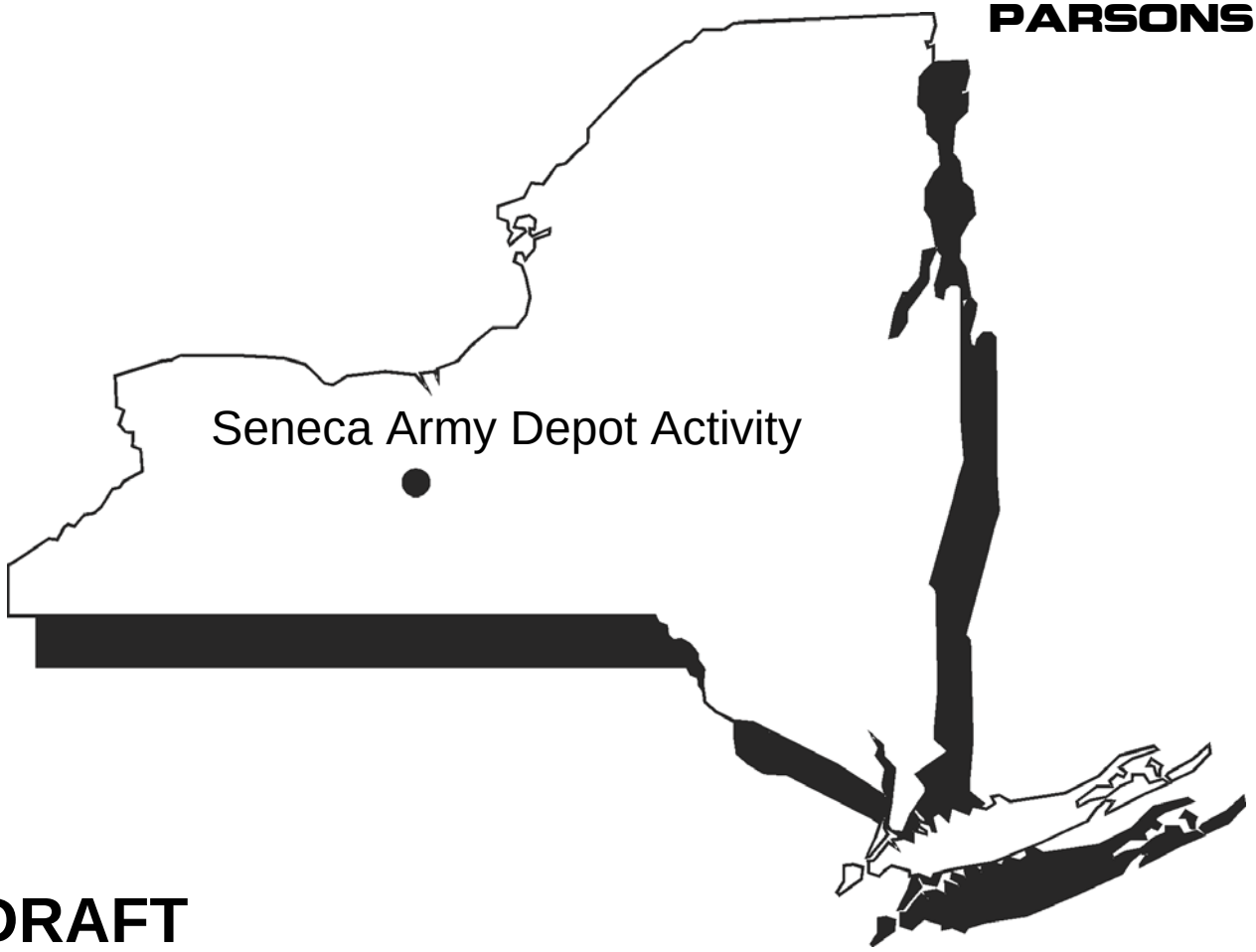
US Army, Engineering & Support Center
Huntsville, AL

Seneca Army Depot Activity
Romulus, NY

PARSONS



DRAFT

PROPOSED PLAN
NO FURTHER ACTION FOR SWMUs
SEAD-52, 63, 64B AND 64D

SENECA ARMY DEPOT ACTIVITY (SEDA)

EPA Site ID# NY0213820830
NY Site ID# 8-50-006
CONTRACT NO. DACA87-02-D-0005
DELIVERY ORDER NO. 0026

June 2005

##

Proposed Plan – Draft

No Further Action for SWMUs SEAD-52, 63, 64B and 64D at the
SENECA ARMY DEPOT ACTIVITY (SEDA)
Romulus, New York

June 2005

##

1 PURPOSE OF PROPOSED PLAN

This Proposed Plan presents and summarizes data and information that the United States Army (Army) has assembled in support of its assertion that four solid waste management units (SWMUs), designated as SEADs-52,-63, -64B, and -64D, within the Seneca Army Depot Activity (SEDA or the Depot) require No Further Action (NFA) because threats to human health or the environment resulting from petroleum products and hazardous materials do not exist. The Proposed Plan identifies the Army's and the U.S. Environmental Protection Agency's (USEPA's) preferred and recommended remedial option (No Further Action) for the four SWMUs, and provides the justification and rationale for its recommended alternative at each SWMU. Representatives of the Army developed the Proposed Plan in cooperation with the USEPA, Region II and the New York State Department of Environmental Conservation (NYSDEC).

The Army is issuing this Proposed Plan as part of its public participation responsibilities under Section 117(a) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or Superfund) of 1980, as amended, and Section 300.430(f) of the National Contingency Plan (NCP). This Proposed Plan is being provided to inform the public of the Army's preferred and recommended remedial alternative. The Proposed Plan is intended to solicit public review and comment of available information and data and to specify the Army's preferred remedial option for the four SWMUs. The Army's preferred remedy for SEADs-52, -63, -64B and -64D is No Further Action. Information, provided herein, was presented to and discussed with representatives of USEPA and NYSDEC and serves as the basis of the Army identifying these SWMUs as requiring No Further Action.

This Proposed Plan identifies the preferred remedy and presents the reasons for this preference. The Army will select a final remedy for the SWMUs only after careful consideration of all comments received during the public comment period, and subsequent to final consultation with the USEPA and NYSDEC.

2 COMMUNITY ROLE IN THE SELECTION PROCESS

The Army, the USEPA, and the NYSDEC rely on public input to ensure that the concerns of the

community are considered in selecting an effective remedy for each Superfund site. A public comment period has been set from {DATE} through {DATE} to provide an opportunity for public participation in the remedy selection process for SEAD-52, -63, -64B, and -64D. A public meeting is scheduled for {DATE} at the {LOCATION} beginning at {TIME}.

At the public meeting, the results of the investigations and the remedial actions (RAs) conducted at the SWMUs (as applicable) will be presented. The Army will also provide a summary of the preferred remedy for each SWMU. During the presentation, the Army invites the public to participate in a question-and-answer period, during which time the public can ask questions or submit written comments on the Proposed Plan.

Verbal and written comments received from the public during the public meeting will be documented in the Responsiveness Summary section of the Record of Decision (ROD) document. The ROD formalizes the selection of the remedy.

Written comments may be sent to:
Mr. Stephen Absolom
BRAC Environmental Coordinator
Building 123
5786 State Route 96
PO Box 9
Seneca Army Depot Activity
Romulus, New York 14541-0009

Information and data summarized within this Proposed Plan for each of the four SWMUs is presented and described in greater detail within the "Decision Document – Mini Risk Assessment (SEAD-9, 27, 28, 32, 33, 34, 43, 44A, 44B, 52, 56, 58, 62, 64A, 64B, 64C, 64D, 66, 68, 69, 72, and 120B)" (Parsons, 2001); the "Action Memorandum for the Miscellaneous Components Burial Site (SEAD-63)" (Parsons, 2001); and the "Non-Time Critical Removal Action Miscellaneous Components Burial Site (SEAD-63)" (Plexus, 2005); which should be reviewed and consulted.

The public is encouraged to schedule a time to review the project documents at the SEDA repository (location provided below) to develop a better understanding of each of the listed SWMUs and the investigations and studies that have been conducted.

Seneca Army Depot Activity
Building 123
5786 State Route 96
Romulus, New York 14541-0009
(607) 869-1309
Hours: Mon – Thurs. 8:30 a.m. – 2:30 p.m.

3 SITE BACKGROUND

The SEDA previously occupied approximately 10,600 acres of land located near the Village of Romulus in Seneca County, New York. The former military facility was owned by the U.S. Government and operated by the Army between 1941 and approximately 2000, when the SEDA military mission ceased. The SEDA's historic military mission included receipt, storage, distribution, maintenance, and demilitarization of conventional ammunition, explosives and special weapons.

The SEDA is located in an uplands area which forms a divide separating two of the New York Finger Lakes, Cayuga Lake on the east and Seneca Lake on the west. The elevation of the facility is approximately 600 feet (ft) above Mean Sea Level (MSL).

On July 14, 1989, the USEPA proposed the SEDA for inclusion on the National Priorities List (NPL). Supporting its recommendation for listing, the USEPA stated "the Army identified a number of potentially contaminated areas, including an unlined 13-acre landfill in the west-central portion of the depot, where solid waste and incinerator ash were disposed of intermittently for 30 years during 1941-79; two incinerator pits adjacent to the landfill, where refuse was burned at least once a week during 1941-74; a 90-acre open burning/detonation area in the

northwest portion of the depot, where explosives and related wastes have been burned and detonated during the past 30 years; and the Army Peculiar Equipment (APE)-1236 Deactivation Furnace in the east-central portion of the depot, where small arms are destroyed."[1] The USEPA recommendation was approved and finalized on August 30, 1990, when the SEDA was listed in Group 14 of the Federal Facilities portion of the NPL.

Once the SEDA was listed on the NPL, the Army, the USEPA, and NYSDEC identified 57 SWMUs where historic data or information suggested, or evidence existed to support, that hazardous materials or hazardous wastes had been handled and may have been released and migrated into the environment. Each of these sites was identified in the "Federal Facilities Agreement" (FFA) signed by the three parties in 1993 (USEPA, NYSDEC, and Army, 1993). This list was subsequently expanded to include 72 sites when the Army completed the "SWMU Classification Report, *Final*" (Parsons, 1994), which was required under the terms of the FFA. The SEDA was a generator and Treatment, Storage and Disposal Facility (TSDF) and thus subject to regulation under the Resource Conservation and Recovery Act (RCRA). Under this permit system, corrective action is required at all SWMUs, as needed.

Remedial goals are the same for CERCLA and RCRA; thus when the 72 SWMUs were classified in the "SWMU Classification Report, *Final*" (Parsons, 1994), the Army recommended that they be listed either as areas requiring No Action or as Areas of Concern (AOCs). SWMUs listed as AOCs in the "SWMU Classification Report, *Final*" (Parsons, 1994) were scheduled for further investigations based upon data and potential risks to the environment.

In 1995, the SEDA was designated for closure under the Department of Defense's (DoD's) Base Realignment and Closure (BRAC) process. With the SEDA's inclusion on the BRAC list, the Army's emphasis expanded from expediting necessary investigations and remedial actions at prioritized sites to include the release of non-affected portions of the Depot to the surrounding community for their reuse for non-military purposes (i.e., industrial, municipal, and residential) (**Figure 1**).

Since the inclusion of the SEDA in the BRAC program, approximately 8,000 acres have been released to the community. An additional 250 acres of land have undergone a federal-to-federal transfer for continued use by the U.S. Coast Guard.

