averaging Time - Car		25,550	70 years, default value for park worker		25,550	70 years, default value for park worker	USEPA, 2002.

Notes:
RME = Reasonable Maximum Exposure
CT = Central Tendency Exposure

Source References:
- BPJ: Best Professional Judgement.
- USEPA, 1992: Dermal Exposure Assessment, Principles and Applications
- USEPA, 1997: Exposure Factors Handbook
- USEPA, 2002: Supplemental Guidance For Developing Soil Screening Levels For Superfund Sites. December.
- USEPA, 2004: Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment) Final.

Intake Equations

Ingestion Daily Intake (DI) (mg/kg-day) = EPC x IR x EF x ED x CF x FI / (BW x AT)

Dermal DI (mg/kg-day) = EPC x SA x AF x ABS x EV x EF x ED x CF/(BW x AT)

TABLE 1A
EXPOSURE FACTOR ASSUMPTIONS FOR PARK WORKER
Munitions Response
Seneca Army Depot Activity

Scenario Timeframe:	Future
Medium:	Groundwater
Exposure Medium:	Groundwater
Exposure Point:	SEAD-46 and SEAD-57
Receptor Population:	Park Worker
Receptor Age:	Adult

EXPOSURE ROUTE	PARAMETER CODE	PARAMETER DEFINITION	UNITS	RME VALUE	RME RATIONALE	RME REFERENCE	CT VALUE	CT RATIONALE	CT REFERENCE
Intake of Groundwater	EPC	Groundwater EPC	mg/L		Table 3B	Table 3B		Table ?	Table ?
	BW	Body Weight	kg	70	Default value for park worker.	USEPA, 2002.	70	Default value for park worker.	USEPA, 1991.
	IR	Intake Rate	L/day	1	Default intake rate for park worker. Default value for park worker.	USEPA, 1991.	1	Standard occupational ingestion rate Default value for park worker.	USEPA, 1997 & BPJ.
	EF	Exposure Frequency	days/yr	175	Default value for park worker.	USEPA, 2002, 2004.	153	Default value for park worker.	USEPA, 2004.
	ED	Exposure Duration	year	25	25 years.	USEPA, 2002, 2004.	7	7 years.	USEPA, 2004.
	AT(Nc)	Averaging Time - Nc	days	9,125	70 years, default value for park		2,555	70 years, default value for park worker.	
	AT(Cair)	Averaging Time - Car	days	25,550	worker.	USEPA, 2002.	25,550		USEPA, 2002.

Notes:
RME = Reasonable Maximum Exposure
CT = Central Tendency Exposure

Source References:
· BPJ: Best Professional Judgement.
· USEPA, 1991: Human Health Evaluation Manual. OSWER Directive 9285.6-03. Jun 25.
· USEPA, 1997: Exposure Factors Handbook
· USEPA, 2002: Supplemental Guidance For Developing Soil Screening Levels For Superfund Sites. December.
· USEPA, 2004: Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment) Final.

Intake Equation:
Daily Intake (DI) (mg/kg-day) = EPC x IR x EF x ED/(BW x AT)

TABLE 1B
EXPOSURE FACTOR ASSUMPTIONS FOR CONSTRUCTION WORKER
Munitions Response
Seneca Army Depot Activity

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Soil
Exposure Point:	SEAD-46/57/EOD2/EOD3/Grenade Range
Receptor Population:	Construction Worker
Receptor Age:	Adult

EXPOSURE ROUTE	PARAMETER CODE	PARAMETER DEFINITION	UNITS	RME VALUE	RME RATIONALE	RME REFERENCE
Ingestion of Soil	EPC	Soil EPC	mg/kg	Table 2/3	Surface and subsurface soils.	See Table 2/3
	BW	Body Weight	kg	70	Default value for construction worker.	USEPA, 2002.
	IR	Ingestion Rate	mg/day	330	Default value for construction worker.	USEPA, 2002.
	FI	Fraction Ingested	unitless	1	Assuming 100% ingestion from site.	BPJ.
	EF	Exposure Frequency	days/yr	250	Default value for construction worker.	USEPA, 2002.
	ED	Exposure Duration	year	1	Default value for construction worker.	USEPA, 2002.
	CF	Conversion Factor	kg/mg	1E-6		
	AT(Nc)	Averaging Time - Nc	days	365	1 year.	
	AT(Cair)	Averaging Time - Car	days	25,550	70 years, default value for construction worker.	USEPA, 2002.
Dermal Contact of Soil	EPC	Soil EPC	mg/kg	Table 2/3	Surface and subsurface soils.	See Table 2/3
	BW	Body Weight	kg	70	Default value for construction worker.	USEPA, 2002.
	SA	Skin Contact Surface Area	cm^2	3,300	Default value for construction worker.	USEPA, 2002.
	AF	Soil/Skin Adherence Factor	mg/cm^2-event	0.3	Default value for construction worker.	USEPA, 2002.
	ABS	Dermal Absorption Fraction	unitless		Chemical-specific	USEPA, 2004.
	EV	Event Frequency	events/day	1	Default value for construction worker.	USEPA, 2002.
	EF	Exposure Frequency	days/yr	250	Default value for construction worker.	USEPA, 2002.
	ED	Exposure Duration	year	1	Default value for construction worker.	USEPA, 2002.
	CF	Conversion Factor	kg/mg	1E-6		
	AT(Nc)	Averaging Time - Nc	days	365	1 year.	
	AT(Cair)	Averaging Time - Car	days	25,550	70 years, default value for construction worker.	USEPA, 2002.

Notes:
RME = Reasonable Maximum Exposure

Intake Equations:
Ingestion **Daily Intake (DI) (mg/kg-day) = EPC x IR x EF x ED x CF x FI / (BW x AT)**
Dermal **DI (mg/kg-day) = EPC x SA x AF x ABS x EV x EF x ED x CF/(BW x AT)**

Source References:

- BPJ: Best Professional Judgement.
- USEPA, 2002: Supplemental Guidance For Developing Soil Screening Levels For Superfund Sites. December.
- USEPA, 2004: Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment) Final.

