U.S. ARMY ENGINEER DIVISION
HUNTSVILLE, ALABAMA

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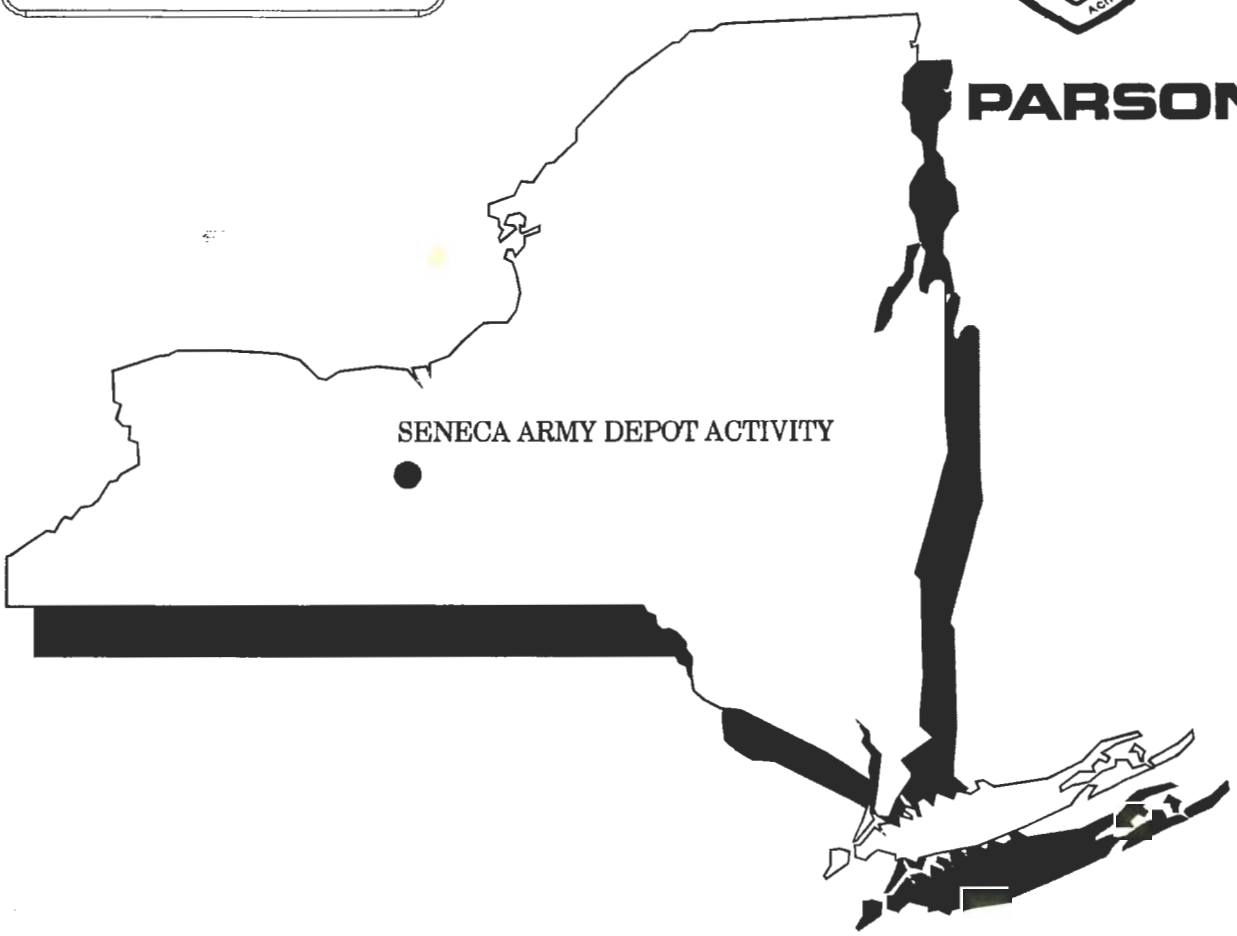

DRAFT

PROPOSED PLAN
TWENTY NO FURTHER ACTION SITES
(SEADs 7, 10, 18, 19, 20, 21, 22, 29, 30, 31, 32, 35, 36, 37, 42, 49, 55, 60, 61, and 65)

SENECA ARMY DEPOT ACTIVITY (SEDA)

MARCH 2003

DRAFT PROPOSED PLAN
TWENTY NO FURTHER ACTION SITES
(SEADs 7, 10, 18, 19, 20, 21, 22, 29, 30, 31, 32, 35, 36, 37, 42, 49, 55, 60, 61, and 65)

SENECA ARMY DEPOT ACTIVITY
ROMULUS, NEW YORK 14541

and

US ARMY CORPS OF ENGINEERS
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March 2003

DRAFT Proposed Plan
Twenty No Further Action Sites
(SEADs 7, 10, 18, 19, 20, 21, 22, 29, 30, 31, 32, 35, 36, 37, 42, 49, 55, 60, 61, and 65)
Seneca Army Depot Activity
Romulus, New York

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Proposed Plan – Draft

Twenty No Further Action SWMUs at the
SENECA ARMY DEPOT ACTIVITY (SEDA)
Romulus New York

March 2003

##

1 PURPOSE OF PROPOSED PLAN

This Proposed Remedial Action Plan (PRAP) presents and summarizes data and information that the United States Army (Army) has assembled in support of its assertion that twenty (20) former solid waste management units (SWMUs) within the Seneca Army Depot Activity (SEDA or Depot) require no further action because threats to human health or the environment resulting from hazardous wastes do not exist. The Proposed Plan identifies the Army's preferred and recommended remedial option (i.e., No Further Action) for the 20 SWMUs, henceforth collectively designated by the Army as the No Further Action (NFA) sites, and provides the justification and rationale for its recommended alternative at each site. Representatives of the Army developed the Proposed Plan with support from the U.S. Environmental Protection Agency, Region II (EPA) 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) 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 20 SWMUs. The Army's preferred remedy for the NFA sites is No Further Action. The 20 NFA sites are SEADs 7, 10, 18, 19, 20, 21, 22, 29, 30, 31, 32, 35, 36, 37, 42, 49, 55, 60, 61, and 65.

This Proposed Remedial Action Plan (PRAP) identifies the preferred remedy and discusses the reasons for this preference. The Army will select a final remedy for the sites only after careful consideration of all comments received during the public comment period, and subsequent to final consultation with the EPA and NYSDEC.

2 COMMUNITY ROLE IN THE SELECTION PROCESS

The Army, the EPA, 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} to {DATE} to provide an opportunity for public participation in the remedy selection process for this site. A public meeting is scheduled for {DATE} at the {LOCATION} beginning at {TIME}.

Dates to remember:

MARK YOUR CALENDAR

[enter start and completion dates of public comment period]

Public comment period on completion report, Proposed Plan and remedy considered

[enter public meeting date]
Public meeting at the [enter meeting location and time.]