4 SITE DESCRIPTIONS

4.1 SEAD-52: Ammunition Breakdown Area

SEAD-52 is located in the southeastern portion of the SEDA (**Figure 2**). The area is characterized by developed and undeveloped land. East and west of the SWMU are grassy fields with some sparse brush. Brady Road bisects the area running from north to south.

SEAD-52 was active from the mid 1950s to the late 1990s. The area consists of four buildings, Buildings 608, 610, 611 and 612. Building 608 was previously used for the storage of ammunition magazines; Building 610 was used for ammunition powder collection; Building 611 was used for storage of equipment, paints, and solvents; and Building 612 was used for the breakdown and maintenance of ammunition. None of these buildings are currently active or used for storage of materials. SEDA railroad tracks enter the area from the northwest and divide into two spurs that provide access to the western side of Building 609 and the northern side of Building 612. There are paved access routes to Buildings 608, 610, and 611 and paved access routes on all sides of Building 612.

The topography of SEAD-52 is relatively flat with the area to the west of Brady Road sloping gently to the

[1] Superfund NPL Assessment Program Database, Seneca Army Depot, Romulus, New York, http:/www.epa.gov/superfund/sites/npl/nar1249.htm.

west from a topographic high that is located at Building 612. Numerous drainage ditches are located to the west, north, and south of Building 612. Four ditches are located west of the building. One ditch directs runoff flow to the north where it intersects an east-west trending drainage ditch. Another ditch directs flow southwest and two ditches direct flow to the west. A fifth ditch is located south of Building 612 and it channels runoff flow to the south where it parallels Brady Road. The area to the east of Brady Road also slopes gently to the west. A north-south trending drainage ditch is located east of Buildings 608, 610, and 611. Another drainage ditch parallels the east side of Brady Road and flows south.

4.2 SEAD-63: Miscellaneous Components Burial Site

SEAD-63 was approximately 480 by 300 ft and is bound by paved roads on the north, south, and west and by open grassland to the east (**Figure 3**). The area was mostly undeveloped except for a grass-covered bunker in the southeast corner and an elevated former machine-gun turret constructed of soil in the northwest corner. Previously, a noticeable feature within the area was a crushed shale road that entered from Patrol Road and led to a crushed shale pad that measured about 100 by 100 ft. In general, the western half of the area was less vegetated than the eastern side and appeared to have been physically worn by vehicular traffic. Many of these prior features were disturbed or obliterated during the removal action, completed in 2004.

SEAD-63 was used during the 1950s and 1960s as a disposal area for classified parts. Multiple disposal pits were excavated along a north-south line approximately 200 ft long. The individual pits measured between 10 and 30 ft in length and were likely to have been excavated down to the surface of the underlying weathered shale bedrock. SEDA personnel associated with the SWMU prior to the termination of SEDA's military mission previously identified the types of materials disposed at this site as metal parts. The SWMU Classification Report states that "inert materials" were buried within the disposal pits.

Currently, the topography of SEAD-63 is generally flat with a slight westward slope. Drainage ditches are located adjacent to Patrol Road and the east-west trending roads that bound the area to the north (i.e., Service Road 3) and south (unnamed road). A light ground depression, sloping south to north, is located in the northeastern quadrant of the area. The path of Reeder Creek is located southeast, south, west, and northwest of SEAD-63, with the closest point of the creek being approximately 1500 ft southwest of the location. Water in Reeder Creek flows from the southeast and south to the northwest of SEAD-63, before it turns to the west where it eventually flows into Seneca Lake.

4.3 SEAD-64B: Garbage Disposal Area

The disposal area at SEAD-64B was located immediately north of Ovid Road near Building 2086 in the southern end of SEDA (**Figure 2**). Previously, the location was characterized by undeveloped land that was bounded by Ovid Road on the south, an unnamed paved road on the west, an intermittent stream and several sets of SEDA railroad tracks to the north, and undeveloped land with dense vegetation and deciduous trees to the east. Two large piles were observed located along the northern boundary of SEAD-64B.

SEAD-64B was used for garbage disposal during the time period from 1974 to 1979, which corresponds to a period when the Depot's solid waste incinerator was not in operation. It appears that one or two truck loads of household waste was disposed at SEAD 64B based on size of the fill area and amount of debris observed.

The local topography of SEAD-64B is somewhat uneven, but generally slopes to the south-southwest. The intermittent stream flows west along the west-sloping regional features.

4.4 SEAD-64D: Garbage Disposal Area

SEAD-64D covered an area located between West Patrol Road and the SEDA railroad tracks that are located to the west along North-South Baseline Road in the southwestern portion of SEDA (**Figure 2**). The SWMU stretches for approximately 2,700 ft along the straight portion of West Patrol Road and is approximately 1,200 ft wide extending east from West Patrol Road. Firebreaks are cut into the dense vegetation in the area and trend east-west and north-south.

Portions of SEAD-64D were used for garbage disposal from 1974 to 1979 when the SEDA solid waste incinerator was not in operation. The type of waste disposed at SEAD 64D is primarily household waste, although according to information contained in the SWMU Classification Report (Parsons, 1995) and conditions observed during test pitting, construction debris was also disposed of at SEAD-64D. Based on the size of the area and the volume of waste estimated to be present, this area was used intermittently for disposal during the referenced period (i.e., 1974 – 1979).

Several discrete disposal areas were developed at SEAD-64D and today, these areas can be identified by the surface expression of metal objects and other forms of debris. The majority of the identified disposal areas were located in the southern, south-central and east-central portions of SEAD-64D. An elongated east-west trending mound (approximately 75 ft long), that is located in the southern portion of the SWMU, is reported to contain trash and assorted debris. Immediately to the north and east of this elongated mound are three 25-foot to 30-foot diameter depressions that are 2 to 4 ft in depth, which were areas excavated to provide adequate cover material.

The topography of SEAD-64D slopes to the west. The regular west-sloping topography is interrupted in the south-central portion of the site by an eroded stream bed that traverses the south-central portion of the area. The intermittent stream flows west toward low areas that are located to the east of West Patrol Road. These low areas parallel to West Patrol Road are believed to collect much of the surface water run-off from the SWMU.

5 SITE INVESTIGATIONS AND STUDIES

5.1 SEAD-52: Ammunition Breakdown Area

The investigative work at SEAD-52 included a Limited Sampling Program that was focused on soil sampling that was performed in 1993, which was followed by a mini risk assessment[2] that was finalized in 2002. Complete analytical results from both investigations are presented in *Decision Document – Mini Risk Assessment SEAD 9, 27, 28, 32, 33, 34, 43, 44A, 44B, 52, 56, 58, 62, 64A, 64B, 64C, 64D, 66, 68, 69, 70, and 120B*, Parsons 2002. Data from the investigation served as the basis of a mini-risk assessment that was performed to assess potential risks. The results of the mini-risk assessment are summarized below. A brief synopsis of the investigations performed is presented later in this section, following the evaluation of the mini-risk assessment.

Mini Risk Assessment

The cancer and non-cancer risks for potential future receptors and exposure routes were evaluated during a mini-risk assessment for SEAD-52 conducted in 2001 and 2002. The mini risk assessment evaluated five receptors (prison inmate, prison worker, construction worker, day care center child, and day care center adult) and three exposure routes (inhalation of dust, ingestion of onsite soils, and dermal contact to onsite soils).

[2] A mini-risk assessment is a conservative screening risk assessment tool. Due to the conservative nature of a mini-risk assessment, it is likely that a more traditional risk assessment would estimate lower risks.

The total cancer risk from all exposure routes was calculated to be within or below the USEPA acceptable limits for all five receptors (cancer risk of 10^{-4} to 10^{-6} or less). In addition, the total non-cancer hazard index (HI) from all exposure routes was less than 1.0, the USEPA acceptable limit for non-hazard risks, for all five receptors. A summary of the risk assessment results is presented in **Table 1** of this report.

Supporting Investigations and Analysis

A Limited Sampling Program was performed in 1993 to evaluate the presence of explosives in the soil at SEAD-52. Eighteen surface soil samples were collected from a depth of 0 to 2 inches below ground surface (bgs) and the samples were chemically analyzed for explosives by USEPA Method 8330.

The results of the investigation indicate that the three explosive compounds were detected in one or more of the collected soil samples. The compound, 2,4-dinitrotoluene, was detected in ten of the surface soil samples. Surface soil samples collected from the buildings on the east side of Brady Road, were generally free of all explosive compounds, with the exception of two samples which contained 2,4-dinitrotoluene.

All but two of the surface soil samples collected around Building 612 contained explosive compounds. The compound 2,4-dinitrotoluene was most frequently detected (found in ten of the 18 samples) and ranged in Concentrations measured for 2,4-dinitrotoluene, the most frequently detected compound, ranged from estimated levels of 91 to 2,100 micrograms per kilogram (ug/Kg J). The other two explosives found were detected in one or two soil samples around Building 612. No New York State Technical and Administrative Guidance Memorandum (TAGM) soil cleanup objective criteria are available for the explosive compounds detected. Results of the soil results are summarized in **Table 2** of this report.

5.2 SEAD 63: Miscellaneous Components Burial Site

Work performed at SEAD-63 included an expanded site investigation (ESI) in 1994, followed by a remedial investigation (RI) in 1997. Activities performed during the ESI included test pit excavation and sampling (soil, sediment, surface water, and groundwater) and chemical analysis activities. The RI activities included additional sediment and surface water sampling and chemical analysis activities, as well as a radiological survey. Data from the ESI and RI were used as the basis of a mini risk assessment that was conducted for the site in 2001 and 2002. Findings of the investigations and the mini-risk assessment were reported in an Engineering Evaluation/Cost Analysis (EE/CA) and an Action Memorandum in which the Army recommended the performance of a non-time critical removal action (NTCRA). The goals for the proposed NTCRA were to mitigate the source of heavy metals and possible radionuclides through the removal of debris and soils, thereby reducing the chance of further possible degradations of soils and groundwater at SEAD-63. The Army made this recommendation even though the findings of the mini-risk assessment did not indicate a human health risk based on the data obtained during the investigations. However, the Army acknowledged that the presence of buried objects, including some buried components that may have been classified or sensitive, were of potential concern since their nature was unknown. The uncertainty of the nature of the buried material and their potential sensitivity provided the basis of the planned removal action. The NTCRA was conducted in 2004. Results of the investigations, risk assessment, and removal action are presented below. Complete analytical results are presented in *SEAD-63 Final Action Memorandum,* Parsons 2000; and *Non-Time Critical Removal Action Miscellaneous Components Burial Site (SEAD-63),* Plexus, 2005.

None-Time Critical Removal Action

The NCTRA was conducted in 2004 to remove buried debris (mainly military components) and to address cadmium exceedances identified within the burial pits at SEAD 63. As part of the removal action, groundwater samples were collected at several overburden monitoring wells on-site; debris and fill material was excavated from the burial pits until native soil was reached; excavated soil was analyzed; and the limits of the excavation areas were sampled and analyzed to ensure project cleanup goals were met.

Soil

The SEAD-63 burial pits were excavated until either native soil or bedrock was observed, as determined by visual inspection. The excavated debris and soil totaling over 5,125 tons was segregated into 4-inch plus (~985 tons) or 4-inch minus (~4,140 tons) material. No radiological sources were identified, and on-site radiological screening and laboratory analyses of the excavated and segregated materials confirmed its classification as non-radioactive, non-RCRA hazardous solid waste.