TABLE 1B
EXPOSURE FACTOR ASSUMPTIONS FOR CONSTRUCTION WORKER
Munitions Response
Seneca Army Depot Activity

Scenario Timeframe:	Future
Medium:	Groundwater
Exposure Medium:	Groundwater
Exposure Point:	SEAD-46 and SEAD-57
Receptor Population:	Construction Worker
Receptor Age:	Adult

EXPOSURE ROUTE	PARAMETER CODE	PARAMETER DEFINITION	UNITS	RME VALUE	RME RATIONALE	RME REFERENCE
Intake of Groundwater	EPC	Groundwater EPC	mg/L		Table 3B	Table 3B
	BW	Body Weight	kg	70	Default value for park worker.	USEPA, 2002
	IR	Intake Rate	L/day	1	Default intake rate for park worker. Default value for park worker.	USEPA, 1991.
	EF	Exposure Frequency	days/yr	250	Default value for park worker.	USEPA, 2002, 2004.
	ED	Exposure Duration	year	1	25 years.	USEPA, 2002, 2004.
	AT(Nc)	Averaging Time - Nc	days	365	70 years, default value for park worker	
	AT(Cair)	Averaging Time - Car	days	25,550		USEPA, 2002.
Dermal of Groundwater	EPC	Groundwater EPC	mg/L		Table 3B	Table 3B
	BW	Body Weight	kg	70	Default value for construction worker.	USEPA, 2002
	SA	Skin Surface Area	cm^2	2,490	Maximum surface area for adult male (including hands and forearms).	USEPA, 1997
	ED	Exposure Duration	years	1	Default value for construction worker.	USEPA, 2002, 2004.
	EF	Exposure Frequency	days/yr	100	Assumes contact with groundwater 2 workdays each week for 50 weeks.	BPJ
	EV	Event Frequency	events/day	1	Assumption.	BPJ.
	t_{event}	Event duration (hr/event)	hr/event	0.5	Assumes half hour to assemble or disassemble a pumping system.	BPJ.
	AT(Nc)	Averaging Time - Nc	days	365	1 year.	
	AT(Cair)	Averaging Time - Car	days	25,550	70 years, default value for construction worker.	USEPA, 2002.

Notes:
RME = Reasonable Maximum Exposure

Intake Equation:
Ingestion **Daily Intake (DI) (mg/kg-day) = EPC x IR x EF x ED/(BW x AT)**
Dermal **Dermal Absorbed Dose (DAD) (mg/kg-day) = (DA_{event} x EV x ED x EF x SA) / (BW x AT)**

For Inorganics, $DA_{event} = K_p \times EPC \times t_{event}$

For Organics, If $t_{event} <= t^*$, then: $DA_{event} = 2\ FA \times K_p \times EPC\ (\ (6\ \tau_{event} \times t_{event}) / \pi\ )^{1/2}$

if $t_{event} > t^*$, then: $DA_{event} = FA \times K_p \times EPC\ [\ (t_{event} / 1 + B) + 2\ \tau_{event}\ (\ (1 + 3\ B + 3\ B^2) / (1 + B)^2\ )\ ]$

Where:

$t^* = Time\ \ to\ \ reach\ \ steady\ -\ state\ \ (hr)$

$\tau_{event} = Lag\ \ Time\ \ per\ \ event (hr/event)$

B = Dimensionless ratio of the permeability coefficient of a compound through the stratum corneum relative to its permeability coefficient across the viable epidermis (ve) (dimensionless)
FA = Fraction absorbed water (dimensionless)

Source References:

BPJ: Best Professional Judgement
USEPA, 1991: Human Health Evaluation Manual. OSWER Directive 9285.6-03. Jun 25.
USEPA, 1997: Exposure Factors Handbook
USEPA, 2002: Supplemental Guidance For Developing Soil Screening Levels For Superfund Sites. December.
USEPA, 2004: Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment) Final.

TABLE 1C
EXPOSURE FACTOR ASSUMPTIONS FOR RECREATIONAL CHILD VISITOR
Munitions Response
Seneca Army Depot Activity

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Soil
Exposure Point:	SEAD-46/57/EOD2/EOD3/Grenade Range
Receptor Population:	Recreational Child Visitor
Receptor Age:	Child (1-10 yr)

EXPOSURE ROUTE	PARAMETER CODE	PARAMETER DEFINITION	UNITS	RME VALUE	RME RATIONALE	RME REFERENCE
Ingestion of Soil	EPC	Soil EPC	mg/kg	Table 2/3	Surface soils.	See Table 2/3
Soil	BW	Body Weight	kg	15	Average weight for child (Exhibit 1-2).	USEPA, 2002.
	IR	Ingestion Rate	mg/day	200	Max soil ingestion rate for child.	USEPA, 2002.
	FI	Fraction Ingested	unitless	1	Assuming 100% ingestion from site.	BPJ.
	EF	Exposure Frequency	days/yr	14	Assumption.	BPJ.
	ED	Exposure Duration	year	5	Assumption.	BPJ.
	CF	Conversion Factor	kg/mg	1.E-06		
	AT(Nc)	Averaging Time - Nc	days	1,825	5 years.	
	AT(Car)	Averaging Time - Car	days	25,550	70 years, default value for human life span.	USEPA, 2002.
Dermal Contact	EPC	Soil EPC	mg/kg	Table 2/3	Surface soils.	See Table 2/3
of Soil	BW	Body Weight	kg	15	Average weight for child (Exhibit 1-2).	USEPA, 2002.
	SA	Skin Contact Surface Area	cm^2	2,800	Default value for child	USEPA, 2002.
	AF	Soil/Skin Adherence Factor	mg/cm^2-event	0.2	Default value for child.	USEPA, 2002.
	ABS	Dermal Absorption Fraction	unitless		Chemical-specific	USEPA, 2004.
	EV	Event Frequency	events/day	1	Default value for residential child.	USEPA, 2004.
	EF	Exposure Frequency	days/yr	14	Assumption.	BPJ.
	ED	Exposure Duration	year	5	Assumption.	BPJ.
	CF	Conversion Factor	kg/mg	1E-06		
	AT(Nc)	Averaging Time - Nc	days	1,825	5 years.	
	AT(Car)	Averaging Time - Car	days	25,550	70 years, default value for human life span.	USEPA, 2002.

Notes:
RME = Reasonable Maximum Exposure

Source References:
- BPJ: Best Professional Judgment.
- USEPA, 1997: Exposure Factors Handbook
- USEPA, 2002: Supplemental Guidance For Developing Soil Screening Levels For Superfund Sites. December.
- USEPA, 2004: Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment) Final.