At the public meeting, the results of the investigations and the IRM at the sites will be presented along with a summary of the preferred remedy. After the presentation, a question-and-answer period will be held, during which the public can submit verbal or written comments on the ROD.

Comments received at the public meeting, as well as written comments, will be documented in the Responsiveness Summary section of the Record of Decision (ROD). The ROD formalizes the selection of the remedy.

Written comments may be sent to:

Mr. Stephen Absolom
BRAC Environmental Coordinator
Building 123
Seneca Army Depot Activity
Romulus, New York 14541-5001

Information and data summarized within this ROD for each of the 20 No Action SWMUs is presented and described in greater detail within the "Decision Document, Twenty-Two No Further Action Sites" Report (Parsons, March 2002). The requested "No Further Action" determinations for two of the SWMUs (SEAD-1 and SEAD-2) discussed in the referenced report have been postponed pending completion of Resource Conservation and Recovery Act (RCRA) closure actions at these two sites. The Decision Document is submitted to fulfill the Army's obligation to provide a Completion Report that documents the efforts conducted under a CERCLA Remedial Investigation/Feasibility Study (RI/FS) for the identified 20 sites. To better understand the listed sites and the investigations and studies that have been conducted at each location, the public is encouraged to review the project documents at the following repository:

Seneca Army Depot Activity
Building 116
5786 State Route 96
Romulus, New York 14541-5001
(607) 869-1309
Hours: Mon – Fri, 8:30 a.m. – 4:30 p.m.

3 SITE BACKGROUND

The Seneca Army Depot Activity occupies approximately 10,600 acres of land that is located near the Village of Romulus in Seneca County, New York. The military facility has been owned by the U.S. Government and operated by the Army since 1941. 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 above Mean Sea Level (MSL).

On July 14, 1989, the EPA proposed SEDA for inclusion on the National Priorities List (NPL). Supporting its recommendation for listing, the EPA 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 APE-1236 Deactivation Furnace in the east-central portion of the depot, where small arms are destroyed." The EPA recommendation was approved and finalized on August 30, 1990, when SEDA was listed in Group 14 of the Federal Facilities portion of the NPL. The Depot's EPA identification number is NY0213820830.

The Army provided EPA and NYSDEC with a proposed classification for the 72 identified SWMUs at the Depot in 1993. At the time of the submission of its list, 72 SWMUs were classified by the Army. Based on the initial classifications recommended by the Army, 24 were designated as No Action SWMUs, 13 were listed as High Priority areas of concern (AOCs), three were designated as Moderate Priority AOCs, 11 were Moderately-Low Priority AOCs, and 21 were classified as Low Priority AOCs. Once all the SWMUs were identified and categorized, the Army's focus of investigations centered on the SWMUs that were considered designated as higher-level AOCs (e.g., high priority AOCs first, then moderate priority AOCs).

In 1995, SEDA was designated for closure under the Department of Defense's (DoD's) Base Realignment and Closure (BRAC) process. With SEDA's inclusion on the BRAC list, the Army's emphasis expanded from expediting necessary investigations and remedial actions at the High and Moderate Priority sites to include the release of non-affected portions of the Depot to the surrounding community for their reuse for non-military (i.e., industrial, municipal and residential) purposes. Thus, BRAC has required that the Army finalize decisions and actions for SWMUs, regardless of ranking, so that these sites may be released for non-military use.

In support of DoD's BRAC goals for the release of non-affected portions of the Depot to the surrounding community for their reuse for non-military purposes, the Army began preparation of a completion document to summarize and present necessary data and information substantiating its claim that its 24 designated No Action SWMUs satisfied conditions defined in Section 10.3 (b) of the IAG.

"No Action SWMUs shall be those SWMUs from which no release of hazardous substances, pollutants, or contaminants has occurred or from which a release of hazardous waste or substances, pollutants or contaminants has occurred that does not pose a threat to public health, welfare or the environment."

A final copy of the completion report for 22 SWMUs was submitted to the EPA and NYSDEC in March, 2002. This document was titled "Decision Document, Twenty-Two No Further Action Sites" (Parsons, 2002), and provided documentation supporting the Army's claims that the identified sites did "not pose a threat to the public health, welfare or the environment." The 22 SWMUs for which documentation was provided included 20 of the initial 24 No Further Action SWMUs (i.e., SEADs 1, 2, 7, 10, 18, 19, 20, 21, 22, 29, 30, 31, 35, 36, 37, 42, 49, 55, 61, and 65) identified in the SWMU Classification Report (Parsons, 1994), and two of the sites (i.e., SEAD-32 and SEAD-60) initially classified as Low Priority AOCs. Final determinations for six of the initially listed No Action SWMUs (i.e., SEADs 1, 2, 47, 51, 53, and 72) have been deferred from the No Further Action SWMU list due to continuing concerns raised by the EPA and NYSDEC regarding available information. Two Low Priority AOCs (SEADs 32 and 60) were added to the No Further Action SWMU list based on the results of site investigations that were conducted (SEAD-32) or on the completion of an IRM (SEAD-60). The current listing of the No Further Action SWMUs considered in this PRAP is provided in **Table 1**. The locations of the 20 SWMUs proposed for No Further Action are shown with relation to the proposed future land use on **Figure 1**.

4 SITE DESCRIPTIONS

4.1 SEAD-07: Shale Pit

The "Shale Pit," SEAD-07, is an excavation pit that covers an area measuring approximately two acres. SEAD-07 is located north of North Patrol Road in the northwestern corner of the Depot. This SWMU is located in a portion of the Depot where the future land use has been designated as institutional development. The general location of this SWMU is shown on **Figure 1**, and presented in greater detail on **Figure 2**. The Shale Pit is located within 185-acres of land that was transferred by the U.S. Government to KidsPeace. KidsPeace currently uses the transferred land as the location of the Seneca Woods Residential Program.

The Shale Pit was created in 1987 when the Army excavated it to obtain shale that was used for road surfaces at the Depot. Once the excavation was opened, it was used for disposal of construction debris from Depot building and demolition activities. As developed, the Shale Pit holds only concrete, asphalt and wood debris; no other wastes were placed in the Shale Pit during its life. The base of the excavation pit was terminated above the regional groundwater table. No cover material was applied to the debris subsequent to its placement in the pit. Construction debris placed into the pit was inert and free of chemicals that could cause soil and groundwater contamination. Construction debris that is free of chemical contamination is exempt from regulation under New York State Hazardous Waste Regulations, 6 NYCRR Section 360-7.1 (b)(i).

The Army proposed SEAD-07 as a No Further Action SWMU, and this recommendation was documented in the final SWMU Classification Report (Parsons, 1994).