After the excavation and removal activities were completed, soil confirmation samples were collected from the perimeter and bottom of the excavation and sent to a laboratory for analysis of cadmium. Samples were collected at a rate of one sample per 900 square feet (ft^2) at the bottom of the excavation and one sample per 30 linear ft along the excavation sidewalls. Results were compared to the proposed site cleanup goal of 2.3 mg/Kg of cadmium. Confirmation soil sample results were below the site cleanup goal.

All excavated pits were backfilled to original grade with clean soil from the SEDA once results were obtained from the laboratory to confirm that the cleanup goal had been achieved.

Groundwater

The three existing overburden monitoring wells located at SEAD-63 were resampled during the NTCRA. Low–flow sampling techniques were used during the NTCRA to minimize suspended solids in the groundwater. The groundwater samples were submitted for laboratory radioactivity analysis and compared to NYSDEC AWQS; one sample upgradient of SEAD-63 was collected as a background, or reference, point. The groundwater analytical results were below water quality criteria and the background results for radioactivity, and it was concluded that groundwater is not impacted by the site and does not need further monitoring or testing.

Mini Risk Assessment

The cancer and non-cancer risks for potential future receptors and exposure routes were evaluated during a mini-risk assessment for SEAD-63 that was performed in 2001. The mini-risk assessment evaluated three receptors (park worker, construction worker, and recreational visitor – child) that are associated with the site's identified future use. The human health risk resulting from the exposure of each receptor to soil, sediment, surface water (where applicable) and groundwater (where applicable) was determined. The risk calculated for the recreational child, park worker, and construction worker were all found to be acceptable (HI less than 1.0 and carcinogenic risk less than 1×10^{-4}).

A summary of the risk assessment results is presented in **Table 3** of this report.

Site Investigations (ESI and RI)

Soil

Twelve test pits were excavated in SEAD-63 as part of the ESI. The excavated material from the test pits included miscellaneous military components and was continuously screened for organic vapors and

radioactivity. No readings above background levels were observed during the excavations.

The soil analysis results from the test pits indicated that soils were impacted by cadmium in several areas at SEAD-63. Cadmium concentrations in three test pit samples exceeded the TAGM cleanup objective of 2.3 milligrams per kilogram (mg/Kg) by as mush as an order of magnitude. Mercury was detected in one test pit sample (TP63-3) at a concentration of 0.49 mg/Kg, exceeding the TAGM cleanup objective of 0.1 mg/Kg. The average concentrations of both cadmium and mercury in SEAD-63 soils exceeded twice the average background concentration for the Depot.

Groundwater

Three monitoring wells were installed and sampled at SEAD-63 during the ESI. Radioactivity analysis results indicated that the groundwater in MW63-3 (located hydraulically downgradient of the disposal pits) may be impacted by gross alpha and gross beta radiation. The level of gross alpha radiation in this well was an order of magnitude above the NYS Ambient Water Quality Standards (AWQS) Class GA and federal drinking water criteria.

In addition, gross alpha radiation levels exceeded the NYS AWQS in MW63-1, the background location for the purpose of the ESI. Gross beta radiation levels detected in the groundwater samples collected from groundwater monitoring wells MW63-3 and MW63-1 may be similarly impacted, though the elevated gross beta radiation levels may be due to the high nephelometric turbidity units (NTUs) of those groundwater samples. The NYS AWQS for gross beta radiation was not exceeded.

Other constituents detected include phenol, iron and manganese, all above their respective criteria values.

Surface Water/Sediment

Four surface water and sediment samples were collected during the ESI and 18 surface water and sediment samples were collected during the RI.

Results of the investigations indicate that surface water at SEAD-63 has been impacted by semi-volatile organic compounds (SVOCs). Two SVOCs were detected at levels exceeding the NYS AWQS. In addition, five metals were detected above their respective NYS AWQS.

Radionuclides present in background surface water locations were detected in the surface waters at SEAD-63. In addition, Co-60, Ra-226, Th-230, and U-233/234 were also detected at SEAD-63. The maximum and average values of the radionuclides detected at SEAD-63 were greater than the maximum and average concentrations found in the background. Gross alpha and gross beta levels were significantly greater at SEAD-63 in at least one surface water location (SW63-2) than at background locations; however, the elevated levels at SW63-2 are believed to be associated with the high turbidity of this sample. Statistical comparison of the SEAD-63 and background data sets indicates that Ac-227, Radon 222, tritium, U-235, and U-238 are elevated above background.

Sediment sample results indicated that sediments at SEAD-63 had been impacted by polycyclic aromatic hydrocarbons (PAHs, also polynuclear aromatic hydrocarbons) and pesticides at concentrations of two to three times the respective NYSDEC guidance values. In addition, four metals were detected at concentrations at least twice their respective guidance values.

All radionuclides detected at SEAD-63, except for Pb-210, were also found in background sediment samples collected. Although the maximum values detected in the SEAD-63 samples exceeded the maximum values of the background samples, average values were comparable. In comparison to

the NYSDEC TAGM Cleanup Guideline for Soils Contaminated with Radioactive Material (NYSDEC, 1993), radionuclides distinguishable from background in the sediment do not exhibit a dose equivalent greater than the ten milliRems per year (mrem/yr) cleanup guideline based on residual radioactive (RESRAD) modeling.

Radiological Survey

A radiological survey was conducted at SEAD-63 as part of the 1997 RI. The survey was conducted using a PDR-77 Radiac Set and measured total counts per minute of low energy gamma radiation from the grounds of SEAD-63. Fifty percent of the grounds were covered by the survey as outlined in the RI Project Scoping Plan for SEAD-63. The results of this survey did not indicate that there were any hot spot areas within the grounds of SEAD-63 that required further investigation or an upgrade in classification.

5.3 SEAD-64B: Garbage Disposal Area

The investigative work at SEAD-64B included an Expanded Site Inspection performed in 1994 followed by a mini-risk assessment in 2001/2002. Complete analytical results from the investigation and risk assessment are presented in *Decision Document – Mini Risk Assessment SEAD 9, 27, 28, 32, 33, 34, 43, 44A, 44B, 52, 56, 58, 62, 64A, 64B, 64C, 64D, 66, 68, 69, 70, and 120B*, Parsons 2002. Data from the investigations served as the basis of a mini-risk assessment that was performed to assess potential risks. The results of the mini-risk assessment are summarized below. A brief synopsis of the investigations conducted is presented later in this section, following the evaluation of the risk assessment.

Mini Risk Assessment

The cancer and non-cancer risks for all future potential receptors (park worker, recreational visitor – child, and construction worker) and exposure routes (inhalation of dust, ingestion of soil, and dermal contact to soil, surface water, and sediment) for SEAD-64B were evaluated during the mini-risk assessment conducted in 2001 and 2002. The total cancer risk from all exposure routes was calculated to be below the USEPA acceptable level for all three receptors. The total non-cancer HI from all exposure routes was also calculated to be less than 1.0 for all three receptors. A summary of the risk assessment results can be found in **Table 4** at the end of this report.

Supporting Investigations and Analysis

Soil

A total of three soil borings were installed at SEAD-64B during the ESI. Locations were based on geophysical surveys that were performed to delineate the area of the disposal area. Soil samples were collected at three depths at each boring location, as well as at one monitoring well, and analyzed for Target Compound List (TCL) volatile organic compounds (VOCs), SVOCs, Pesticides/ polychlorinated biphenyls (PCBs), Target Analyte List (TAL) metals, and cyanide according to the NYSDEC Contract Laboratory Protocol (CLP) Statement of Work (SOW).

Analytical results from one soil sample exceeded TAGM cleanup objective for magnesium. All other soil samples were below TAGM objectives. The results of the soil samples are summarized in **Table 5** at the end of this report.

Groundwater

Three monitoring wells, including one upgradient (background) well, were installed and sampled at SEAD-64B. Concentrations measured for aluminum and manganese in each of the samples exceeded their respective Secondary Drinking Water Regulation levels. Similarly, the concentrations measured for iron in two of the samples (MW64B-1 and MW64B-3) exceeded the NYSDEC GA standard value. The higher concentration measured for each

of these metals was found in the sample collected from MW64B-3, located furthest to the North and closest to the railroad tracks. The results of the groundwater samples are summarized in **Table 6** at the end of this report.

Surface Water/Sediment

Three surface water and sediment samples were collected from SEAD-64B. All three samples were collected from the drainage ditch that flows to the west along the northern perimeter of this SEAD.

One surface water sample exceeded criteria for both aluminum and iron but neither was extremely significant. Arsenic, copper, iron, manganese, mercury, and nickel were detected at concentrations exceeding criteria in one or more of the sediment samples. Summaries of the surface water and sediment samples are presented in **Tables 7** and **8**, respectively.

5.4 SEAD-64D: Garbage Disposal Area

The investigative work at SEAD-64B included an initial site investigation in 2002 followed by a treatability study in 2004. Complete analytical results from both investigations are presented in *Decision Document – Mini Risk Assessment SEAD 9, 27, 28, 32, 33, 34, 43, 44A, 44B, 52, 56, 58, 62, 64A, 64B, 64C, 64D, 66, 68, 69, 70, and 120B*, Parsons 2002. Data from the site investigations served as the basis of a mini-risk assessment that was performed to assess potential site risks. The results of the mini-risk assessment are summarized below. A brief synopsis of the site investigations conducted is presented later in this section, following the evaluation of the risk assessment.

Mini Risk Assessment

Table 9 summarizes the calculated cancer and non-cancer risks for all future potential receptors (park worker, recreational visitor – child, and construction worker) and exposure routes (inhalation of dust and groundwater, ingestion of soil and groundwater, and dermal contact to soil and groundwater) considered in the mini risk assessment conducted at SEAD-64D in 2002 and 2003. The total cancer risk from all exposure routes was calculated to be below the USEPA acceptable level for all three receptors. The total non-cancer HI from all exposure routes is less than 1.0 for the Construction Worker, but equals or exceeds one for the Park Worker (HI=3.0) and the Recreational Child Visitor (HI=1.0). The elevated hazard index for both receptors is due solely to ingestion of groundwater. The elevated HIs determined for the Park Worker and the Child Visitor result from metals detected in the groundwater samples, which are associated with the elevated turbidity levels observed.

Supporting Investigations and Analysis

During the Initial Site Investigation conducted in 2002 a total of five groundwater samples, 16 surficial (0 to 0.2 ft) and 20 subsurface soil samples were collected from SEAD-64D for chemical analysis. All samples were analyzed for TCL, VOCs, SVOCs, Pesticides/PCBs, TAL metals and cyanide according to the NYSDEC CLP SOW.

Soil

Thirty-six soil samples were collected from SEAD-64D. Benzo(a)pyrene, dibenz(a,h)anthracene, phenol, aluminum, calcium, lead, manganese, potassium, and sodium were detected in one to five samples at levels exceeding TAGM values. Dibenz(a,h)- anthracene was detected in four surface soil samples and one sample at 0 to 2 ft. at levels that were two to three times the TAGM value. Lead was detected in three samples with one value exceeding the TAGM value by more than twice. All other compounds exceeding TAGM values did so at less significant amounts.

In addition to soil samples, three test pits were excavated at SEAD-63. The excavated test pits had no metallic objects. Field Measurement at Test Pit 1

indicated VOC levels in the headspace above the waste were three ppm. Two borings were drilled near this test pit. Test Pit 2 had an east-west trending, four inch outside diameter, red clay pipe was intersected at a depth of two ft three inches. The interior of the pipe was dry and free of deposits.