Intake Equations:

Ingestion	Daily Intake (DI) (mg/kg-day) = EPC x IR x EF x ED x CF x FI / (BW x AT)
Dermal	DI (mg/kg-day) = EPC x SA x AF x ABS x EV x EF x ED x CF/(BW x AT)

TABLE 1C
EXPOSURE FACTOR ASSUMPTIONS FOR RECREATIONAL CHILD VISITOR
Munitions Response
Seneca Army Depot Activity

Scenario Timeframe:	Current/Future
Medium:	Groundwater
Exposure Medium:	Groundwater
Exposure Point:	SEAD-46 and SEAD-57
Receptor Population:	Recreational Child Visitor
Receptor Age:	Child (1-10 yr)

EXPOSURE ROUTE	PARAMETER CODE	PARAMETER DEFINITION	UNITS	RME VALUE	RME RATIONALE	RME REFERENCE
Intake of Groundwater	EPC	Groundwater EPC	mg/L	Table 3B	See Table 3B	See Table 3B
	BW	Body Weight	kg	15	Average weight for child (Exhibit 1-2).	USEPA, 2002.
	IR	Intake Rate	L/day	1.5	95th percentile for children ages 1-10 yr.	USEPA, 1997.
	EF	Exposure Frequency	days/yr	14	Assumption.	BPJ.
	ED	Exposure Duration	year	5	Assumption.	BPJ.
	AT(Nc)	Averaging Time - Nc	days	1,825	5 years.	
	AT(Car)	Averaging Time - Car	days	25,550	70 years, default value for human life span.	USEPA, 2002.
Dermal Contact of Groundwater	EPC	Groundwater EPC	mg/L	Table 3B	See Table 3B	See Table 3B
	Kp	Permeability Constant	cm/hr		Chemical-specific.	USEPA, 2004.
	BW	Body Weight	kg	15	Default value for child (ages 0-6r).	USEPA, 2002.
	SA	Skin Contact Surface Area	cm^2	6,600	Default RME for child showering/bathing.	USEPA, 2004.
	EV	Event Frequency	events/day	1	Default RME for child showering/bathing.	USEPA, 2004.
	t_{event}	Event Duration	hr/event	1.0	Default RME for child showering/bathing.	USEPA, 2004.
	EF	Exposure Frequency	days/yr	350	Default exposure frequency for residential receptor.	USEPA, 2004, 2002.
	ED	Exposure Duration	year	6	Default exposure duration. 6 years.	USEPA, 2002.
	AT(Nc)	Averaging Time - Nc	days	2,190	70 years, default value for human life span.	USEPA, 2002.
	AT(Cair)	Averaging Time - Car	days	25,550		

Notes:
RME = Reasonable Maximum Exposure

Source References:
- BPJ: Best Professional Judgment.
- USEPA, 1997: Exposure Factors Handbook
- USEPA, 2002: Supplemental Guidance For Developing Soil Screening Levels For Superfund Sites. December.
- USEPA, 2004: Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment) Final.

Intake Equation:

Intake: Daily Intake (DI) (mg/kg-day) = EPC x IR x EF x ED/(BW x AT)

Dermal: DI (mg/kg-day) = DA_{event} x EV x EF x ED x SA/(BW x AT)

Where: DA_{event} = Absorbed dose per event (mg/cm^2-event)

For organic compounds:

$$If\ t_{event} \le t^*, then DA_{event} = 2FAK_p \times EPC\sqrt{\frac{6\tau_{event} t_{event}}{\pi}}$$

$$If\ t_{event} > t^*, then DA_{event} = FAK_p \times EPC\left[\frac{t_{event}}{1+B} + 2\tau_{event}\left(\frac{1+3B+3B^2}{(1+B)^2}\right)\right]$$

Where:

$t^* = Time\ to\ reach\ steady\text{-}state (hr)$

$\tau_{event} = Lag\ \ Time\ \ per\ \ event (hr/event)$

B = Dimensionless ratio of the permeability coefficient of a compound through the stratum corneum relative

TABLE 1D
EXPOSURE FACTOR ASSUMPTIONS FOR RESIDENTIAL ADULT
Munitions Response
Seneca Army Depot Activity

Scenario Timeframe:	Future
Medium:	Soil
Exposure Medium:	Soil
Exposure Point:	SEAD-46/57/EOD2/EOD3/Grenade Range
Receptor Population:	Residential Adult
Receptor Age:	Adult

EXPOSURE ROUTE	PARAMETER CODE	PARAMETER DEFINITION	UNITS	RME VALUE	RME RATIONALE	RME REFERENCE	CT VALUE	CT RATIONALE	CT REFERENCE
Ingestion of Soil	EPC	Soil EPC	mg/kg	Table 2/3	See Table 2/3	See Table 2/3	Table ?	See Table ?	See Table ?
	BW	Body Weight	kg	70	Default value for adult.	USEPA, 2002.	70	Default value for adult.	USEPA, 2002.
	IR	Ingestion Rate	mg/day	100	Default soil ingestion rate for residential adult.	USEPA, 2002.	50	Central estimate of adult soil ingestion.	USEPA, 1997.
	FI	Fraction Ingested	unitless	1	Assuming 100% ingestion from site.	BPJ.	1	Assuming 100% ingestion from site.	BPJ.
	EF	Exposure Frequency	days/yr	350	Default exposure frequency for residential receptor.	USEPA, 2004, 2002.	350	Default exposure frequency for residential receptor.	USEPA, 2002, 2004.
	ED	Exposure Duration	year	24	Default RME exposure duration.	USEPA, 2002.	9	Default CT exposure duration.	USEPA, 2004.
	CF	Conversion Factor	kg/mg	1E-6			1E-6		
	AT(Nc)	Averaging Time - Nc	days	8,760	24 years.		3,285	9 years.	
	AT(Cair)	Averaging Time - Car	days	25,550	70 years, default value for human life span.	USEPA, 2002.	25,550	70 years, default value for human life span.	USEPA, 2002.
Dermal Contact of Soil	EPC	Soil EPC	mg/kg	Table 2/3	See Table 2/3	See Table 2/3	Table ?	See Table ?	See Table ?
	BW	Body Weight	kg	70	Default value for adult.	USEPA, 2002.	70	Default value for adult.	USEPA, 2002.
	SA	Skin Contact Surface Area	cm^2	5,700	Default value for adult.	USEPA, 2004.	5,700	Default value for adult.	USEPA, 2004.
	AF	Soil/Skin Adherence Factor	mg/cm^2-event	0.07	Default RME for adult.	USEPA, 2004.	0.01	Default CT value for adult.	USEPA, 2004.
	ABS	Dermal Absorption Fraction	unitless		Chemical-specific	USEPA, 2004.		Chemical-specific	USEPA, 2004.
	EV	Event Frequency	events/day	1	Default value for residential receptor.	USEPA, 2004.	1	Default value for residential receptor.	USEPA, 2004.
	EF	Exposure Frequency	days/yr	350	Default exposure frequency for residential receptor.	USEPA, 2004, 2002.	350	Default exposure frequency for residential receptor.	USEPA, 2004, 2002.
	ED	Exposure Duration	year	24	Default RME exposure duration.	USEPA, 2004.	9	Default CT exposure duration.	USEPA, 2004.
	CF	Conversion Factor	kg/mg	1E-6			1E-6		
	AT(Nc)	Averaging Time - Nc	days	8,760	24 years.		3,285	9 years.	
	AT(Cair)	Averaging Time - Car	days	25,550	70 years, default value for human life span.	USEPA, 2002.	25,550	70 years, default value for human life span.	USEPA, 2002.