4.2 SEAD-10: Scrap Wood Pile

SEAD-10 was used for the storage of scrap wood generated from site activities. The Scrap Wood Pile encompassed an area measuring approximately 250 feet long by 185 feet wide that is located on the south side of East Kendaia Road near Building 113. This portion of the Depot is designated for planned industrial development. The approximate location of this SWMU is shown on **Figure 1**, while **Figure 2** presents greater detail of the area surrounding this SWMU.

Use of the woodpile began in 1986 and continues in its present location today. Scrap wood from Depot activities is segregated, stored in piles, and is then sold to Depot employees and the public. The storage area is divided into three sections: 1) an area for scrap wood (west pile; 130 feet by 185 feet); 2) an area for disposal of wooden pallets (middle pile; 60 feet by 185 feet); and 3) an area for pressure treated wood and poles (east pile; 60 feet by 185 feet). Scrap wood placed in the SWMU is chemically inert.

SEDA's fire department periodically used wood from the scrap woodpile as fuel for fire training exercises at other locations. Whenever fire-training exercises were conducted, the State of New York was notified prior to any burning.

4.3 SEAD-18: Building 709 – Classified Document Incinerator

During its operational history, SEAD-18, the Classified Document Incinerator in Building 709, was actually located at two different places within the north-central portion of SEDA. Between 1956 and 1983, the first Building 709 was located southwest of Building 707, at the edge of the parking lot near the North Patrol Road. In 1983, the first Building 709 was torn down, and a second building also designated as Building 709, was constructed in an area between Buildings 701 and 702. The approximate location of the second Building 709 is shown on **Figure 1**, and in greater detail on **Figure 3**. Both buildings designated as 709 are located in the north-central portion of SEDA, where the proposed future land use for the site is designated as institutional. Both locations were included in land

that was transferred by the Army to KidsPeace, and is currently used as the location of the Seneca Woods Residential Program. The last incinerator (SEAD-18) was removed prior to the transfer of the land surrounding it to KidsPeace.

The Classified Document Incinerator was a single chamber, propane-fired Washburn and Granger model S-200. As it was configured, the incinerator did not include any form of air pollution control device. The incinerator had a rated capacity of 96 pounds per hour (lb/hr), and SEDA personnel indicate that its normal charging rates was on the order of 30-40 pounds per day (lbs/day) of classified paper documents. During its use, the incinerator was predominantly used to burn classified paper wastes that contained minimal levels of plastic, and possibly some glass waste intermixed.

When the incinerator was used, generated ash was collected and buried in local landfills. Originally, some of the ash may have been disposed at the onsite Ash Landfill (SEAD-06), but during the last years of its use, generated ash was sent off-site to a local municipal landfill for disposal.

At the time of its listing, the Army proposed SEAD-18 as a No Further Action SWMU, and this recommendation was documented in the final SWMU Classification Report (Parsons, 1994).

4.4 SEAD-19: Building 801 – Former Classified Document Incinerator

Between 1956 and 1983, the Army operated a Classified Document Incinerator in Building 801, which is located in the north-central portion of the Depot, within SEAD-12. The land in this portion of the Depot is designated for a future use of conservation/recreation. The approximate location of the SEAD-19 is shown on **Figure 1**, and in greater detail on **Figure 3**.

The incinerator at Building 801 was used to incinerate classified documents. The incinerator is a single chamber, propane-fired Washburn and Granger model S-200 that does not include any air pollution control devices. It has a rated capacity of 96 lb/hr of refuse, but during the time of its use it had a normal charging rate of 30-40 pounds per day (lbs/day) of classified paper documents. Personnel of SEDA indicate that it was predominantly used to burn paper wastes (95%) with some microfilm intermixed.

The incinerator is currently not in use, and it is no longer permitted for use. When the incinerator was used, generated ash was collected and buried in local landfills. Originally, some of the ash may have been disposed at the onsite Ash Landfill (SEAD-06), but during the last several years of its use, generated ash was sent off-site to a local municipal landfill.

The Army proposed that SEAD-19 be listed as a No Further Action SWMU, and this recommendation was documented in the final SWMU Classification Report (Parsons, 1994).

4.5 SEAD-20: Sewage Treatment Plant No. 4

Sewage Treatment Plant (STP) No. 4 is located on the south side of West Romulus Road in the east central portion of the Depot. Land surrounding this facility is designated for planned industrial development. The general location of SEAD-20 is shown on **Figure 1**, and in greater detail on **Figure 2**.

STP No. 4 was designed to treat a maximum flow capacity of 250,000 gallons per day (gpd). Inlet flow received includes domestic wastewater with a minimal component of industrial discharges consisting primarily of boiler plant blowdown fluids. The majority of wastewater received originates from the administration area, the warehouse area, the Military Elliot Acres Housing Complex, and the adjacent civilian communities of Romulus and Varick, New York.

STP No. 4 was put online in 1942. Unit operations

include a bar screen, a wet well, a dual-chambered Imhoff tank, a covered trickling filter containing plastic media, a secondary clarifier, and two sludge drying beds (each measuring approximately 35 feet by 35 feet). The effluent from STP No. 4 is discharged to an unnamed adjacent stream that flows northerly and enters a wetland that is on the Depot property. The wetlands are used as a substitute for in-situ tertiary treatment. Sludge generated in STP No. 4 is periodically removed from the drying beds and stored in the sewage sludge waste piles that are located at SEAD-05, which are located in the east-central portion of the Depot.

STP No. 4 operated, and continues to operate today, under two State of New York permit authorizations. STP No. 4's State Pollutant Discharge Elimination System (SPDES) number is NY0021296 and its NYSDEC identification number is 8-4530-00006/00035.

The Army initially proposed SEAD-20 as a No Further Action SWMU, and this recommendation was documented in the final SWMU Classification Report (Parsons, 1994).

4.6 SEAD-21: Sewage Treatment Plant No. 715

STP No. 715 is located in the north-central to northwestern portion of Depot, west of the Depot's former north gate where the perimeter fence and the North Patrol Road split. STP No. 715 is located within a portion of the Depot where the designated future land use is institutional. The approximate location of SEAD-21 is shown on **Figure 1** and in greater detail on **Figure 3**. STP No. 715 is located on land that was transferred from the Army to KidsPeace.

When the Army operated STP No. 715, it had a permitted wastewater capacity of 300,000 gpd. The design capacity of the facility is 750,000 gpd. The treatment plant began operations in 1956, and the Army ceased operation of the plant on January 1, 1996 when the troop barracks located in the northern portion of the Depot were closed. During the period of its operation, the wastewater treatment plant only received wastewater from domestic sources.