The excavated material for all three pits was continuously screened for organic vapors and radioactivity with an OVM-580B and a Victoreen-190, respectively. Excluding the three ppm OVM reading from the two to four foot interval of TP64D-1, no readings above background levels (0 ppm of organic vapors and 10 to 15 microRems per hour of radiation) were observed during the excavations.

Groundwater

All five of the SEAD-64D groundwater samples exceeded the iron criteria for Class GA groundwater. Two of the five samples exceeded the manganese criteria for Class GA groundwater. Groundwater sampling was performed at SEAD-64D before low-flow sampling techniques were used at the Depot. As is seen from a review of the groundwater data obtained from this site, four of the five samples collected and analyzed exhibited turbidity levels greater than 100 NTU, and thus it is presumed that most of the elevated concentrations of both iron and manganese may be associated with the high turbidity of the samples. **Tables 10** and **11** illustrate the relationship between turbidity, metal concentrations in soil, and metal concentrations in groundwater. Groundwater concentrations of iron increase from 440 micrograms per liter (ug/L) to 65,800 ug/L as turbidity increases from 1.5 NTUs to greater than 200 NTUs, as shown in **Table 10**. Manganese groundwater concentrations increase from 223 ug/L to 8250 ug/L, as turbidity increases from 1.5 NTUs to more than 200 NTUs, as shown in **Table 11**.

6 SUMMARY OF THE REMEDIAL GOALS AND PROPOSED ACTION

The selected remedy for any site should, at a minimum, eliminate or mitigate all significant threats to the public health or the environment presented by the hazardous waste present at the site. The Army believes that its proposal of No Further Action for SEADs-52, -63, -64B, and -64D, along with the supportive information and data presented and summarized in this Proposed Plan, satisfy this condition.
The Army proposes No Further Action at SEAD 52, SEAD 63, SEAD 64B, and SEAD-64D.

The rationale behind the Army's decisions for each of these sites is explained in further detail below.

No Further Action is recommended for SEAD-52, which has been transferred to the State of New York under a Quitclaim deed and is now located within the parcel of land used for the Five Point's Correctional Facility. The Quitclaim Deed, recorded by the Seneca County Clerk on 26 September 2000 (See Liber 612 Page 014 through Page 031), indicates that "The above described property shall be used and maintained for a correctional facility in perpetuity,…"[3], and requires that the property shall not be sold, leased, mortgaged, assigned or otherwise disposed of. If these conditions are breached, the property reverts back to the US Government.

Based on the findings of the investigations, removal actions, and risk assessments completed, the Army has selected No Further Action as the remedy for SEAD-63. This selection is based on the Army's determination that this site does not pose a significant threat to human health or the environment. Further, the Army has selected No Further Action for SEAD-64B based on the findings of the investigation and the risk assessment completed. This selection is

[3] State of New York, Seneca County, Quitclaim Deed, Receipt # 25496, Instrument # 4636, Liber 612, Page 019.

based on the on the Army's determination that SEAD-64B does not pose a significant threat to human health or the environment. Additionally, SEAD-64B has been closed as a solid waste landfill (final approval by NYSDEC pending) in accordance with Title 6 NYCRR Part 360 Subchapter B Section 360.3 (1973), which provided guidance at the time of closure.

The Army also recommends that No Further Action is needed at SEAD-64D, although it does acknowledge that there is risk associated with the use of groundwater, driven by the concentrations of iron and manganese. The Army believes that the risk results from the metals that are associated with the suspended solids present in the collected groundwater samples. SEAD 64D has been closed as a solid waste landfill (final approval by NYSDEC pending) in accordance with Title 6 NYCRR Part 360 Subchapter B Section 360.3 (1973), which provided guidance at the time of closure.

7 REFERENCES

NYSDEC, 2000 - Division of Water Technical and Operational Guidance Series 1.1.1 (TOGS 1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, June 1998 as amended January 1999 and April 2000

NYSDEC, 1999 - Technical Guidance for Screening Contaminated Sediments, November 1993, as amended July 1994, March 1998, and January 1999.

NYSDEC, 1994 - Technical and Administrative Guidance Memorandum #4046, Determination of Soil Cleanup Objectives and Cleanup Levels, January 24, 1994.

NYSDEC, 1993 – Technical And Administrative Guidance Memorandum #4003, Cleanup Guideline for Soil Contaminated with Radioactive Material, September 1993.

Parsons, 2004 – Characterization Report, Small Arms Range – Airfield (SEAD-122B), Seneca Army Depot Activity, Revised Final, October 2004.

Parsons, 2001 – Decision Document – Mini Risk Assessment (SEAD-9, 27, 28, 32, 33, 34, 43, 44A, 44B, 52, 56, 58, 62, 64A, 64B, 64C, 64D, 66, 68, 69, 72, and 120B) Seneca Army Depot Activity, Final, February 2001.

Parsons, 2000 – SEAD-63 Final Action Memorandum, Final, July 2000.

Parsons, 1994 – SWMU Classification Report, Seneca Army Depot Activity, Final, June 1994.

Plexus, 2005 – Non-Time Critical Removal Action Miscellaneous Components Burial Site (SEAD-63) Seneca Army Depot Activity, Draft Final, February 2005.

Title 40, Code of Federal Regulations, Part 261, Identification and Listing of Hazardous Waste.

Title 40 Code of Federal Regulations, Part 300, National Oil and Hazardous Substances Pollution Contingency Plan.

Title 42 US Code Chapter 103, Comprehensive Environmental Response, Compensation, and Liability, Section 9620.

USATHAMA, 1988 - Update of the Initial Installation Assessment of Seneca Army Depot, NY, prepared by Environmental Science and Engineering Inc. (ESE), Report No. AMXTH-IR-A-157(U), August 1988.

USATHAMA, 1980 - Installation Assessment of Seneca Army Depot, Report No. 157, Aberdeen Proving Grounds, MD, January 1980.

USEPA, Army, and NYSDEC, 1993 - Federal Facility Agreement Under CERCLA Section 120, Docket Number: II-CERCLA-FFA-00202, January 1993.

USEPA, 2002 - Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, Integrated Manual, NTIS-PB2002105715, USEPA SW-846, 2002.

USEPA, 2001 - National Primary Drinking Water Standards, USEPA 816-F-01-007, March 2001

USEPA, 1999 - A Guide to Preparing Superfund Proposed Plans, Records of Decision, and Other Remedy Selection Decision Documents, USEPA 540-R-98-031, OSWER 9200.1-23P, PB98-963241, July 1999.

GLOSSARY

Area of Concern (AOC)
Areas of Concern (AOCs) include both solid waste management units where releases of hazardous substances may have occurred and locations where there has been a release or threat of a release in the environment of a hazardous substance, pollutant or contaminant (including radionuclides) under CERCLA.

Army Corps of Engineer (USACE)
The engineering organization of the U.S. Army. The districts involved in the Seneca Army Depot Activity project include the New York District (CENAN), the New England District (CENED), and the Engineering and Support Center, Huntsville (CEHNC).

Baseline Risk Assessment (BRA)
A baseline risk assessment is an assessment conducted before cleanup activities begin at a site to identify and evaluate the threat to human health and the environment. After remediation has been completed, the information obtained during a baseline risk assessment can be used to determine whether the cleanup levels were reached.

Base Realignment and Closure (BRAC)
A congressionally mandated process that involves closure of military bases. The goal of BRAC is to transition the former bases from military uses to civilian reuse, with the intent of minimizing the negative effects of base closure by spurring economic development and growth. The SEDA was listed as a base to be closed in October 1995. Base closure is in the process of being performed.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)
The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as Superfund, was enacted by Congress on December 11, 1980. This law created a tax on the chemical and petroleum industries and provided broad Federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. CERCLA:

Established prohibitions and requirements concerning closed and abandoned hazardous waste sites;

Provided for liability of persons responsible for releases of hazardous waste at these sites; and

Established a trust fund to provide for cleanup when no responsible party could be identified.

The law authorizes two kinds of response actions:

Short-term removals, where actions may be taken to address releases or threatened releases requiring prompt response.

Long-term remedial response actions, that permanently and significantly reduce the dangers associated with releases or threats of releases of hazardous substances that are serious, but not immediately life threatening. These actions can be conducted only at sites listed on USEPA's National Priorities List (NPL).

CERCLA also enabled the revision of the National Contingency Plan (NCP). The NCP provided the guidelines and procedures needed to respond to releases and threatened releases of hazardous substances, pollutants, or contaminants. The NCP also established the NPL.

CERCLA was amended by the Superfund Amendments and Reauthorization Act (SARA) on October 17, 1986

Cleanup
Cleanup is the term used for actions taken to deal with a release or threat of release of a hazardous substance that could affect humans and or the environment. The term sometimes is used

interchangeably with the terms remedial action, removal action, response action, or corrective action.

Closure (Under RCRA)

RCRA closure is a process for preventing the release of hazardous waste, hazardous constituents, leachate, contaminated run-off, or hazardous waste decomposition products to the ground water, surface water, or the atmosphere from a hazardous waste management facility after the facility stops receiving waste. The closure process may involve waste removal and management, decontamination and decommissioning of equipment, application of final covers, and other release-preventing actions. The process also involves developing a closure plan, having the plan approved as part of the facility's permit, and implementing the plan when the facility closes. Closure occurs after the facility accepts the final shipment of hazardous waste (unless the facility qualities for a delay of closure). (Reference: http://tis.eh.doe.gov/oepa/guidance/rcra/closur.pdf)

Closure (Department of Defense)

Under the Department of Defense's definition, closure means that all missions of the base will cease or be relocated. All personnel (military, civilian, and contractor) will either be eliminated or relocated. The entire base will be excessed and the property disposed.
(Reference:
ttp://www.hqda.army.mil/acsimweb/brac/braco.htm)

Community Environmental Response Facilitation Act (CERFA – Public Law 102-426)

The Community Environmental Response Facilitation Act (CERFA) was passed by Congress in 1992, and amended Section 9620(h) of CERCLA, which addresses Federal real property transfers. In enacting the legislation Congress stated that the closure of Federal facilities has an adverse impact on local economies and that delays in remediating contaminated real property add to this burden by delaying the conversion of such property to productive uses. The statute applies to real property owned by the Department of Defense and on which the U.S. plans to terminate Federal government operations, as well as to real property that has been used as a military installation and which is being closed or realigned pursuant to base closure. Federal entities with control over such properties must identify those upon which no hazardous substances or petroleum products/derivatives were stored for more than one year, released, or disposed of by examining relevant sources of data such as property deeds, aerial photographs, or other similar documents. Subsequent transfers or sales of the identified properties by the limited states must contain assurances that the U.S. will assume full responsibility for any response or corrective action that may become necessary after the transfer of property is completed. Where hazardous substances or petroleum products/derivatives were stored for more than one year, released, or disposed of on the U.S.-owned real property, the Federal entity with control of the property must notify the state of any lease entered into by the controlling Federal entity that will remain in effect after operations cease. The notification must be sent to the state prior to the signing of the lease, and must inform the state of the name of the lessee, and a description of the uses permitted under the condition of the lease. (Reference:
http://www.ntc.blm.gov/learningplace/res_CERFA.html)

Completion Report

A report that documents and certifies that conditions found at an Area of Concern (AOC) do not constitute a threat to public health, welfare or the environment and that further remedial measures are not necessary. Such documentation shall meet, to the extent practicable and as necessary under the specific facts pertaining to the AOC, the requirements of USEPA's RCRA Facility Investigation Guidance, USEPA's Guidance for Conducting RI/FSs under CERCLA, and any subsequent amendments to these documents and all other applicable federal or state guidance.