Notes:
RME = Reasonable Maximum Exposure
CT = Central Tendency Exposure

Source References:
- BPJ: Best Professional Judgment.
- USEPA, 1997: Exposure Factors Handbook
- USEPA, 2002: Supplemental Guidance For Developing Soil Screening Levels For Superfund Sites. December.
- USEPA, 2004: Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment) Final.

Intake Equations:
Ingestion Daily Intake (DI) (mg/kg-day) = EPC x IR x EF x ED x CF x FI / (BW x AT)
Dermal DI (mg/kg-day) = EPC x SA x AF x ABS x EV x EF x ED x CF/(BW x AT)

TABLE 1D
EXPOSURE FACTOR ASSUMPTIONS FOR RESIDENTIAL ADULT
Munitions Response
Seneca Army Depot Activity

Scenario Timeframe:	Future
Medium:	Groundwater
Exposure Medium:	Groundwater
Exposure Point:	SEAD-46 and SEAD-57
Receptor Population:	Residential Adult
Receptor Age:	Adult

EXPOSURE ROUTE	PARAMETER CODE	PARAMETER DEFINITION	UNITS	RME VALUE	RME RATIONALE	RME REFERENCE	CT VALUE	CT RATIONALE	CT REFERENCE
Intake of Groundwater	EPC	Groundwater EPC	mg/L	Table 3B	See Table 3B	See Table 3B	Table ?	See Table ?.	See Table ?.
	BW	Body Weight	kg	70	Default value for adult.	USEPA, 2002.	70	Default value for adult.	USEPA, 2002.
	IR	Intake Rate	L/day	2	Default value for adult.	USEPA, 2002.	1.41	Recommended average tapwater intake.	USEPA, 1997.
	EF	Exposure Frequency	days/yr	350	Default exposure frequency for residential receptor.	USEPA, 2004, 2002.	350	Default exposure frequency for residential receptor.	USEPA, 2004, 2002.
	ED	Exposure Duration	year	24	Default RME exposure duration.	USEPA, 2002.	9	Default CT exposure duration.	USEPA, 2002.
	AT(Nc)	Averaging Time - Nc	days	8,760	24 years.		3,285	9 years.	
	AT(Cair)	Averaging Time - Car	days	25,550	70 years, default value for human life span.	USEPA, 2002.	25,550	70 years, default value for human life span.	USEPA, 2002.
Dermal Contact of Groundwater	EPC	Groundwater EPC	mg/L	Table 3B	See Table 3B	See Table 3B	Table ?	See Table ?.	See Table ?.
	Kp	Permeability Constant	cm/hr		Chemical-specific.	USEPA, 2004.		Chemical-specific.	USEPA, 2004.
	BW	Body Weight	kg	70	Default value for adult.	USEPA, 2002.	70	Default value for adult.	USEPA, 2002.
	SA	Skin Contact Surface Area	cm^2	18,000	Default RME for adult showering/bathing.	USEPA, 2004.	18,000	Default CT for adult showering/bathing.	USEPA, 2004.
	EV	Event Frequency	events/day	1	Default RME for adult showering/bathing.	USEPA, 2004.	1	Default CT for adult showering/bathing.	USEPA, 2004.
	t_{event}	Event Duration	hr/event	0.58	Default RME for adult showering/bathing.	USEPA, 2004.	0.25	Default CT for adult showering/bathing.	USEPA, 2004.
	EF	Exposure Frequency	days/yr	350	Default exposure frequency for residential receptor.	USEPA, 2004, 2002.	350	Default exposure frequency for residential receptor.	USEPA, 2004, 2002.
	ED	Exposure Duration	year	24	Default RME exposure duration.	USEPA, 2002.	9	Default CT exposure duration.	USEPA, 2002.
	AT(Nc)	Averaging Time - Nc	days	8,760	24 years.		3,285	9 years.	
	AT(Cair)	Averaging Time - Car	days	25,550	70 years, default value for human life span.	USEPA, 2002.	25,550	70 years, default value for human life span.	USEPA, 2002.
Inhalation of Groundwater	EPC	Air EPC	mg/m^3	Table 3B	See Table 3B	See Table 3B	Table ?	See Table ?.	See Table ?.
	BW	Body Weight	kg	70	Default value for adult.	USEPA, 2002.	70	Default value for adult.	USEPA, 2002.
	IR	Inhalation Rate	m^3/hr	1.0	Average rate for light activities.	USEPA, 1997.	1.0	Average rate for light activities.	USEPA, 1997.
	EV	Event Frequency	event/day	1	Default RME for adult showering/bathing.	USEPA, 2004.	1	Default CT for adult showering/bathing.	USEPA, 2004.
	t_{event}	Event Duration	hr/event	0.58	Default RME for adult showering/bathing.	USEPA, 2004.	0.25	Default CT for adult showering/bathing.	USEPA, 2004.
	EF	Exposure Frequency	days/yr	350	Default exposure frequency for residential receptor.	USEPA, 2004, 2002.	350	Default exposure frequency for residential receptor.	USEPA, 2004, 2002.
	ED	Exposure Duration	year	24	Default RME exposure duration.	USEPA, 2002.	9	Default CT exposure duration.	USEPA, 2002.
	AT(Nc)	Averaging Time - Nc	days	8,760	24 years.		3,285	9 years.	
	AT(Cair)	Averaging Time - Car	days	25,550	70 years, default value for human life span.	USEPA, 2002.	25,550	70 years, default value for human life span.	USEPA, 2002.

TABLE 1E
EXPOSURE FACTOR ASSUMPTIONS FOR RESIDENTIAL CHILD
Munitions Response
Seneca Army Depot Activity

Scenario Timeframe:	Future
Medium:	Soil
Exposure Medium:	Soil
Exposure Point:	SEAD-46/57/EOD2/EOD3/Grenade Range
Receptor Population:	Residential Child
Receptor Age:	Child (0-6 yr)