STP No. 715's equipment inventory consists of a grinder pump and comminutor, a primary settling chamber, two rotating biological contractors, a secondary clarifier, sand filters, a sludge holding tank, a sludge digestion tank (old Imhoff tank), and two concrete-lined sludge drying beds with gravel and sand floors (approximately 40 feet by 15 feet each). During its life, sludge produced within STP No. 715 was periodically removed and transported to SEAD-05 where it was stored in the sewage sludge waste piles. The treated effluent from STP No. 715 was discharged to Reeder Creek.

The Army initially proposed that SEAD-21 be listed as a No Further Action SWMU, and this recommendation was documented in the final SWMU Classification Report (Parsons, 1994).

4.7 SEAD-22: Sewage Treatment Plant No. 314

STP No. 314 was located in the east central part of Depot where the land's future use is designated as planned industrial development. **Figure 1** shows the approximate location of SEAD-22, while **Figure 2** shows the area surrounding SEAD-22 in greater detail.

The historic STP No. 314 was constructed in 1941 and continued to operate until October of 1978. In 1978, STP No. 314 was converted to a lift station that serviced STP No. 4 (SEAD-20). The lift station currently continues to occupy the site of the former STP facility. All components of the original STP No. 314 facility were removed or filled and covered with shale and soil subsequent to the shutdown of the plant. The area is grassy, but several pieces of the former facility's foundation are still evident at the site.

The historic STP No. 314 included a bar screen, an

Imhoff tank, a 30-foot diameter trickling filter, a secondary clarifier, a chlorination chamber, and a sludge drying bed. The rated wastewater flow capacity of the plant was 100,000 gpd. The wastewater treated at the historic STP No. 314 originated from domestic-type sources only; industrial wastewater was not treated in the facility. Once treated, the effluent from the STP No. 314 was discharged to Kendaia Creek. There is no evidence that a release of solid or hazardous waste occurred from the STP No. 314.

The Army initially proposed that SEAD-22 be designated as a No Further Action SWMU, and this recommendation was documented in the final SWMU Classification Report (Parsons, 1994).

4.8 SEAD-29: Building 732 – Underground Waste Oil Tank

SEAD-29 is a former 550-gallon, waste-oil underground storage tank (UST) that was used to store waste oil generated from the automotive maintenance shop. The Army discontinued the use and removed the tank under the New York UST Program before December 31, 1998 in order to avoid a required regulatory upgrade. The tank was located on the southeast side of Building 732, which is located within the northern portion of the Depot. This portion of the Depot is designated for institutional use. The approximate location of SEAD-29 is shown on **Figure 1**, while the vicinity is shown in greater detail on **Figure 2**.

The tank was originally installed in 1981 and was constructed of fiberglass with galvanized steel piping. The waste oil stored in the tank was used as a fuel supplement in the boilers located in Building 718 (SEAD-35). Previously, the waste oil was also used as a fuel supplement for the boilers located in Buildings 319 (SEAD-37) and 121 (SEAD-36).

The Army initially proposed that SEAD-29 be listed as a No Further Action SWMU, and this recommendation was documented in the final SWMU Classification Report (Parsons, 1994).

4.9 SEAD-30: Building 118 – Underground Waste Oil Tank

SEAD-30 was a former waste-oil UST that was located on the southern side of Building 118, near the intersection of South Street and Second Avenue in the east central portion of the Depot. This tank was removed in 1992. This SWMU is located in the portion of the Depot where the future use is planned industrial development. The approximate location of SEAD-30 is shown on **Figure 1**, while the area surrounding this SWMU is shown in greater detail in **Figure 2**.

The tank was installed in 1941 and it was used to store waste automotive oil generated from Depot vehicle maintenance activities. The waste oil stored in the tank was used as a fuel supplement in the boilers located in Buildings 718 (SEAD-35), 121 (SEAD-36) and 319 (SEAD-37). The 550-gallon tank was constructed of steel and it was buried approximately sixteen inches below the surface in native, overburden materials that were grass covered. Galvanized piping was used for the transfer of fluids to and from the tank.

At the time of the tank's removal, there was no evidence of any release around the tank. A NYSDEC representative, who oversaw the removal, did not require any confirmational soil sampling when the excavation was open.

The Army initially proposed that SEAD-30 be designated as a No Further Action SWMU, and this recommendation was documented in the final SWMU Classification Report (Parsons, 1994).

4.10 SEAD-31: Building 117 – Underground Waste Oil Tank

SEAD-31 was an waste-oil UST that was located on the southwest side of Building 117 between Second and Third Avenue. The tank was removed from the

ground on October 7, 1999. This site is located in the east central portion of the Depot, in an area where the future land use is planned industrial development. The approximate location of SEDA-31 is displayed on **Figure 1**; a close-up view of the location of SEAD-31 is provided on **Figure 2**.

The former underground tank was constructed of fiberglass and was equipped with galvanized steel piping. The tank had a capacity of 2,005 gallons and was buried approximately four feet underground in native soil. The ground surface above the tank was grass covered, and the tank site was surrounded by Building 117 on one side, grass on one side, and asphalt pavement on two sides.

Waste oil was stored in the tank for subsequent use as a fuel supplement in the boilers located at Building 718 (SEAD-35). Previously, it was also used as a fuel supplement in the boilers located in Buildings 319 (SEAD-37) and 121 (SEAD-36).

The Army initially proposed SEAD-31 as a No Further Action SWMU, and this recommendation was documented in the final SWMU Classification Report (Parsons, 1994).

4.11 SEAD-32: Building 718 – Underground Waste Oil Tanks

SEAD-32 is comprised of two waste-oil underground storage tanks (USTs - Tanks A and B). Tank A (State Identification Number 8-416118-194) has a maximum storage capacity of 40,000 gallons, while Tank B (State Identification Number 8-416118-195) has a maximum storage capacity of 20,000 gallons. These tanks are currently used for the storage of Number 6 (No. 6) fuel oil. The approximate location of SEAD-32 is shown on **Figure 1**, and in greater detail on **Figure 3**. The two underground storage tanks comprising SEAD-32 were included in the property transferred by the Army to KidsPeace.

Once installed in 1956, the underground tanks of SEAD-32 have primarily been used for the storage of No. 6 fuel oil. With the imposition of RCRA requirements in 1980 – 1981, SEDA altered its historic waste-oil management practices, and tried to recover energy value from waste oil that was generated at the Depot. As such, waste oil was routinely blended with the No. 6 fuel oil whenever bulk (i.e., 7,000-gallon) deliveries occurred. The combined No. 6 fuel/waste oil mixture was used as fuel for space heating and generation of hot water supplies. In 1989, the practice of blending waste and virgin oil in SEAD-32 tanks was discontinued when a new 10,000 gallon dual walled fiberglass waste-oil tank with an interstitial space monitoring system was constructed at Building 718 (SEAD-61).

The Army initially proposed that SEAD-32 be designated as a Low Priority AOC, and this recommendation was documented in the final SWMU Classification Report (Parsons, 1994).