Contaminant
A contaminant is any physical, chemical, biological, or radiological substance or matter present in any media at concentrations that may result in adverse effects on air, water, or soil.

Contract Laboratory Program (CLP)
The USEPA's program that approves laboratories that provide chemical testing services of known quality using a wide range of standard methods and maintaining consistent quality control.

Detection Limit
The lowest concentration of a chemical that can be distinguished reliably from a zero concentration.

Disposal
Disposal is the final placement or destruction of toxic, radioactive or other wastes; surplus or banned pesticides or other chemicals; polluted soils; and drums containing hazardous materials from removal actions or accidental release. Disposal may be accomplished through the use of approved secure landfills, surface impoundments, land farming, deep well injection, or ocean dumping.

Environmental Protection Agency (USEPA)
The Federal regulatory agency responsible for enforcing the environmental rules and regulations of the United States. Representatives from the USEPA Region 2, which includes New York State, are involved in the review and oversight of the environmental work being conducted at the Seneca Army Depot Activity.

Expanded Site Investigation (ESI)
An expanded investigation that typically includes media sampling and analyses. An ESI is performed following a Preliminary Site Investigation to obtain more information regarding the concentrations of pollutants at a site.

Federal Facilities Agreement (FFA) also known as the Interagency Agreement (IAG)
An agreement signed between USEPA, NYSDEC and the Army that describes the process for identifying, investigating and remediating sites at the Seneca Army Depot Activity.

GA Groundwater Standard
A water quality standard promulgated by the NYSDEC that establishes a minimum quality of a groundwater supply that could be used as a source of drinking water.

Groundwater
Groundwater is the water that flows beneath the earth's surface that fills pores between such materials as sand, soil, or gravel and that often supplies wells and springs.

Heavy Metal
The term heavy metal refers to a group of toxic metals including arsenic, chromium, copper, lead, mercury, silver, and zinc. Heavy metals often are present at industrial sites at which operations have included battery recycling and metal plating.

Hydrogeology
Hydrogeology is the study of groundwater, including its origin, occurrence, movement, and quality.

Incinerator
A furnace or container used for burning waste materials.

Inorganic Compounds
An inorganic compound is a compound that generally does not contain carbon atoms (although carbonate and bicarbonate compounds are notable exceptions). Examples of inorganic compounds include various metals.

Institutional Control (IC)
A method used to control access to a contaminated site and/or exposure to contaminants at a site.

Examples of institutional controls include fencing or use restrictions.

Landfill

A sanitary landfill is a land disposal site for non-hazardous solid wastes at which the waste is spread in layers compacted to the smallest practical volume.

Lead

Lead is a heavy metal that is hazardous to health if breathed or swallowed. Its use in gasoline, paints, and plumbing compounds has been sharply restricted or eliminated by federal laws and regulations. *See also Heavy Metal.*

Mean Sea Level (MSL)

The average height of the sea surface, based upon hourly observation of the tide height on the open coast or in adjacent waters that have free access to the sea. In the United States, it is defined as the average height of the sea surface for all stages of the tide over a nineteen year period. Mean sea level, commonly abbreviated as MSL and referred to simply as 'sea level,' serves as the reference surface for all altitudes in upper atmospheric studies.
(Reference:
http://earthobservatory.nasa.gov:81/Library/glossary.php3?xref = mean%20sea%20level)

Maximum Contaminant Level (MCL)

Established under the Safe Drinking Water Act as concentrations of pollutants considered protective for drinking water.

Monitoring Well

A monitoring well is a well drilled at a specific location on or off a hazardous waste site at which groundwater can be sampled at selected depths and studied to determine the direction of groundwater flow and the types and quantities of contaminants present in the groundwater.

National Contingency Plan (NCP)

The NCP, formally the National Oil and Hazardous Substances Contingency Plan, is the major regulatory framework that guides the Superfund response effort. The NCP is a comprehensive body of regulations that outlines a step-by-step process for implementing Superfund responses and defines the roles and responsibilities of USEPA, other federal agencies, states, private parties, and the communities in response to situations in which hazardous substances are released into the environment. *See also Superfund.*

National Priorities List (NPL)

The NPL is USEPA's list of the most serious uncontrolled or abandoned hazardous waste sites identified for possible long-term remedial response under Superfund. Inclusion of a site on the list is based primarily on the score the site receives under the HRS. Money from Superfund can be used for cleanup only at sites that are on the NPL. EP A is required to update the NPL at least once a year. *See also Hazard Ranking System and Superfund.*

New York State Department of Environmental Conservation (NYSDEC)

NYSDEC’s missions include detecting and controlling sources of pollution, protecting and managing New York’s natural resources, informing and educating the public about environment, natural resources, and government’s actions to protect them.

NFA

No Further Action.

NYCRR

The New York State compilation of Codes, Rules, and Regulations.

Organic Chemical or Compound

An organic chemical or compound is a substance produced by animals or plants that contains mainly carbon, hydrogen, and oxygen.

Permeability

Permeability is a characteristic that represents a qualitative description of the relative ease with which

rock, soil, or sediment will transmit a fluid (liquid or gas).

Pesticide
A pesticide is a substance or mixture of substances intended to prevent or mitigate infestation by, or destroy or repel, any pest. Pesticides can accumulate in the food chain and or contaminate the environment if misused.

Polychlorinated Biphenyl (PCB)
PCBs are a group of toxic, persistent chemicals, produced by chlorination of biphenyl, that once were used in high voltage electrical transformers because they conducted heat well while being fire resistant and good electrical insulators. These contaminants typically are generated from metal degreasing, printed circuit board cleaning, gasoline, and wood preserving processes. Further sale or use of PCBs in the United States was banned in 1979.

Polycyclic Aromatic Hydrocarbon (PAH)
A PAH is a chemical compound that contains more than one fused benzene ring. They are commonly found in petroleum fuels, coal products, and tar.

Proposed Plan
The Proposed Plan is the first step in the remedy selection process. The Proposed Plan provides information supporting the decisions of how the preferred alternative was selected. It summarizes the site information and how the alternatives comply with the requirements of the NCP and CERCLA. The Proposed Plan is provided to the public for comment. The responses to the Proposed Plan comments are provided in the ROD.

Record of Decision (ROD)
A ROD is a legal, technical, and public document that explains which cleanup alternative will be used at a Superfund NPL site. The ROD is based on information and technical analysis generated during the remedial investigation and feasibility study (RI/FS) and consideration of public comments and community concerns. *See also Preliminary Assessment and Site Investigation and Remedial Investigation and Feasibility Study.*

Release
A release is any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, leaching, dumping, or disposing into the environment of a hazardous or toxic chemical or extremely hazardous substance, as defined under RCRA. *See also Resource Conservation and Recovery Act.*

Remedial Action (RA)
A RA is the actual construction or implementation of a remedy at a site or portion thereof.

Remedial Investigation and Feasibility Study (RI/FS)
The RI/FS is the step in the Superfund cleanup process that is conducted to gather sufficient information to support the selection of a site remedy that will reduce or eliminate the risks associated with contamination at the site. The RI involves site characterization through collection of data and information necessary to characterize the nature and extent of contamination at the site. The RI also determines whether the contamination presents a significant risk to human health or the environment. The FS focuses on the development of specific response alternatives for addressing contamination at a site.

Resource Conservation and Recovery Act (RCRA)
RCRA is a federal law enacted in 1976 that established a regulatory system to track hazardous substances from their generation to their disposal. The law requires the use of safe and secure procedures in treating, transporting, storing, and disposing of hazardous substances. RCRA is designed to prevent the creation of new, uncontrolled hazardous waste sites.

Risk Assessment
The process of assessing and analyzing threats that contaminants found at a site pose to surrounding

populations and the environment. The resulting analysis is used as a preliminary, conservative estimate of the potential level of threat that is posed so that appropriate and cost-effective countermeasures can be identified and implemented.

Sediment Guideline
Technical guidance provided by NYSDEC, the Division of Fish and Wildlife, that describes allowable sediment quality for a variety of chemicals. The values provided in this document have been adopted as screening levels for comparison to site data. Exceedances of these values provides that basis for further evaluation and decision making.

Semivolatile Organic Compound (SVOC)
SVOCs, composed primarily of carbon and hydrogen atoms, have boiling points greater than 2000^{o}C. Common SVOCs include PCBs and phenol. *See also Phenol and Polychlorinated Biphenyl.*

Seneca Army Depot Activity (SEDA)
A 10,634-acre military facility, constructed in 1941, located in central New York responsible for storage and management of military commodities, including munitions. The depot ceased military operations in 2000. Environmental cleanup activities will continue until all sites have been addressed.

Seneca County Board of Supervisors
The board that oversees Seneca County's governmental affairs.

Significant Threat
The term refers to the level of contamination that a state would consider significant enough to warrant an action. The thresholds vary from state to state.

Soil Boring
Soil boring is a process by which a soil sample is extracted from the ground for chemical, biological, and analytical testing to determine the level of contamination present.

Solid Waste
Any garbage, refuse, sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semisolid, or contained gaseous materials resulting from industrial, commercial, mining, and agricultural activities and from community activities

Solid Waste Management Unit (SWMU)
A SWMU is a RCRA term used to describe a contiguous area of land on or in which where solid waste, including hazardous waste, was managed. This includes landfills, tanks, land treatment areas, spills and other areas where waste materials were handled. Identification of all SWMUs at SEDA was performed as part of the RCRA Part B Permit Application process.

Subsurface
Underground, or beneath the surface.

Surface Water
Surface water is all water naturally open to the atmosphere, such as rivers, lakes, reservoirs, streams, and seas.

Superfund
Superfund is the trust fund that provides for the cleanup of hazardous substances released into the environment, regardless of fault. The Superfund was established under CERCLA and subsequent amendments to CERCLA. The term Superfund also is used to refer to cleanup programs designed and conducted under CERCLA and its subsequent amendments. *See also Comprehensive Environmental Response, Compensation, and Liability Act.*

Technical Administrative Guidance Memorandum (TAGM)
TAGMs are technical guidance publications provided by NYSDEC that describes various processes and procedures recommended by NYSDEC for the investigation and remediation of hazardous waste

sites. One TAGM, No. 4046, provides guideline values for recommended soil cleanup levels at waste sites.

Time Critical Removal Action (TCRA)

A TCRA can be used to eliminate possible threats, and to expedite the closure process and lessen, and perhaps eliminate, any possible threats, current or future that these sites may pose to human health and the environment.

Volatile Organic Compound (VOC)

A VOC is one of a group of carbon-containing compounds that evaporate readily at room temperature. Examples of VOCs include trichloroethane; trichloroethylene; and BTEX. These contaminants typically are generated from metal degreasing, printed circuit board cleaning, gasoline, and wood preserving processes.

Water Table

A water table is the boundary between the saturated and unsaturated zones beneath the surface of the earth, the level of groundwater, and generally is the level to which water will rise in a well.