EXPOSURE ROUTE	PARAMETER CODE	PARAMETER DEFINITION	UNITS	RME VALUE	RME RATIONALE	RME REFERENCE	CT VALUE	CT RATIONALE	CT REFERENCE
Ingestion of Soil	EPC	Soil EPC	mg/kg	Table 2/3	See Table 2/3	See Table 2/3	Table ?	See Table ?	Table ?
	BW	Body Weight	kg	15	Default value for child (ages 0-6yr).	USEPA, 2002.	15	Default value for child.	USEPA, 2002.
	IR	Ingestion Rate	mg/day	200	Default soil ingestion rate for child.	USEPA, 2002.	100	Mean soil ingestion rate for child.	USEPA, 1997.
	FI	Fraction Ingested	unitless	1	Assuming 100% ingestion from site.	BPJ.	1	Assuming 100% ingestion from site.	BPJ.
	EF	Exposure Frequency	days/yr	350	Default exposure frequency for residential receptor.	USEPA, 2004, 2002. USEPA, 2002.	350	Default exposure frequency for residential receptor.	USEPA, 2002, 2004.
	ED	Exposure Duration	year	6	Default exposure duration.		6	Default exposure duration.	USEPA, 2002.
	CF	Conversion Factor	kg/mg	1E-6			1E-6		
	AT(Nc)	Averaging Time - Nc	days	2,190	6 years.	USEPA, 2002.	2,190	6 years.	
	AT(Cair)	Averaging Time - Car	days	25,550	70 years, default value for human life span.		25,550	70 years, default value for human life span.	USEPA, 2002.
Dermal Contact of Soil	EPC	Soil EPC	mg/kg	Table 2/3	See Table 2/3	See Table 2/3	Table ?	See Table ?	Table ?
	BW	Body Weight	kg	15	Default value for child.	USEPA, 2002.	15	Default value for child.	USEPA, 2002.
	SA	Skin Contact Surface Area	cm^2	2,800	Default value for child.	USEPA, 2002, 2004.	2,800	Default value for child.	USEPA, 2004.
	AF	Soil/Skin Adherence Factor	mg/cm^2-event	0.2	Default RME value for child.	USEPA, 2002, 2004.	0.04	Default CT value for child.	USEPA, 2004.
	ABS	Dermal Absorption Fraction	unitless		Chemical-specific	USEPA, 2004.		Chemical-specific	USEPA, 2004.
	EV	Event Frequency	events/day	1	Default value for residential child.	USEPA, 2004, 2002.	1	Default value for residential child.	USEPA, 2004
	EF	Exposure Frequency	days/yr	350	Default exposure frequency for residential receptor.	USEPA, 2004, 2002.	350	Default exposure frequency for residential receptor.	USEPA, 2002, 2004.
	ED	Exposure Duration	year	6	Default exposure duration.	USEPA, 2002.	6	Default exposure duration.	USEPA, 2002.
	CF	Conversion Factor	kg/mg	1E-6			1E-6		
	AT(Nc)	Averaging Time - Nc	days	2,190	6 year.		2,190	6 years.	
	AT(Cair)	Averaging Time - Car	days	25,550	70 years, default value for human life span.	USEPA, 2002.	25,550	70 years, default value for human life span.	USEPA, 2002.

Notes:
RME = Reasonable Maximum Exposure
CT = Central Tendency Exposure

Source References:
- BPJ: Best Professional Judgment.
- USEPA, 1997: Exposure Factors Handbook
- USEPA, 2002: Supplemental Guidance For Developing Soil Screening Levels For Superfund Sites. December.
- USEPA, 2004: Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment) Final.

Intake Equations:
Ingestion Daily Intake (DI) (mg/kg-day) = EPC x IR x EF x ED x CF x FI / (BW x AT)
Dermal DI (mg/kg-day) = EPC x SA x AF x ABS x EV x EF x ED x CF/(BW x AT)

TABLE 1E
EXPOSURE FACTOR ASSUMPTIONS FOR RESIDENTIAL CHILD
Munitions Response
Seneca Army Depot Activity

Scenario Timeframe:	Future
Medium:	Groundwater
Exposure Medium:	Groundwater
Exposure Point:	SEAD-46 and SEAD-57
Receptor Population:	Residential Child
Receptor Age:	Child

EXPOSURE ROUTE	PARAMETER CODE	PARAMETER DEFINITION	UNITS	RME VALUE	RME RATIONALE	RME REFERENCE	CT VALUE	CT RATIONALE	CT REFERENCE
Intake of Groundwater	EPC	Groundwater EPC	mg/L	Table 3B	See Table 3B	See Table 3B	Table ?	See Table ?.	See Table ?.
	BW	Body Weight	kg	15	Default value for child (ages 0-6r).	USEPA, 2002.	15	Default value for child ages (0-6yr).	USEPA, 2002.
	IR	Intake Rate	L/day	1.5	95th percentile for children ages 1-10 yr.	USEPA, 1997.	0.74	Average for children ages 1-10 yr.	USEPA, 1997.
	EF	Exposure Frequency	days/yr	350	Default exposure frequency for residential receptor.	USEPA, 2004, 2002.	350	Default exposure frequency for residential receptor.	USEPA, 2002.
	ED	Exposure Duration	year	6	Default exposure duration.	USEPA, 2002.	6	Default exposure duration.	USEPA, 2002.
	AT(Nc)	Averaging Time - Nc	days	2,190	6 years.		2,190	6 years.	
	AT(Cair)	Averaging Time - Car	days	25,550	70 years, default value for human life span.	USEPA, 2002.	25,550	70 years, default value for human life span.	USEPA, 2002.
Dermal Contact of Groundwater	EPC	Groundwater EPC	mg/L	Table 3B	See Table 3B	See Table 3B	Table ?	See Table ?.	See Table ?.
	Kp	Permeability Constant	cm/hr		Chemical-specific.	USEPA, 2004.		Chemical-specific.	USEPA, 2004.
	BW	Body Weight	kg	15	Default value for child (ages 0-6r).	USEPA, 2002.	15	Default value for child ages (0-6yr).	USEPA, 2002.
	SA	Skin Contact Surface Area	cm^2	6,600	Default RME for child showering/bathing.	USEPA, 2004.	6,600	Default CT for child showering/bathing.	USEPA, 2004.
	EV	Event Frequency	events/day	1	Default RME for child showering/bathing.	USEPA, 2004.	1	Default CT for child showering/bathing.	USEPA, 2004.
	t_{event}	Event Duration	hr/event	1.0	Default RME for child showering/bathing.	USEPA, 2004.	0.33	Default CT for child showering/bathing.	USEPA, 2004.
	EF	Exposure Frequency	days/yr	350	Default exposure frequency for residential receptor.	USEPA, 2004, 2002.	350	Default exposure frequency for residential receptor.	USEPA, 2002, 2004.
	ED	Exposure Duration	year	6	Default exposure duration.	USEPA, 2002.	6	Default exposure duration.	USEPA, 2002.
	AT(Nc)	Averaging Time - Nc	days	2,190	6 years.		2,190	6 years.	
	AT(Cair)	Averaging Time - Car	days	25,550	70 years, default value for human life span.	USEPA, 2002.	25,550	70 years, default value for human life span.	USEPA, 2002.
Inhalation of Groundwater	EPC	Air EPC	mg/m3	Table 3B	See Table 3B	See Table 3B	Table ?	See Table ?.	See Table ?.
	BW	Body Weight	kg	15	Default value for child ages 0-6yr.	USEPA, 2002.	15	Default value for child ages 0-6yr.	USEPA, 2002.
	IR	Inhalation Rate	m^3/hr	1.0	Average inhalation rate for children with light activities.	USEPA, 1997.	1.0	Average inhalation rate for children with light activities.	USEPA, 1997.
	EV	Event Frequency	event/day	1	Default RME for child showering/bathing.	USEPA, 2004.	1	Default CT value for child	USEPA, 2004.
	t_{event}	Event Duration	hr/event	1.0	Default RME for child showering/bathing.	USEPA, 2004.	0.33	showering/bathing.	USEPA, 2004.
	EF	Exposure Frequency	days/yr	350	Default exposure frequency for residential receptor.	USEPA, 2004, 2002.	350	Default CT value for child showering/bathing.	USEPA, 2004, 2002.
	ED	Exposure Duration	year	6	Default exposure duration.	USEPA, 2002.	6	Default exposure frequency for residential receptor.	USEPA, 2002.
	AT(Nc)	Averaging Time - Nc	days	2,190	6 years.		2,190		
	AT(Cair)	Averaging Time - Car	days	25,550	70 years, default value for human life span.	USEPA, 2002.	25,550	Default exposure duration. 6 years.	USEPA, 2002.