4.12 SEAD-35: Building 718 - Waste Oil-Burning Boilers

SEAD-35 consists of three oil-fired boilers that are located in Building 718, each of which is designed to burn either fuel oil or waste-oil/ fuel oil mixtures. Building 718 is located in the north-central portion of the Depot in an area where the land use is designated as institutional. Building 718, and its contents, was included in the property that was transferred by the Army to KidsPeace. The approximate location of Building 718 is shown on **Figure 1**; a close-up view of the location of this SWMU is provided on **Figure 3**.

The three boilers units were originally used to produce heat that was used for space heating and for the production of hot water. Each of the boilers is rated at a 10 million British Thermal Unit per hour (MBtu/hr) capacity, with a stated combustion rate of 15.5 gallons per hour (gph). Between 1982 and 1989, the Army commonly used a mixture of No. 6 oil and waste oil as the fuel for these boilers. After 1989, SEDA discontinued use of waste oil as a fuel supplement due to difficulties that were encountered

during the preparation of the waste oil/No. 6 oil blends to yield proper combustion characteristics. Therefore, after 1989 only No. 6 fuel oil was burned in the three boilers. The three boilers remain functional today, although their use by the Army was terminated in 1996 when Building 718 was shut-down.

The Army initially proposed that SEAD-35 be listed as a No Further Action SWMU, and this recommendation was documented in the final SWMU Classification Report (Parsons, 1994).

4.13 SEAD-36: Building 121 - Waste Oil-Burning Boilers

Building 121 contains three boilers, two of which are capable of burning waste-oil and fuel oil mixtures. The third was originally designed to burn coal. Building 121 is located in the east central portion of the Depot in an area of the site where the future land use is planned industrial development. The location of Building 121 (SEAD-36) is shown on **Figure 1**, and the area surrounding this SEAD is shown in greater detail on **Figure 2**.

All three of the boilers are rated at 6.6 MBtu/hr capacity and the stated combustion rate of oil for the two waste-oil fired units is 10.6 gph. No fuel consumption rate capacity is available for the coal-fired unit. A waste oil/No. 6 oil blend was burned in the oil-fired boilers between 1982 and 1989. Waste oil was never fired in the coal-fired unit.

The two oil-fired boilers were originally used to produce heat that was used for space heating and the production of hot water. There is no information available to indicate that waste oil was released from either of the burners during the period of their use. The two boilers remain functional today, but they no longer burn a waste oil/fuel oil blend due to difficulties associated with properly balancing the blend and combustion conditions. No. 6 oil is the only fuel burned in the two oil-fired boilers today.

The Army initially proposed that SEAD-36 be designated as a No Further Action SWMU, and this recommendation was documented in the final SWMU Classification Report (Parsons, 1994).

4.14 SEAD-37: Building 319 - Waste Oil-Burning Boilers

Building 319 contains two boilers (i.e., Boiler A and B) that are capable of burning waste oil/fuel oil blends. Building 319 (SEAD-37) is located in the east central portion of SEDA in a portion of the Depot where the future land use is designated as planned industrial development. The approximate location of SEAD-37 is shown on **Figure 1**, and the area surrounding this SEAD is shown in greater detail in **Figure 2**.

Boilers A and B have rated capacities of 12.0 and 16.1 MBtu/hr, respectively. Each boiler has a combustion rate of 32.9 gph of fuel. Between 1982 and 1989, both of these units used a waste oil/No. 6 fuel oil mixture as fuel for space heating and hot water production. There is no information available to indicate that waste-oil was released from either of the boilers during the time of their use with waste oil. The boilers remain functional today, but they are no longer fired with waste oil due to difficulties associated with properly balancing fuel blend and combustion conditions. Currently, these units only burn No. 6 oil as fuel.

The Army initially proposed SEAD-37 as a No Further Action SWMU, and this recommendation was documented in the final SWMU Classification Report (Parsons, 1994).

4.15 SEAD-42: Building 106 – Preventative Medicine Laboratory

According to information provided in a USATHAMA published site inspection report (USATHAMA, 1980) for SEDA, Building 106 once housed a Preventative Medicine Laboratory. This building is located in the east, central portion of SEDA, in the area designated

for planned industrial development. The approximate location of Building 106 is displayed on **Figure 1**, and the area surrounding the building is shown in greater detail in **Figure 2**.

Building 106 is a brick building measuring 167 feet long by 63 feet wide that was constructed in approximately 1975. Reportedly, the Preventive Medicine Laboratory was located in the northwest section of Building 106. This laboratory is believed to have measured 12 feet by 28 feet in size. Based on information provided in the 1980 USATHAMA report, clinical laboratory work and potable water analyses were performed in the laboratory.

The Army initially proposed SEAD-42 as a No Further Action SWMU, and this recommendation was documented in the final SWMU Classification Report (Parsons, 1994).

4.16 SEAD-49: Building 356 – Columbite Ore Storage Area

SEAD-49 is located in the southeastern portion of the Depot in a parcel of land whose future use is designated as warehousing space. The approximate location of Building 356 is shown on **Figure 1**. Greater detail of the area surrounding Building 321 is provided on **Figure 4**.

Building 356 is a concrete block warehouse with concrete floors. The warehouse measures 200 feet wide by 1,000 feet long and is divided into 5 separate cells. Each cell is separated from the next by a concrete masonry firewall.

Columbite ore, a mixture of the oxides of iron, manganese, niobium, and tantalum, was stored in Buildings 324, 356, and 357 at SEDA. Although neither niobium nor tantalum has any naturally occurring radioactive isotopes, radium-226 and thorium-232 may be present in the mixture as impurities. Available information indicates that the Columbite ore was stored in Building 324 from 1954 to 1973, Building 357 from 1954 to 1984 – 1985, and Building 356 from 1984 – 1985 to 1993. The ore was originally kept in burlap bags, but later it was stored in 55-gallon drums. After the ore was moved from one building to the next, the former storage location was swept clean. In May 1993, all of the Columbite ore (5,284 drums) was transferred from Building 356 to a DLA facility in Binghamton, New York. Subsequent to this time, Building 356 was swept cleaned.

The Army initially proposed that SEAD-49 be listed as a No Further Action SWMU, and this recommendation was documented in the final SWMU Classification Report (Parsons, 1994).

4.17 SEAD-55: Building 357 – Tannin Storage

Building 357 is located in the southwestern portion of SEDA, in land where the planned future use is warehousing. The approximate location of SEAD-55 is presented on **Figure 1**, and greater detail of the area is provided on **Figure 4**.

Building 357 is a concrete block warehouse built on a concrete foundation that measures 200 feet wide by 1,000 feet long and consists of five (5) separate sections. The individual sections are divided by a concrete masonry firewall.