TABLE 1
Cancer and Non-Cancer Risk Results - SEAD-52
Decision Document - Mini Risk Assessment
Seneca Army Depot Activity

RECEPTOR	EXPOSURE ROUTE	HAZARD INDEX	CANCER RISK
PRISON INMATE	Inhalation of Dust in Ambient Air	NQ	NQ
	Ingestion of Soil	3.E-03	7.E-07
	Dermal Contact to Soil	NQ	NQ
	TOTAL RECEPTOR RISK	*3.E-03*	*7.E-07*
PRISON WORKER	Inhalation of Dust in Ambient Air	NQ	NQ
	Ingestion of Soil	2.E-03	5.E-07
	Dermal Contact to Soil	NQ	NQ
	TOTAL RECEPTOR RISK	*2.E-03*	*5.E-07*
CONSTRUCTION WORKER	Inhalation of Dust in Ambient Air	NQ	NQ
	Ingestion of Soil	4.E-04	5.E-09
	Dermal Contact to Soil	NQ	NQ
	TOTAL RECEPTOR RISK	*4.E-04*	*5.E-09*
DAY CARE CENTER CHILD	Inhalation of Dust in Ambient Air	NQ	NQ
	Ingestion of Soil	2.E-02	1.E-06
	Dermal Contact to Soil	NQ	NQ
	TOTAL RECEPTOR RISK	2.E-02	1.E-06
DAY CARE CENTER WORKER	Inhalation of Dust in Ambient Air	NQ	NQ
	Ingestion of Soil	2.E-03	5.E-07
	Dermal Contact to Soil	NQ	NQ
	TOTAL RECEPTOR RISK	2.E-03	5.E-07

NQ - Not quanitfied due to lack of toxicity data.

TABLE 2
SOIL ANALYSIS RESULTS - SEAD-52
Decision Document - Limited Sampling Program
Seneca Army Depot Activity

COMPOUND	UNIT	MAXIMUM CONCENTRATION	LAB QUALIFIER	FREQUENCY OF DETECTION	TAGM CRITERIA	NUMBER ABOVE TAGM	NUMBER OF DETECTS	NUMBER OF ANALYSES
NITROAROMATICS								
HMX	ug/Kg	0		0%	NS	0	0	19
RDX	ug/Kg	0		0%	NS	0	0	19
1,3,5-Trinitrobenzene	ug/Kg	0		0%	NS	0	0	19
1,3-Dinitrobenzene	ug/Kg	0		0%	NS	0	0	19
Tetryl	ug/Kg	150	J	5%	NS	0	1	19
2,4,6-Trinitrotoluene	ug/Kg	410	J	11%	NS	0	2	19
4-amino-2,6-Dinitrotoluene	ug/Kg	0		0%	NS	0	0	19
2-amino-4,6-Dinitrotoluene	ug/Kg	0		0%	NS	0	0	19
2,6-Dinitrotoluene	ug/Kg	0		0%	1000	0	0	19
2,4-Dinitrotoluene	ug/Kg	2100	J	53%	NS	0	10	19

NOTES:
J = The reported value is an estimated concentration.
ug/Kg = micrograms per Kilogram.
NS = No standard.

TABLE 3
Cancer and Non-Cancer Risk Results - SEAD-63
Decision Document - Mini Risk Assessment
Seneca Army Depot Activity

RECEPTOR	EXPOSURE ROUTE	HAZARD INDEX	CANCER RISK
PARK WORKER	Inhalation of Dust in Ambient Air	7.E-07	1.E-09
	Ingestion of Soil	1.E-03	5.E-08
	Dermal Contact to Soil	4.E-04	8.E-08
	Ingestion of Groundwater	1.E-01	NQ
	Dermal Contact to Surface Water	4.E-03	5.E-05
	Dermal Contact to Sediment	1.E-03	1.E-06
	TOTAL RECEPTOR RISK	*2.E-01*	*5.E-05*
RECREATIONAL VISITOR (CHILD)	Inhalation of Dust Ambient Air	1.E-06	5.E-10
	Ingestion of Soil	4.E-03	4.E-08
	Dermal Contact to Soil	4.E-04	2.E-08
	Ingestion of Groundwater	3.E-01	NQ
	Dermal Contact to Groundwater	5.E-02	NQ
	Dermal Contact to Surface Water	4.E-02	8.E-05
	Dermal Contact to Sediment	1.E-02	3.E-06
	TOTAL RECEPTOR RISK	*4.E-01*	*8.E-05*
CONSTRUCTION WORKER	Inhalation of Dust in Ambient Air	9.E-05	3.E-08
	Ingestion of Soil	2.E-01	4.E-08
	Dermal Contact to Soil	2.E-02	1.E-08
	TOTAL RECEPTOR RISK	*3.E-01*	*9.E-08*
ADULT RESIDENT (Hazard Index)	Inhalation of Dust Ambient Air	3.E-06	See risk below
	Ingestion of Soil	2.E-03	
	Dermal Contact to Soil	3.E-04	
	Ingestion of Groundwater	6.E-01	
	Dermal Contact to Groundwater	1.E-01	
	Dermal Contact to Surface Water	5.E-03	
	Dermal Contact to Sediment	1.E-03	
	TOTAL RECEPTOR RISK	*7.E-01*	
CHILD RESIDENT (Hazard Index)	Inhalation of Dust Ambient Air	7.E-06	See risk below
	Ingestion of Soil	2.E-02	
	Dermal Contact to Soil	2.E-03	
	Ingestion of Groundwater	1.E+00	
	Dermal Contact to Groundwater	2.E-01	
	Dermal Contact to Surface Water	4.E-02	
	Dermal Contact to Sediment	1.E-02	
	TOTAL RECEPTOR RISK	*2.E+00*	
RESIDENT (Total Lifetime Cancer Risk)	Inhalation of Dust Ambient Air	See risk above	8.E-09
	Ingestion of Soil		3.E-07
	Dermal Contact to Soil		1.E-08
	Ingestion of Groundwater		NQ
	Dermal Contact to Groundwater		NQ
	Dermal Contact to Surface Water		1.E-04
	Dermal Contact to Sediment		4.E-06
	TOTAL RECEPTOR RISK		*1.E-04*

TABLE 4
Cancer and Non-Cancer Risk Results - SEAD-64B
Decision Document - Mini Risk Assessment
Seneca Army Depot Activity

RECEPTOR	EXPOSURE ROUTE	HAZARD INDEX	CANCER RISK
PARK WORKER	Inhalation of Dust in Ambient Air	7.E-11	5.E-12
	Ingestion of Soil	8.E-05	8.E-08
	Dermal Contact to Soil	NQ	NQ
	Dermal Contact to Surface Water	7.E-05	NQ
	Dermal Contact to Sediment	6.E-04	7.E-08
	TOTAL RECEPTOR RISK	*7.E-04*	*1.E-07*
RECREATIONAL VISITOR (CHILD)	Inhalation of Dust in Ambient Air	3.E-11	4.E-13
	Ingestion of Soil	6.E-05	1.E-08
	Dermal Contact to Soil	NQ	NQ
	Dermal Contact to Surface Water	3.E-04	NQ
	Dermal Contact to Sediment	2.E-03	6.E-08
	TOTAL RECEPTOR RISK	*3.E-03*	*7.E-08*
CONSTRUCTION WORKER	Inhalation of Dust in Ambient Air	1.E-09	9.E-12
	Ingestion of Soil	9.E-04	3.E-08
	Dermal Contact to Soil	NQ	NQ
	TOTAL RECEPTOR RISK	*9.E-04*	*3.E-08*

NQ - Not quanitfied due to lack of toxicity data.

TABLE 5
Soil Analysis Summary - SEAD 64B
Decision Document - Expanded Site Investigation
Seneca Army Depot Activity

COMPOUND	UNIT	MAXIMUM CONCENTRATION	FREQUENCY OF DETECTION	TAGM OBJECTIVES	NUMBER ABOVE TAGM	NUMBER OF DETECTS	NUMBER OF ANALYSES
Acetone	ug/Kg	57	17%	200	0	2	12
Methyl ethyl ketone	ug/Kg	22	8%	300	0	1	12
Benzo(a)anthracene	ug/Kg	38	17%	NA	0	2	12
Benzo(a)pyrene	ug/Kg	34	25%	NA	0	3	12
Benzo(b)fluoranthene	ug/Kg	28	25%	NA	0	3	12
Benzo(ghi)perylene	ug/Kg	20	17%	NA	0	2	12
Benzo(k)fluoranthene	ug/Kg	36	25%	NA	0	3	12
Bis(2-Ethylhexyl)phthalate	ug/Kg	96	42%	50000	0	5	12
Chrysene	ug/Kg	40	25%	400	0	3	12
Di-n-butylphthalate	ug/Kg	120	58%	8100	0	7	12
Fluoranthene	ug/Kg	35	42%	50000	0	5	12
Phenanthrene	ug/Kg	30	17%	50000	0	2	12
Pyrene	ug/Kg	36	25%	50000	0	3	12
4,4'-DDE	ug/Kg	2.6	8%	NA	0	1	12
4,4'-DDT	ug/Kg	2.6	8%	NA	0	1	12
Heptachlor epoxide	ug/Kg	1.4	8%	20	0	1	12
Aluminum	mg/Kg	13400	100%	19520	0	12	12
Antimony	mg/Kg	0.3	25%	6	0	3	12
Arsenic	mg/Kg	5.8	100%	8.9	0	12	12
Barium	mg/Kg	75.9	100%	300	0	12	12
Beryllium	mg/Kg	0.56	100%	1.13	0	12	12
Cadmium	mg/Kg	0.63	100%	2.46	0	12	12
Calcium	mg/Kg	54800	100%	125300	0	12	12
Chromium	mg/Kg	17.5	100%	30	0	12	12
Cobalt	mg/Kg	8.9	100%	30	0	12	12
Copper	mg/Kg	21.5	100%	33	0	12	12
Iron	mg/Kg	20900	100%	37410	0	12	12
Lead	mg/Kg	21.4	100%	24.4	0	12	12
Magnesium	mg/Kg	22100	100%	21700	1	12	12
Manganese	mg/Kg	414	100%	1100	0	12	12
Mercury	mg/Kg	0.05	75%	0.1	0	9	12
Nickel	mg/Kg	26.2	100%	50	0	12	12
Potassium	mg/Kg	2160	100%	2623	0	12	12
Selenium	mg/Kg	0.99	42%	2	0	5	12
Sodium	mg/Kg	65.8	92%	188	0	11	12
Thallium	mg/Kg	0.41	17%	0.855	0	2	12
Vanadium	mg/Kg	23.3	100%	150	0	12	12
Zinc	mg/Kg	78.8	100%	115	0	12	12

NOTES:
ug/Kg = micrograms per Kilogram.
MG/Kg = milligrams per Kilogram.
NS = No standard.