TABLE 2A
NON-CANCER TOXICITY DATA -- ORAL/DERMAL
MUNITIONS RESPONSE

Chemical of Potential Concern	CAS Number	Chronic/ Subchronic	Oral RfD Value	Oral RfD Units	Oral to Dermal Adjustment Factor (1)	Adjusted Dermal RfD (2)	Units	Primary Target Organ	Combined Uncertainty/Modifying Factors	Sources of RfD: Target Organ	Dates of RfD: Target Organ (3) (MM/DD/YY)
Methyl cyclohexane	108-87-2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benzo(a)anthracene	56-55-3	N/A	N/A	N/A	1	N/A	N/A	N/A	N/A	N/A	N/A
Benzo(a)pyrene	50-32-8	N/A	N/A	N/A	1	N/A	N/A	N/A	N/A	N/A	N/A
Benzo(b)fluoranthene	205-99-2	N/A	N/A	N/A	1	N/A	N/A	N/A	N/A	N/A	N/A
Benzo(ghi)perylene	191-24-2	N/A	N/A	N/A	1	N/A	N/A	N/A	N/A	N/A	N/A
Benzo(k)fluoranthene	207-08-9	N/A	N/A	N/A	1	N/A	N/A	N/A	N/A	N/A	N/A
Bis(2-Ethylhexyl)phthalate	117-81-7	Chronic	2.00E-02	mg/kg-day	1	2.0E-02	mg/kg-day	Liver	1000	IRIS	7/30/2009
Chrysene	218-01-9	N/A	3.E-04	mg/kg-day	1	3.0E-04	mg/kg-day	N/A	N/A	N/A	N/A
Dibenz(a,h)anthracene	53-70-3	N/A	N/A	N/A	1	N/A	N/A	N/A	N/A	N/A	N/A
Dibenzofuran	132-64-9	N/A	N/A	N/A	1	N/A	N/A	N/A	N/A	N/A	N/A
Di-n-octylphthalate	117-84-0	N/A	N/A	N/A	1	N/A	N/A	N/A	N/A	N/A	N/A
Indeno(1,2,3-cd)pyrene	193-39-5	N/A	N/A	N/A	1	N/A	N/A	N/A	N/A	N/A	N/A
Phenanthrene	85-01-2	N/A	N/A	N/A	1	N/A	N/A	N/A	N/A	N/A	N/A
Phenol	108-95-2	Chronic	3E-01	mg/kg-day	1	3.0E-01	mg/kg-day	Developmental	300	IRIS	7/21/2009
Dieldrin	60-57-1	Chronic	5.E-05	mg/kg-day	1	5.0E-05	mg/kg-day	Liver	100	IRIS	7/21/2009
Endosulfan I	115-29-7	Chronic	6.00E-03	mg/kg-day	1	6.0E-03	mg/kg-day	Body weight	100	IRIS	7/21/2009
Endosulfan II	891-86-1	Chronic	6.00E-03	mg/kg-day	1	6.0E-03	mg/kg-day	Body weight	100	IRIS	7/21/2009
Endrin aldehyde	7421-93-4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Endrin Ketone	53494-70-5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Heptachlor	76-44-8	Chronic	5.00E-04	mg/kg-day	1	5.0E-04	mg/kg-day	Liver	300	IRIS	7/21/2009
Heptachlor Epoxide	1024-57-3	Chronic	1.30E-05	mg/kg-day	1	1.3E-05	mg/kg-day	Liver	1000	IRIS	7/21/2009
Aluminum	7429-90-5	Chronic	1.0E+00	mg/kg-day	1	1.0E+00	mg/kg-day	N/A	N/A	NCEA	8/26/1996
Antimony	7440-36-0	Chronic	4E-04	mg/kg-day	0.15	6E-05	mg/kg-day	Whole Body Blood	1000	IRIS	8/16/2007
Arsenic	7440-38-2	Chronic	3E-04	mg/kg-day	1	3E-04	mg/kg-day	Skin	3	IRIS	8/16/2007
Cadmium	7440-43-9	Chronic	5E-04	mg/kg-day	0.025	5.0E-04	mg/kg-day	Kidney	10	IRIS	7/21/2009
Cadmium (food)	7440-43-9	Chronic	1E-03	mg/kg-day	0.025	1.0E-03	mg/kg-day	Kidney	N/A	N/A	N/A
Chromium (VI)	18540-29-9	Chronic	3E-03	mg/kg-day	0.025	8E-05	mg/kg-day	Weight, Blood, and Other Tissues	900	IRIS	8/16/2007
Cobalt	7440-48-4	Chronic	3E-04	mg/kg-day	1	3.0E-04	mg/kg-day	N/A	N/A	NCEA	4E+04
Copper	7440-50-8	Chronic	4E-02	mg/kg-day	1	4E-02	mg/kg-day	Liver, Kidney	N/A	USEPA MCL	2/28/2007
Iron	7439-89-6	Chronic	3E-01	mg/kg-day	1	3E-01	mg/kg-day	N/A	1	NCEA	07/23/96
Lead	7439-92-1	N/A	NA	N/A	0.15	N/A	N/A	N/A	N/A	N/A	N/A
Magnesium	7439-95-4	N/A	N/A	N/A	1	N/A	N/A	N/A	N/A	N/A	N/A
Manganese	7439-96-5	Chronic	2.4E-02	mg/kg-day	0.04	1E-03	mg/kg-day	Central Nervous System	3	IRIS	8/16/2007