As is indicated above, Building 357 was used for storage of Columbite ore between the dates of 1954 and 1984 – 1985 when the ore was transferred to Building 356 (SEAD-49). Subsequent to its use for storage of Columbite ore, the section was swept clean of all residues. Building 357 was also used for storage of Tannin between the dates of approximately 1978 and roughly 1994. The Army used Tannin as a chemical treatment additive for its boiler plant water. Tannin was received as a dry solid in bags, and the bags were stored in Section 2 of Building 357 on pallets. Section 2 of Building 357 was swept clean once storage of Tannin ceased.

The Army initially proposed SEAD-55 as a No Further Action SWMU, and this recommendation was

documented in the final SWMU Classification Report (Parsons, 1994).

4.18 SEAD-60: Oil Discharge Area Adjacent to Building 609

SEAD-60 is located in the southeastern portion of the Depot in a portion of the site where the future land use is designated as institutional (i.e., Prison). The approximate location of this SWMU is identified on **Figure 1**, and is shown in greater detail on **Figure 4**. The area encompassing SEAD-60 was transferred by the Army to the State of New York, and is now included in the land that comprises the grounds of New York State Department of Correctional Services' Five Points Correctional Facility.

Evidence of a release of oil in this area was first observed in 1989. The extent of the noted release area measured approximately 25 feet long by 10 feet wide and this area was adjacent to Building 609. SEDA personnel reported that the spill area was caused by a release from a pipe that was located inside of Building 609.

An interim remedial measure (IRM) was undertaken at SEAD-60. On March 3 and 4, 1999 approximately 150 cubic yards of soil from the release area were excavated and stockpiled in the vicinity of the Deactivation Furnace (SEAD-17). This soil was subsequently used as the feedstock during a low temperature thermal desorption (LTTD) demonstration scheduled for the Deactivation system. This demonstration occurred in August and September of 2000. The IRM successfully resulted in the elimination of all potential contamination once believed to be present. The performance and completion of the IRM was documented in a letter to the Mr. Thomas Grasek at the Depot issued by NYSDEC Division of Environmental Remediation (Scott Rodabaugh, P.E.), dated July 13, 1999.

The Army initially proposed that SEAD-60 be classified as a Low Priority AOC, and this recommendation was documented in the final SWMU Classification Report (Parsons, 1994).

4.19 SEAD-61: Building 718 – Underground Waste Oil Storage Tank

SEAD-61 is an underground waste oil storage tank that is located near Building 718 in the north-central portion of the Depot. This SWMU is located on land that is designated for institutional use. The approximate location of this SWMU is shown on **Figure 1**, while additional detail of the area is provided on **Figure 3**. The underground storage tank that comprises SEAD-61 was included in the property transfer between the Army and KidsPeace.

This tank was previously used for the storage of waste oil prior to its burning in the adjacent boiler plant, located in Building 718 (SEAD-35). The tank is double-wall fiberglass construction and has a storage capacity of 10,000 gallons. As designed and constructed, the tank meets the specifications of 6 NYCRR Part 614. The tank was installed in 1989 and remains in the ground to this day; however, this tank was pumped empty in approximately 1996 when Army activities at the northern portion of the Depot were terminated.

The Army initially proposed SEAD-61 as a No Further Action SWMU, and this recommendation was documented in the final SWMU Classification Report (Parsons, 1994).

4.20 SEAD-65: Acid Storage Areas

SEAD-65 consists of three separate areas, each of which is located near the central western border of the Depot. The three areas are located in the portion of SEDA that is designated as conservation/recreation land. The approximate location of these three areas is shown on **Figure 1**. A close-up view of the location is provided in **Figure 5**.

SEAD-65A measures approximately 120 feet by 130 feet and is the most southerly situated of the three

storage areas. During a site inspection conducted on November 27, 1990, portions of a concrete foundation were observed in the area. Otherwise, the area was covered with vegetation including scrub brush and weeds.

SEAD-65B measures approximately 65 feet by 100 feet and is the centrally located of the three areas. Remnants of a concrete foundation were also found at this site during the site inspection. The area is primarily covered with weeds and wild grass vegetation.

SEAD-65C is approximately 50 feet by 100 feet in size and is the most northerly located of the three former storage areas. A flagpole and a concrete pad were found in this area on the day of inspection (November 27, 1990); however, like the other two portions of this SWMU, the area was found to be predominantly overlain by natural scrub brush and grass vegetation.

Each of these areas was reportedly used for the storage of acids, although no information is available to conclusively determine whether acid storage was actually performed in these areas. Additionally, if acid storage did occur in these areas, no specific information is known relative to the dates when such storage occurred.

The Army initially proposed SEAD-65 as a No Further Action SWMU, and this recommendation was documented in the final SWMU Classification Report (Parsons, 1994).

5 SITE INVESTIGATIONS AND STUDIES

5.1 SEAD-07: Shale Pit

A site inspection was conducted at the Shale Pit (SEAD-07) on September 13, 1990 and indicated that approximately 50 percent of the pit was filled with construction debris.

5.2 SEAD-10: Scrap Wood Pile

Samples of the ash produced by the combustion of scrap wood in SEAD-10 were collected on September 29, 1992 and analyzed for TCLP constituents prior to their disposal by Waste Management – Syracuse NY. A complete copy of the results obtained from this analysis are provided in Appendix A of the Final Decision Document, Twenty-Two No Further Action Sites, Seneca Army Depot Activity (Parsons, 2002), and are summarized in **Table 2** at the end of this document. The results of the analysis indicate that the measured levels did not exceed the regulatory limits.

5.3 SEAD-18: Building 709 – Classified Document Incinerator

According to SEDA personnel, the ash recovered from the incinerator was tested for Extraction Procedure (EP) Toxicity leaching potential via Method SW-846 1310A prior to disposal, and the analytical results indicated that none of the measured levels failed criteria in effect at the time.

5.4 SEAD-19: Building 801 – Former Classified Document Incinerator

According to SEDA personnel, the ash recovered from the incinerator was tested for EP Toxicity leaching potential prior to disposal, and the analytical results indicated that none of the measured levels failed criteria in effect at the time.

5.5 SEAD-20: Sewage Treatment Plant No. 4

No site investigations have been conducted within or in the immediate vicinity of STP No. 4, SEAD-20.

5.6 SEAD-21: Sewage Treatment Plant No. 715

A review of historic operational records maintained by the Army for this facility indicated that violations of the facility's SPDES permit were recorded in 1986

when excessive levels of biological oxygen demand and total suspended solids were measured in the plant's effluent. No other SPDES violations were recorded for the facility prior to its closure in 1996. No site investigations have been conducted within or in the immediate vicinity of STP No. 715, SEAD-21.

5.7 SEAD-22: Sewage Treatment Plant No. 314

No site investigations have been conducted within or in the immediate vicinity of STP No. 314, SEAD-22.