TABLE 6
GROUND WATER ANALYSIS RESULTS - SEAD-64B
Decision Document - Expanded Site Investigation
Seneca Army Depot Activity

COMPOUND	UNIT	MAXIMUM CONCENTRATION	LAB QUALIFIER	FREQUENCY OF DETECTION	CRITERIA LEVEL	NUMBER ABOVE CRITERIA	NUMBER OF DETECTS	NUMBER OF ANALYSES
METALS								
Aluminum	ug/L	1530		100%	50 [a]	3	3	3
Arsenic	ug/L	2.2	J	33%	3 [b]	0	1	3
Barium	ug/L	124	J	100%	1000 [b]	0	3	3
Calcium	ug/L	200000		100%	NA	0	3	3
Chromium	ug/L	3.1	J	67%	50 [b]	0	2	3
Cobalt	ug/L	4.4	J	100%	NA	0	3	3
Copper	ug/L	3.1	J	100%	200 [b]	0	3	3
Iron	ug/L	5090		100%	300 [b]	2	3	3
Magnesium	ug/L	76000		100%	NA	0	3	3
Manganese	ug/L	559		100%	50 [a]	3	3	3
Nickel	ug/L	7	J	100%	100 [b]	0	3	3
Potassium	ug/L	4780	J	100%	NA	0	3	3
Selenium	ug/L	2.7	J	33%	10 [b]	0	1	3
Sodium	ug/L	17800		100%	20000 [b]	0	3	3
Vanadium	ug/L	2.9	J	100%	NA	0	3	3
Zinc	ug/L	16.6	J	100%	5000 [a]	0	3	3

NOTES:
a) Secondary Drinking Water Regulation
b) NY State Class GA Groundwater Regulations
NA = Not Available
J = The reported value is an estimated concentration.
ug/L - micrograms per liter

TABLE 7
SURFACE WATER ANALYSIS RESULTS-SEAD-64B
Decision Document - Expanded Site Investigation
Seneca Army Depot Activity

COMPOUND	UNITS	MAXIMUM CONCENTRATION	FREQUENCY OF DETECTION	NYS GUIDELINES CLASS C [(a)(b)]	NUMBER ABOVE GUIDELINES	NUMBER OF DETECTS	NUMBER OF ANALYSES
VOLATILE ORGANICS							
Carbon Disulfide	ug/L	2	33%	NG	0	1	3
METALS							
Aluminum	ug/L	141	67%	100	1	2	3
Barium	ug/L	37.8	100%	NG	0	3	3
Calcium	ug/L	61200	100%	NG	0	3	3
Chromium	ug/L	0.42	67%	140	0	2	3
Copper	ug/L	1.5	100%	17.36	0	3	3
Iron	ug/L	331	100%	300	1	3	3
Magnesium	ug/L	10900	100%	NG	0	3	3
Manganese	ug/L	39.2	100%	NG	0	3	3
Nickel	ug/L	1.2	67%	100.16	0	2	3
Potassium	ug/L	1180	100%	NG	0	3	3
Sodium	ug/L	3050	100%	NG	0	3	3
Zinc	ug/L	7.7	100%	159.6	0	3	3
OTHER ANALYSES							
pH	Standard Units	7.9	100%	NG	0	3	3
Conductivity	umhos/cm	293	100%	NG	0	3	3
Temperature	°C	16	100%	NG	0	3	3
Turbidity	NTU	0.6	100%	NG	0	3	3

NOTES:
a) The New York State Ambient Water Quality standards and guidelines for Class C surface water (1998).
b) Hardness dependent values assume a hardness of 217 mg/L.
NG = No guidelines.
ug/L = micrograms per Liter.
NTU = nephelometric turbidity units.

TABLE 8
SEDIMENT ANALYSIS RESULTS-SEAD-64B
Decision Document - Expanded Site Investigation
Seneca Army Depot Activity

COMPOUND	UNIT	MAXIMUM CONCENTRATION	QUALIFIER	FREQUENCY OF DETECTION	NYSDEC SEDIMENT GUIDELINES	NUMBER ABOVE GUIDELINES	NUMBER OF DETECTS	NUMBER OF ANALYSES
VOLATILE ORGANICS								
Methylene chloride	ug/Kg	6	J	100%	NG	0	3	3
SEMIVOLATILE ORGANICS								
Benzo(a)pyrene	ug/Kg	29	J	33%	50.8	0	1	3
Benzo(b)fluoranthene	ug/Kg	39	J	33%	50.8	0	1	3
Benzo(k)fluoranthene	ug/Kg	30	J	33%	50.8	0	1	3
Bis(2-Ethylhexyl)phthalate	ug/Kg	79		67%	7801	0	2	3
Fluoranthene	ug/Kg	55	J	33%	39887	0	1	3
Phenanthrene	ug/Kg	31	J	33%	4692	0	1	3
Pyrene	ug/Kg	32	J	33%	37580	0	1	3
PESTICIDES/PCBs								
4,4'-DDE	ug/Kg	3.3	J	33%	0.39	1	1	3
Endosulfan I	ug/Kg	2.4		33%	1.17	1	1	3
Heptachlor	ug/Kg	1.1	J	33%	0.031	1	1	3
METALS								
Aluminum	mg/Kg	12800		100%	NG	0	3	3
Antimony	mg/Kg	0.25	J	33%	2	0	1	3
Arsenic	mg/Kg	7.5		100%	6	1	3	3
Barium	mg/Kg	102		100%	NG	0	3	3
Beryllium	mg/Kg	0.67	J	100%	NG	0	3	3
Cadmium	mg/Kg	0.45	J	100%	0.6	0	3	3
Calcium	mg/Kg	75900		100%	NG	0	3	3
Chromium	mg/Kg	19.3		100%	26	0	3	3
Cobalt	mg/Kg	11.8		100%	NG	0	3	3
Copper	mg/Kg	27		100%	16	2	3	3
Iron	mg/Kg	28100		100%	20000	1	3	3
Lead	mg/Kg	16.5		100%	31	0	3	3
Magnesium	mg/Kg	14100		100%	NA	0	3	3
Manganese	mg/Kg	684		100%	460	1	3	3
Mercury	mg/Kg	0.19	J	100%	0.15	1	3	3
Nickel	mg/Kg	32		100%	16	3	3	3
Potassium	mg/Kg	2190		100%	NG	0	3	3
Sodium	mg/Kg	35.5	J	33%	NG	0	1	3
Vanadium	mg/Kg	25.9		100%	NG	0	3	3
Zinc	mg/Kg	82.2		100%	120	0	3	3

NOTES:
NG = No guidelines.
J = The reported value is an estimated concentration.

TABLE 9
Cancer and Non-Cancer Risk Results - SEAD-64D
Decision Document - Mini Risk Assessment
Seneca Army Depot Activity

RECEPTOR	EXPOSURE ROUTE	HAZARD INDEX	CANCER RISK
PARK WORKER	Inhalation of Dust in Ambient Air	3.E-08	2.E-15
	Ingestion of Soil	5.E-05	3.E-07
	Dermal Contact to Soil	NQ	NQ
	Ingestion of Groundwater	**3.E+00**	NQ
	TOTAL RECEPTOR RISK	***3.E+00***	*3.E-02*
RECREATIONAL VISITOR (CHILD)	Inhalation of Dust in Ambient Air	1.E-08	1.E-16
	Ingestion of Soil	4.E-05	4.E-08
	Dermal Contact to Soil	NQ	NQ
	Inhalation of Groundwater	NQ	NQ
	Ingestion of Groundwater	**1.E+00**	NQ
	Dermal Contact to Groundwater	4.E-02	NQ
	TOTAL RECEPTOR RISK	***1.E+00***	*4.E-08*
CONSTRUCTION WORKER	Inhalation of Dust in Ambient Air	5.E-07	1.E-15
	Ingestion of Soil	3.E-04	7.E-08
	Dermal Contact to Soil	NQ	NQ
	TOTAL RECEPTOR RISK	*3.E-04*	*7.E-08*

NQ - Not quanitfied due to lack of toxicity data.
Bold values for the risk assessment indicate a value greater than the acceptable risk.

TABLE 10

Relationship Between Turbidity and Concentration of Iron in Soil and Groundwater at SEAD-64D

Turbidity of Groundwater Sample, NTU	Soil Sample ID (1)	Soil Concentration, ug/Kg	Groundwater Sample Near Soil Samples	Groundwater Concentration, ug/L
1.5	SB64D-10-00	21000	MW64D-1	440
	SB64D-10-01	36200		
	SB64D-10-02	17000		
	Average	24700		
127	SB64D-8-00	32500	MW64D-3	538
	SB64D-8-01	28200		
	SB64D-8-02	28600		
	Average	29800		
141	SB64D-4-00	28300	MW64D-4	552
	SB64D-4-01	34800		
	SB64D-4-02	20500		
	Average	27900		
181	SB64D-6-00	24300	MW64D-2	1730
	SB64D-6-01	28200		
	SB64D-6-02	25300		
	Average	26000		
>200	SB64D-2-00	29800	MW64D-5	65800
	SB64D-2-01	36600		
	SB64D-2-02	24200		
	Average	30200		

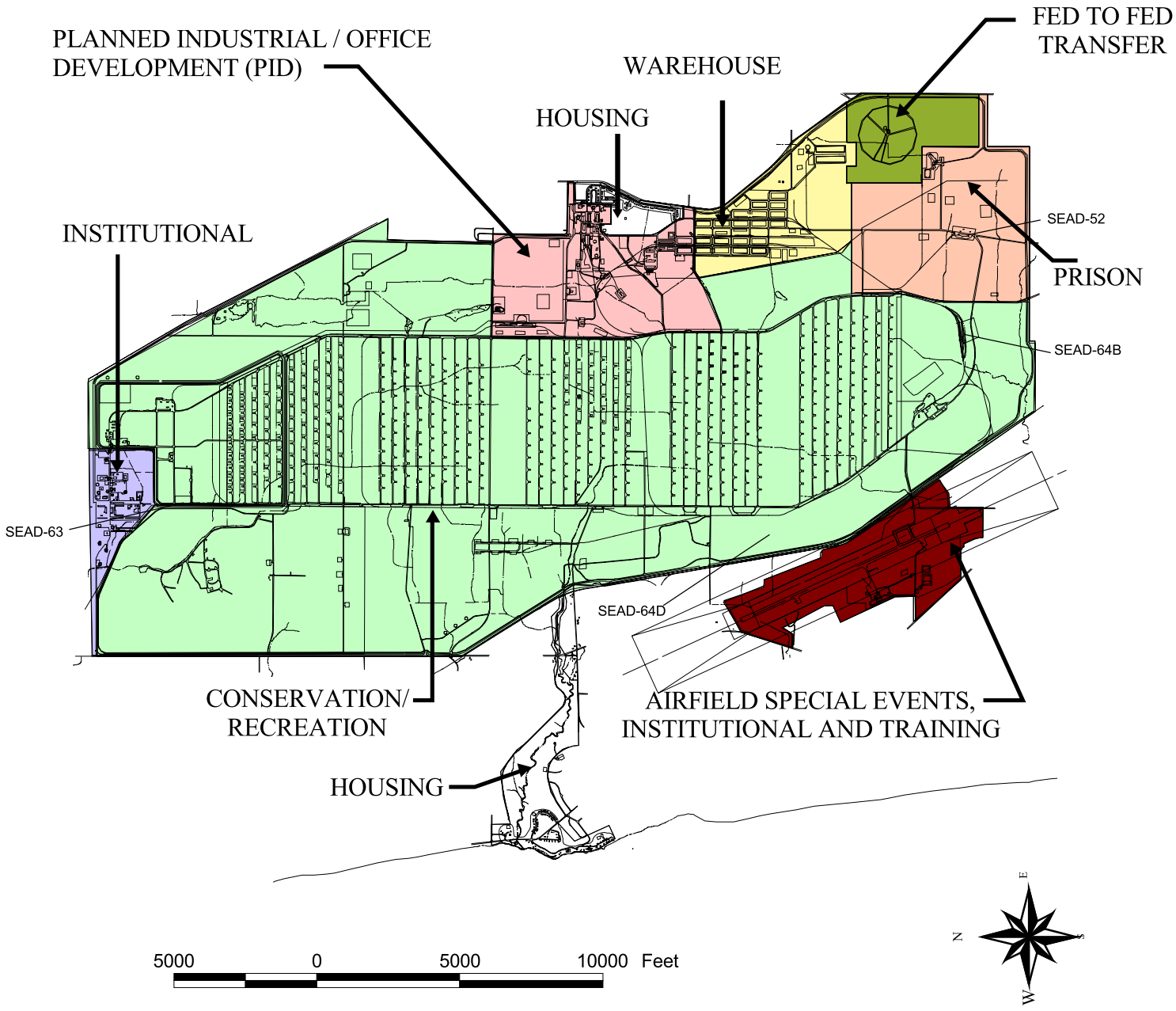
1) Analytical results from the nearest soil boring were compared to each the result from the groundwater sample.