TABLE 2B
NON-CANCER TOXICITY DATA -- INHALATION
MUNITIONS RESPONSE

Chemical of Potential Concern	CAS Number	Chronic/ Subchronic	Value Inhalation RfC	Units	Adjusted Inhalation RfD (1)	Units	Primary Target Organ	Combined Uncertainty/Modifying Factors	Sources of RfC:RfD: Target Organ	Dates (2) (MM/DD/YY)
Methyl cyclohexane	108-87-2	Chronic	3.0	mg/m^3	8.57E-01	mg/kg-day	Kidney	100	OERL	8/3/2009
Benzo(a)anthracene	56-55-3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benzo(a)pyrene	50-32-8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benzo(b)fluoranthene	205-99-2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benzo(ghi)perylene	191-24-2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benzo(k)fluoranthene	207-08-9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bis(2-Ethylhexyl)phthalate	117-81-7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chrysene	218-01-9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dibenz(a,h)anthracene	53-70-3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dibenzofuran	132-64-9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Di-n-octylphthalate	117-84-0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Indeno(1,2,3-cd)pyrene	193-39-5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Phenanthrene	85-01-2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Phenol	108-95-2	Chronic	2.00E-01	mg/m^3	5.71E-02	mg/kg-day	N/A	N/A	NCEA	4/1/2009
Dieldrin	60-57-1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Endosulfan I	115-29-7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Endosulfan II	891-86-1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Endrin aldehyde	7421-93-4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Endrin Ketone	53494-70-5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Heptachlor	76-44-8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Heptachlor Epoxide	1024-57-3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Aluminum	7429-90-5	Chronic	5E-03	mg/m^3	1.43E-03	mg/kg-day	N/A	N/A	NCEA	6/20/1997
Antimony	7440-36-0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Arsenic	7440-38-2	Chronic	1.50E-05	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Cadmium	7440-43-9	Chronic	1.00E-05	mg/m^3	2.86E-06	mg/kg-day	N/A	N/A	NCEA	4/1/2009
Chromium (VI)	18540-29-9	Chronic	1E-04	mg/m^3	3E-05	mg/kg-day	Respiratory System	300	IRIS	7/21/2009
Cobalt	7440-48-4	Chronic	6E-06	mg/m^3	1.71E-06	mg/kg-day	N/A	N/A	NCEA	4/1/2009
Copper	7440-50-8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Iron	7439-89-6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Lead	7439-92-1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Magnesium	7439-95-4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Manganese	7439-96-5	Chronic	5E-05	mg/m^3	1E-05	mg/kg-day	Central Nervous System	1000	IRIS	8/16/2007
Selenium	7782-49-2	Chronic	2.00E-02	mg/m^3	6E-03	mg/kg-day	N/A	N/A	NCEA	7/30/2009
Silver	7440-22-4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Thallium	7440-28-0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Vanadium	7440-62-2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Notes:

(1) Inhalation RfD was adjusted based on the assumption of 70 kg body weight and 20 m^3/day inhalation rate.

(2) For IRIS values, the date was the last time IRIS was checked.

For PPRTV values, the date was the date of the Region III RBC table, where the PPRTV was cited from.

N/A = Not Applicable

IRIS = Integrated Risk Information System

PPRTV = EPA's Provisional Peer Reviewed Toxicity Values

TABLE 2C
CANCER TOXICITY DATA -- ORAL/DERMAL
MUNITIONS RESPONSE

Chemical of Potential Concern	CAS Number	Oral Cancer Slope Factor	Oral Cancer Slope Factor Source	Oral to Dermal Adjustment Factor (1)	Adjusted Dermal Cancer Slope Factor (2)	Units	Weight of Evidence/ Cancer Guideline Description	Weight of Evidence Source	Date (3) (MM/DD/YY)
Methyl cyclohexane	108-87-2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benzo(a)anthracene	56-55-3	0.73	NCEA	1	0.73	$(mg/kg\text{-}day)^{-1}$	B2	IRIS	8/16/2007
Benzo(a)pyrene	50-32-8	7.3	IRIS	1	7.3	$(mg/kg\text{-}day)^{-1}$	B2	IRIS	8/16/2007
Benzo(b)fluoranthene	205-99-2	0.73	NCEA	1	0.73	$(mg/kg\text{-}day)^{-1}$	B2	IRIS	8/16/2007
Benzo(ghi)perylene	191-24-2	N/A	N/A	1	N/A	N/A	D	IRIS	7/21/2009
Benzo(k)fluoranthene	207-08-9	0.073	NCEA	1	0.073	$(mg/kg\text{-}day)^{-1}$	B2	IRIS	8/16/2007
Bis(2-Ethylhexyl)phthalate	117-81-7	1.40E-02	IRIS	1	0.014	$(mg/kg\text{-}day)^{-1}$	B2	IRIS	7/30/2009
Chrysene	218-01-9	0.0073	NCEA	1	0.0073	$(mg/kg\text{-}day)^{-1}$	B2	IRIS	8/16/2007
Dibenz(a,h)anthracene	53-70-3	7.3	NCEA	1	7.3	$(mg/kg\text{-}day)^{-1}$	B2	IRIS	8/16/2007
Dibenzofuran	132-64-9	N/A	N/A	N/A	N/A	N/A	D	IRIS	7/21/2009
Di-n-octylphthalate	117-84-0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Indeno(1,2,3-cd)pyrene	193-39-5	0.73	NCEA	1	0.73	$(mg/kg\text{-}day)^{-1}$	B2	IRIS	8/16/2007
Phenanthrene	85-01-2	N/A	N/A	1	N/A	N/A	D	IRIS	7/21/2009
Phenol	108-95-2	3.00E-01	IRIS	1	3.00E-01	$(mg/kg\text{-}day)^{-1}$	D	IRIS	7/21/2009
Dieldrin	60-57-1	16	IRIS	1	16	$(mg/kg\text{-}day)^{-1}$	B2	IRIS	7/21/2009
Endosulfan I	115-29-7	N/A	N/A	N/A	N/A	N/A	D	IRIS	7/21/2009
Endosulfan II	891-86-1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Endrin aldehyde	7421-93-4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Endrin Ketone	53494-70-5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Heptachlor	76-44-8	4.5	IRIS	1	4.5	$(mg/kg\text{-}day)^{-1}$	B2	IRIS	7/21/2009
Heptachlor Epoxide	1024-57-3	9.1	IRIS	1	9.1	$(mg/kg\text{-}day)^{-1}$	B2	IRIS	7/21/2009
Aluminum	7429-90-5	N/A	N/A	N/A	N/A	N/A	D	NCEA	6/20/1997
Antimony	7440-36-0	N/A	N/A	0.15	N/A	N/A	N/A	N/A	N/A
Arsenic	7440-38-2	1.5	IRIS	1	1.5	$(mg/kg\text{-}day)^{-1}$	A	IRIS	8/16/2007
Cadmium	7440-43-9	N/A	N/A	N/A	N/A	N/A	B1	IRIS	2/13/2006
Chromium (VI)	18540-29-9	N/A	N/A	N/A	N/A	N/A	D	IRIS	8/16/2007
Cobalt	7440-48-4	N/A	N/A	N/A	N/A	N/A	B1	IRIS	8/3/2009
Copper	7440-50-8	N/A	N/A	N/A	N/A	N/A	D	IRIS	7/21/2009
Iron	7439-89-6	N/A	N/A	1	N/A	N/A	N/A	N/A	N/A
Lead	7439-92-1	N/A	N/A	N/A	N/A	N/A	B2	IRIS	08/03/09
Magnesium	7439-95-4	N/A	N/A	1	N/A	N/A	N/A	N/A	N/A
Manganese	7439-96-5	N/A	N/A	0.04	N/A	N/A	D	N/A	N/A
Selenium	7782-49-2	N/A	N/A	N/A	N/A	N/A	D	IRIS	7/30/2009
Silver	7440-22-4	N/A	N/A	N/A	N/A	N/A	D	IRIS	7/30/2009