5.8 SEAD-29: Building 732 – Underground Waste Oil Tank

Evidence of possible surficial releases near SEAD-29 from tank filling operations was observed during a site inspection that was conducted in 1990. The tank was pressure tested on September 23, 1992 when it received a rating of +0.012 gallons per hour and was deemed to be tight. The tank was decommissioned on July 13, 1993. At the time of decommissioning, the contents of the tank were pumped-out, leaving no more than 1 inch of used oil in the bottom. The Army retained a private contractor to remove the tank prior to December 31, 1998. The tank was removed from the ground and all discolored surficial soil surrounding the former tank was removed under the State of New York's UST Program.

5.9 SEAD-30: Building 118 – Underground Waste Oil Tank

The tank was removed in 1992, and at the time of its removal, there was no evidence of any release around the tank. A NYSDEC representative, who oversaw the removal, did not require any confirmational soil sampling when the excavation was open.

5.10 SEAD-31: Building 117 – Underground Waste Oil Tank

The former 2,005-gallon waste oil tank that comprised SEAD-31 was last tightness tested in 1996 and according to SEDA personnel, the tank passed the 1996 test. The tank was removed on October 7, 1999.

5.11 SEAD-32: Building 718 – Underground Waste Oil Tanks

A limited site investigation was performed in SEAD-32 in 1994 to investigate possible releases of No. 6/waste oil to the soil and groundwater. Two soil borings and two groundwater wells were installed and sampled as part of this investigation.

The results of the soil sampling indicated that two low levels of total petroleum hydrocarbons (TPH – 90 and 81 ppm), and one hit of methylene chloride were found in soil. No other volatile organic compounds were detected in the samples analyzed. The single value reported for methylene chloride (1 ug/Kg) was believed to be a laboratory artifact and is below NYSDEC's Technical and Administrative Guidance Memorandum # 4046 (TAGM) recommended soil cleanup objective of 100 ug/Kg.

The results of the groundwater investigation indicate that no volatile organic compounds were detected in groundwater, while one well contained TPH (MW32-1 at 0.69 ppm).

Refer to Appendix B of the Final Decision Document, Twenty-Two No Further Action Sites, Seneca Army Depot Activity (Parsons, 2002) for full data tables from this sampling event. Summary tables from this event are provided as **Table 3** and **4**.

5.12 SEAD-35: Building 718 - Waste Oil-Burning Boilers

No site investigations have been conducted at SEAD-35, the former Waste Oil Burning Boilers in

Building 718.

5.13 SEAD-36: Building 121 - Waste Oil-Burning Boilers

No site investigations have been conducted at SEAD-36, the former Waste Oil Burning Boilers in Building 121.

5.14 SEAD-37: Building 319 - Waste Oil-Burning Boilers

No site investigations have been conducted at SEAD-37, the former Waste Oil Burning Boilers in Building 319.

5.15 SEAD-42: Building 106 – Preventative Medicine Laboratory

A site inspection and interview was performed at Building 106 on November 28, 1990 and the results of this inspection/interview were unable to confirm the accuracy of the prior information that indicated that a Preventative Medicine Laboratory existed. Building personnel stated that they were unaware of this laboratory. They further stated that the laboratory used for clinical analyses was not the area shown as the Preventive Medicine Laboratory on historic construction drawings, but was an area located southeast and identified as the Clinical Analysis Laboratory. They also stated that potable water analyses were not conducted in the building, as samples collected for this purpose were shipped to Fort Drum for analysis.

5.16 SEAD-49: Building 356 – Columbite Ore Storage Area

Personnel of NYSDEC and NYSDOH performed a radiological survey of SEAD-49 (including Buildings 324, 356, and 357) in June of 1993, approximately two weeks after the Columbite ore had been removed. The results of these surveys are presented in Appendix C of the Final Decision Document, Twenty-Two No Further Action Sites, Seneca Army Depot Activity (Parsons, 2002). Summary results from Building 356 are presented in **Table 5**. Based on these results, NYSDEC personnel recommended a "No Action" classification for SEAD-49.

5.17 SEAD-55: Building 357 – Tannin Storage

Personnel of NYSDEC and NYSDOH performed a radiological survey of Building 357 as part of the investigation of former Columbite ore storage facilities at SEDA. The results of these surveys are presented in Appendix C of the Final Decision Document, Twenty-Two No Further Action Sites, Seneca Army Depot Activity (Parsons, 2002). Summary results from Building 357 are presented in **Table 6**.

No evidence or records of a release of Tannin in Building 357 were observed or found. As Tannin was received and stored in bags stacked together in wooden frames, it is unlikely that a release could have occurred during storage. If a bag did break, and Tannin was released, the release would be contained by the concrete floor and could be cleaned up according to proper procedures.

5.18 SEAD-60: Oil Discharge Area Adjacent to Building 609

An expanded site inspection of SEAD-60 was performed in 1994 (Parsons, April 1995). Under this effort, nine soil samples were collected and analyzed from the area of the historic spill. Additionally, three groundwater, three surface water and three sediment samples were collected from the area surrounding the release. Samples were analyzed for volatile and semi-volatile organic compounds, polychlorinated biphenyls and pesticides, metals and total petroleum hydrocarbons. Resulting data for the soils indicated that there was evidence that volatile and semi-volatile organic compounds (primarily comprised of PAHs), polychlorinated biphenyls, total petroleum hydrocarbons and metals were present in the soils, especially in the shallower soils that were

collected. Soil, groundwater, surface water and sediment data are provided in **Tables 7**, **8**, **9**, and **10**.

Groundwater samples indicated the presence of two volatile organic compounds, one pesticide, total petroleum hydrocarbons and several metals; however, in many cases the highest hits found were seen in the sample collected from the upgradient well. Metals were the only analytes detected in the surface water samples. Sediment samples contained many of the same semi-volatile organic compounds that were found in the soil samples, but typically these were found at significantly lower levels than were seen in the soil samples. All of the data are presented in tabular form located in Appendix D of the Final Decision Document, Twenty-Two No Further Action Sites, Seneca Army Depot Activity (Parsons, 2002).

An interim remedial measure (IRM) was undertaken at SEAD-60. On March 3 and 4, 1999 approximately 150 cubic yards of soil from the release area were excavated and stockpiled in the vicinity of the Deactivation Furnace (SEAD-17). This soil was subsequently used as the feedstock during a low temperature thermal desorption (LTTD) demonstration scheduled for the Deactivation system. This demonstration occurred in August and September of 2000. The IRM successfully resulted in the elimination of all potential contamination once believed to be present. The performance and completion of the IRM was documented in a letter to the Mr. Thomas Grasek at the Depot issued by NYSDEC Division of Environmental Remediation (Scott Rodabaugh, P.E.), dated July 13, 1999.

5.19 SEAD-61: Building 718 – Underground Waste Oil Storage Tank

No site investigations have been conducted at SEAD-61, the Underground Waste Oil Storage Tank, at Building 718.