TABLE 11

Relationship Between Turbidity and Concentration of Manganese in Soil and Groundwater at SEAD-64D

Turbidity of Groundwater Sample, NTU	Soil Sample ID (1)	Soil Concentration, ug/Kg	Groundwater Sample Near Soil Samples	Groundwater Concentration, ug/L
1.5	SB64D-10-00	684	MW64D-1	223
	SB64D-10-01	776		
	SB64D-10-02	352		
	Average	*604*		
127	SB64D-8-00	1040	MW64D-3	86.6
	SB64D-8-01	659		
	SB64D-8-02	748		
	Average	*816*		
141	SB64D-4-00	884	MW64D-4	106
	SB64D-4-01	859		
	SB64D-4-02	751		
	Average	*831*		
181	SB64D-6-00	627	MW64D-2	456
	SB64D-6-01	851		
	SB64D-6-02	645		
	Average	*708*		
>200	SB64D-2-00	688	MW64D-5	8250
	SB64D-2-01	1240		
	SB64D-2-02	476		
	Average	*801*		

1) Analytical results from the nearest soil boring were compared to each the result from the groundwater sample.



Airfield

Conservation

Federal

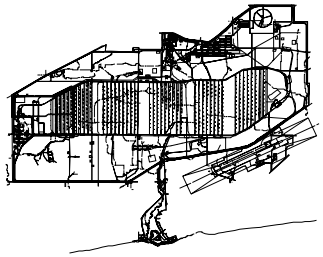
Industrial

Institutional

Prison

Warehouse

Housing

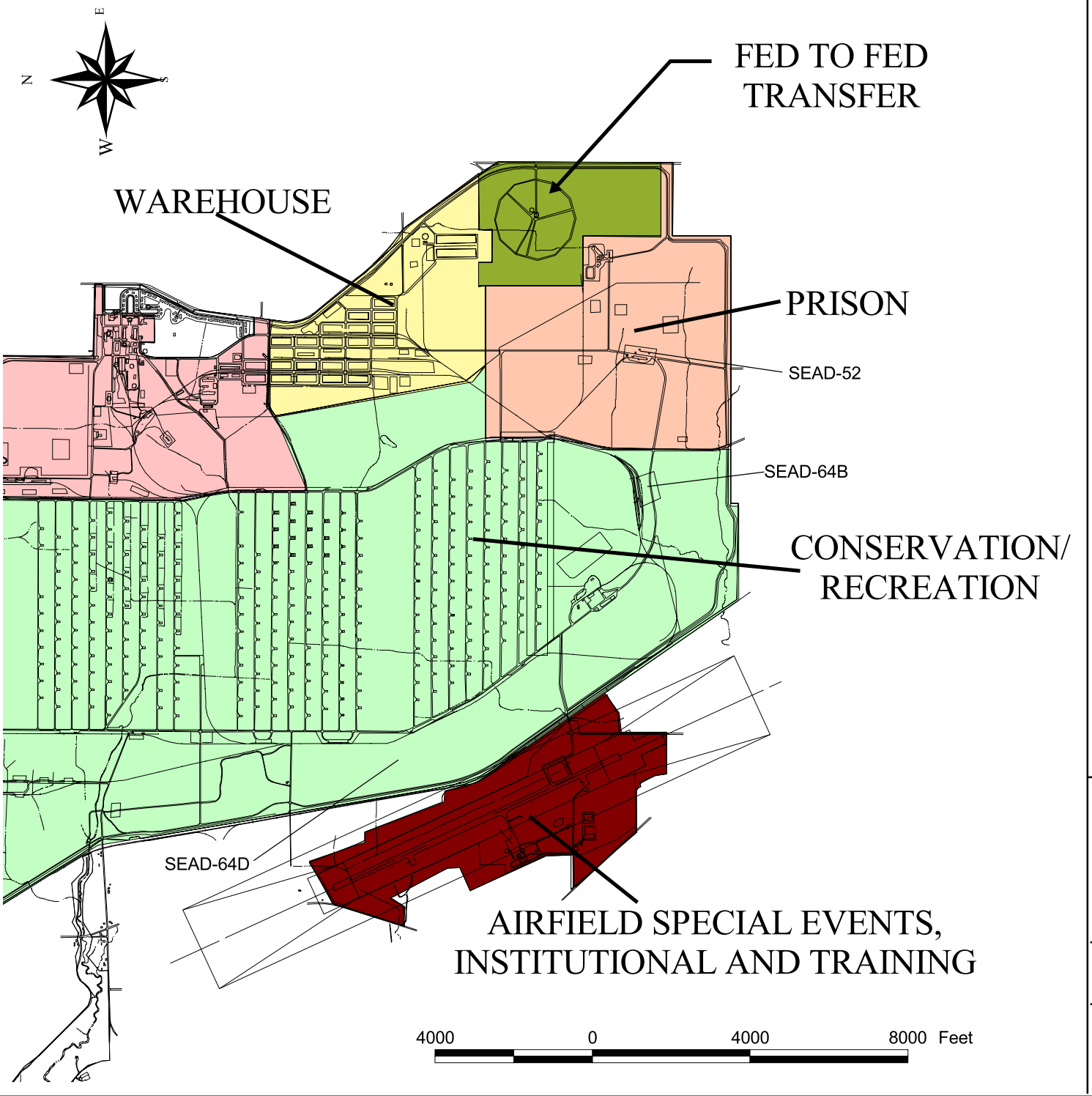


PARSONS

Seneca Army Depot Activity
Proposed Plan
NFA Sites 52, 63, 64B and 64D

Figure 1
Future Land Use

o:/seneca/noact/noaction.apr/PRAP B Figure 1



Airfield

Conservation

Federal

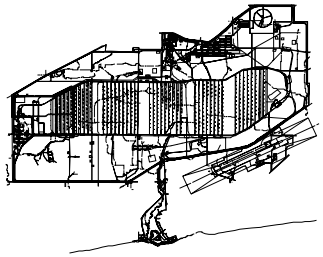
Industrial

Institutional

Prison

Warehouse

Housing

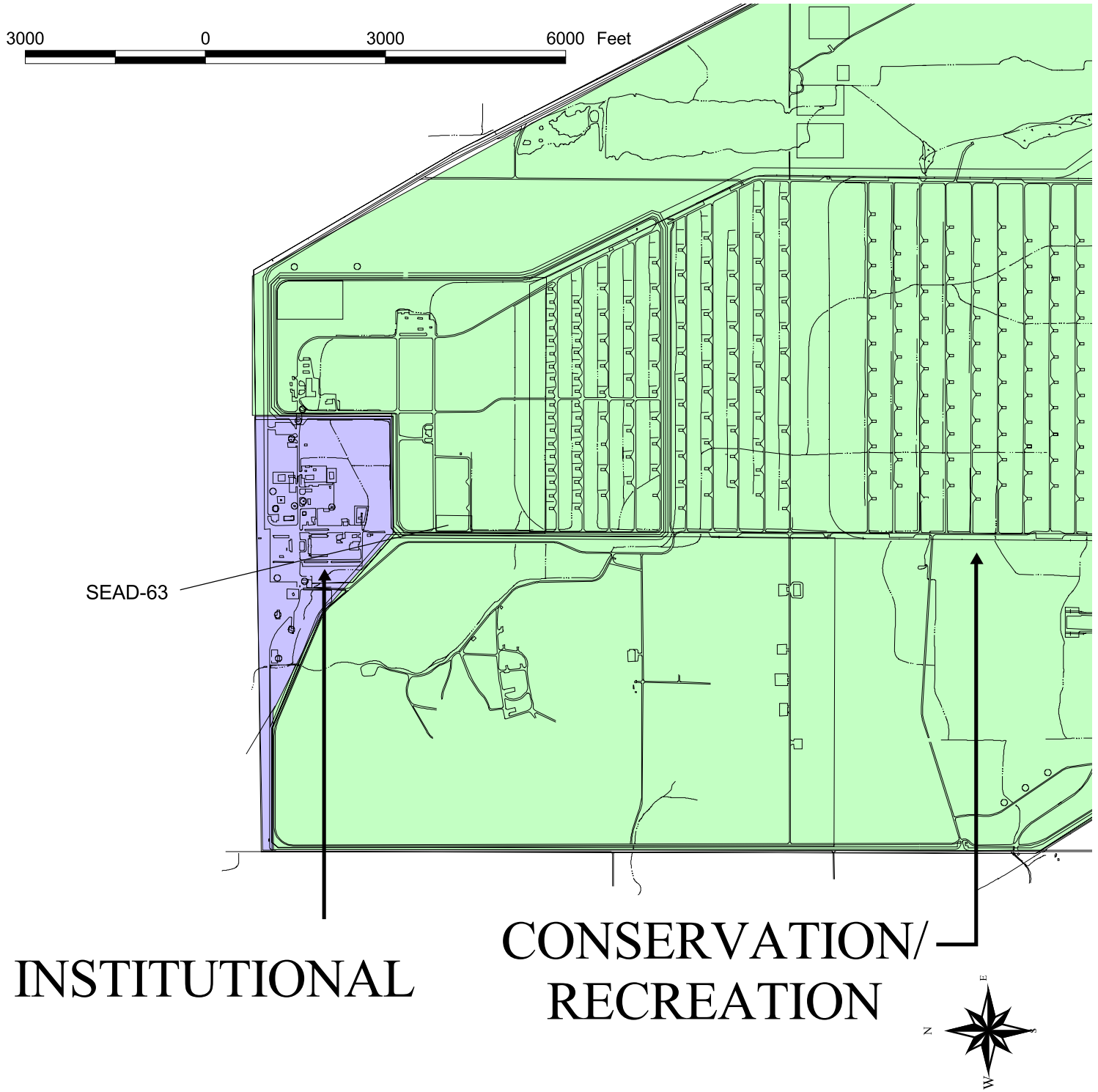


PARSONS

Seneca Army Depot Activity
Proposed Plan
NFA Sites 52, 63, 64B and 64D

Figure 2
Location of NFA SWMUs
Warehouse, Prison, and Southern
Conservation/Recreation Area

o:/seneca/noact/noaction.apr/PRAP 52, 63, 64B, & 64D Figure 2



Airfield

Conservation

Federal

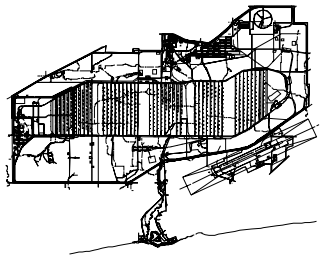
Industrial

Institutional

Prison

Warehouse

Housing



PARSONS

Seneca Army Depot Activity
Proposed Plan
NFA Sites 52, 63, 64B and 64D

Figure 3
Location of NFA SWMUs
Northern Conservation/Recreational Area

o:/seneca/noact/noaction.apr/PRAP B Figure 3