TABLE 2D
CANCER TOXICITY DATA -- INHALATION
MUNITIONS RESPONSE

Chemical of Potential Concern	CAS Number	Unit Risk	Units	Unit Risk Source	Adjustment (1)	Inhalation Cancer Slope Factor	Units	Weight of Evidence/ Cancer Guideline Description	Weight of Evidence Source	Date (2) (MM/DD/YY)
Methyl cyclohexane	108-87-2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benzo(a)anthracene	56-55-3	N/A	N/A	N/A	N/A	N/A	N/A	B2	IRIS	8/16/2007
Benzo(a)pyrene	50-32-8	1.1E-03	$(ug/m^3)^{-1}$	NCEA	3500	3.85	(ug/m3)-1	B2	NCEA	4/1/2009
Benzo(b)fluoranthene	205-99-2	1.10E-04	$(ug/m^3)^{-1}$	NCEA	3500	0.385	(ug/m3)-1	B2	NCEA	4/1/2009
Benzo(ghi)perylene	191-24-2	N/A	N/A	N/A	N/A	N/A	N/A	D	IRIS	7/21/2009
Benzo(k)fluoranthene	207-08-9	1.10E-04	$(ug/m^3)^{-1}$	NCEA	3500	0.385	(ug/m3)-1	B2	NCEA	4/1/2009
Bis(2-Ethylhexyl)phthalate	117-81-7	N/A	N/A	N/A	N/A	N/A	N/A	B2	IRIS	7/30/2009
Chrysene	218-01-9	1.10E-05	$(ug/m^3)^{-1}$	NCEA	3500	0.0385	(ug/m3)-1	B2	NCEA	4/1/2009
Dibenz(a,h)anthracene	53-70-3	0.0012	$(ug/m^3)^{-1}$	NCEA	3500	4.2	(ug/m3)-1	B2	NCEA	4/1/2009
Dibenzofuran	132-64-9	N/A	N/A	N/A	N/A	N/A	N/A	D	IRIS	7/21/2009
Di-n-octylphthalate	117-84-0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Indeno(1,2,3-cd)pyrene	193-39-5	0.00011	$(ug/m^3)^{-1}$	NCEA	3500	0.385	(ug/m3)-1	B2	NCEA	4/1/2009
Phenanthrene	85-01-2	N/A	N/A	N/A	N/A	N/A	N/A	D	IRIS	7/21/2009
Phenol	108-95-2	N/A	N/A	N/A	N/A	N/A	N/A	D	IRIS	7/21/2009
Dieldrin	60-57-1	4.60E-03	$(ug/m^3)^{-1}$	IRIS	3500	16.1	(ug/m3)-1	B2	IRIS	7/21/2009
Endosulfan I	115-29-7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Endosulfan II	891-86-1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Endrin aldehyde	7421-93-4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Endrin Ketone	53494-70-5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Heptachlor	76-44-8	1.30E-03	$(ug/m^3)^{-1}$	IRIS	3500	4.55	(ug/m3)-1	B2	IRIS	7/21/2009
Heptachlor Epoxide	1024-57-3	2.60E-03	$(ug/m^3)^{-1}$	IRIS	3500	9.1	(ug/m3)-1	B2	IRIS	7/21/2009
Aluminum	7429-90-5	N/A	N/A	N/A	N/A	N/A	N/A	D	NCEA	6/20/1997
Antimony	7440-36-0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Arsenic	7440-38-2	4.3E-03	$(ug/m^3)^{-1}$	IRIS	3500	15.05	(ug/m3)-1	A	IRIS	8/16/2007
Cadmium	7440-43-9	1.8E-03	$(ug/m^3)^{-1}$	IRIS	3500	6.3	(ug/m3)-1	B1	IRIS	7/21/2009
Chromium (VI)	18540-29-9	1.2E-02	$(ug/m^3)^{-1}$	IRIS	3500	42	(ug/m3)-1	A	IRIS	8/16/2007
Cobalt	7440-48-4	9.0E-03	$(ug/m^3)^{-1}$	NCEA	3500	31.5	(ug/m3)-1	B1	NCEA	8/3/2009
Copper	7440-50-8	N/A	N/A	N/A	N/A	N/A	N/A	D	IRIS	7/21/2009
Iron	7439-89-6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Lead	7439-92-1	N/A	N/A	N/A	N/A	N/A	N/A	B2	IRIS	08/03/09
Magnesium	7439-95-4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Manganese	7439-96-5	N/A	N/A	N/A	N/A	N/A	N/A	D	IRIS	8/16/2007
Selenium	7782-49-2	N/A	N/A	N/A	N/A	N/A	N/A	D	IRIS	7/30/2009
Silver	7440-22-4	N/A	N/A	N/A	N/A	N/A	N/A	D	IRIS	7/30/2009
Thallium	7440-28-0	N/A	N/A	N/A	N/A	N/A	N/A	D	IRIS	8/16/2007
Vanadium	7440-62-2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

IRIS = Integrated Risk Information System
HEAST= Health Effects Assessment Summary Table
NCEA = National Center for Environmental Assessmen

Notes:

(1) The adjustment was based on a 70 kg body weight and 20 m^3/day inhalation rate.
(2) For IRIS values, the date was the last time IRIS was checked. For NCEA values the date was the date of the Region III RBC, where the NCEA was cited from

EPA Group:
A - Human carcinoger
B1 - Probable human carcinogen - indicates that limited human data are availabl
B2 - Probable human carcinogen - indicates sufficient evidence in animals and inadequate or no evidence in humans
C - Possible human carcinogen
D - Not classifiable as a human carcinoger
E - Evidence of noncarcinogenicity