5.20 SEAD-65: Acid Storage Areas

No evidence of any releases was observed in any of the three areas during the November 1990 inspection.

A limited site inspection was performed in 1993 and surficial soil samples (0 to 6 inches) were collected from fifteen locations in the three acid storage areas. One soil sample was collected from the corner of each of the storage areas, while the last sample was collected from the approximate center of each area. These samples were analyzed in the field for pH. The results of these tests are presented on **Table 11**, below. All samples tested were found to have a pH in the range of 6.59 to 8.09. These levels of pH are in the norrnal range for soils and do not provide evidence of a release.

6 REGULATORY STATUS

6.1 SEAD-07: Shale Pit

Activities conducted in SEAD-07 are exempt from regulation by the 6 NYCRR Subpart 360-7.1 (b)(i) that states, "sites at which only recognizable uncontaminated concrete, asphalt pavement, brick, soil or stone is placed are exempt from regulation." The Shale Pit is located within the 185-acres of land that was transferred by the U.S. Government to KidsPeace. The transferred land is currently used by KidsPeace as the location of the Seneca Woods Residential Program. The Army recommends that this SWMU be designated a "No Further Action" site under CERCLA.

6.2 SEAD-10: Scrap Wood Pile

Scrap wood generated at the Depot is still managed at SEAD-10. The Army recommends that this SWMU be designated a "No Further Action" site under CERCLA.

6.3 SEAD-18: Building 709 – Classified Document Incinerator

During the time of its use, the operations of the incinerator were subject to conditions of an air discharge permit issued by the NYSDEC. In the 1990s when its use was discontinued, the incinerator's operating permit was allowed to expire. The Classified Document Incinerator was located within the 185-acres of land that was transferred by the U.S. Government to KidsPeace in 2000. Prior to the transfer of the property, the incinerator was dismantled and removed from the site by the Army. The Army recommends that this SWMU be designated a "No Further Action" site under CERCLA.

6.4 SEAD-19: Building 801 – Former Classified Document Incinerator

The incinerator is not currently in use. However, its use is covered by Certificate to Permit Regulated Activities C453089-00460801BNR. Building 801 is located within a portion of the Depot that is currently being investigated under the ongoing SEAD-12 RI/FS program. The Army recommends that this SWMU be designated a "No Further Action" site under CERCLA.

6.5 SEAD-20: Sewage Treatment Plant (STP) No. 4

Sewage Treatment Plant No. 4 is currently operating under two permit authorizations. Its State Pollutant Discharge Elimination System (SPDES) number is NY0021296 and its NYSDEC identification number is 8-4530-00006/00035 that expires on May 1, 2004. Based on historic information, there are no indications that SPDES violations have occurred. The Army recommends that this SWMU be designated a "No Further Action" site under CERCLA.

6.6 SEAD-21: Sewage Treatment Plant No. 715

During its operation by the Army, operation of STP No. 715 was regulated under NYSDEC authorization number 8-4530-00006/0003 (expiration date: May 1, 2004) and under SPDES Permit No. NY0021296. The Army discontinued its use in 1995, when the operations at the North End of the Depot terminated. STP No. 715 is located within the 185-acres of land that was transferred by the U.S. Government to KidsPeace in 2000. The Army recommends that this SWMU be designated a "No Further Action" site under CERCLA.

6.7 SEAD-22: Sewage Treatment Plant No. 314

No SPDES Permit was required for the operation of STP No. 314 during the time of the treatment plant's operation. The Army recommends that this SWMU be designated a "No Further Action" site under CERCLA.

6.8 SEAD-29: Building 732 – Underground Waste Oil Tank

New York State's tank designation for this unit was 8-416118-059 prior to its removal. The tank was removed. The Army recommends that this SWMU be designated a "No Further Action" site under CERCLA.

6.9 SEAD-30: Building 118 – Underground Waste Oil Tank

This tank was identified as EPA Tank #118; its State of New York identification number was 208. This tank was removed. The Army recommends that this SWMU be designated a "No Further Action" site under CERCLA.

6.10 SEAD-31: Building 117 – Underground Waste Oil Tank

The tank was removed as part of base closure activities. The NYSDEC identification number for the tank was NYS 8-416118-025, while the US EPA number was 117. The Army recommends that this SWMU be designated a "No Further Action" site under CERCLA.

6.11 SEAD-32: Building 718 – Underground Waste Oil Tank

The government agency that regulates this unit is NYSDEC's Region 8 Water Division with input from the Federal Projects Section, Division of Hazardous Waste Remediation. The Army recommends that this SWMU be designated a "No Further Action" site under CERCLA.

6.12 SEAD-35: Building 718 - Waste Oil-Burning Boilers

The three boilers were regulated under NYSDEC Division of Air Resources Emission Point Source Permit Identification Number 453089-0046-07183. The Army recommends that this SWMU be designated a "No Further Action" site under CERCLA.

6.13 SEAD-36: Building 121 - Waste Oil-Burning Boilers

All of these units are regulated under NYSDEC Division of Air Resources Emission Point Source Permit Identification Number 453089-0046-00121. The Army recommends that this SWMU be designated a "No Further Action" site under CERCLA.

6.14 SEAD-37: Building 319 - Waste Oil-Burning Boilers

The NYSDEC Division of Air Resources Identification Number for the two boiler units is 453089-0046-00319. The Army recommends that this SWMU be designated a "No Further Action" site under CERCLA.

6.15 SEAD-42: Building 106 – Preventative Medicine Laboratory

Infectious wastes were generated in Building 106, a by-product of the clinical laboratory work. These materials were regulated by the County Health Department (Geneva District Office – NYCRR Title 6 Section 364.9) and by US Army Rules and Regulations. Review of available information indicates that there is no evidence that any waste was released from the operations conducted in Building 106. The Army recommends that this SWMU be designated a "No Further Action" site under CERCLA.

6.16 SEAD-49: Building 356 – Columbite Ore Storage Area

The building's compartments were designed in accordance with specifications of the Atomic Energy Act; handling and use of radioactive materials are regulated under Title 10 Code of Federal Regulations. SEDA's Nuclear Regulatory Commission regulatory permit identification number is license #SUC-1275. The Army recommends that this SWMU be designated a "No Further Action" site under CERCLA.

6.17 SEAD-55: Building 357 – Tannin Storage

The building's compartments were designed in accordance with specifications of the Atomic Energy Act; handling and use of radioactive materials are regulated under Title 10 Code of Federal Regulations. SEDA's Nuclear Regulatory Commission regulatory permit identification number is license #SUC-1275.

No environmental permits were issued for the storage of Tannin in Building 357. The Army recommends that this SWMU be designated a "No

Further Action" site under CERCLA.

6.18 SEAD-60: Oil Discharge Area Adjacent To Building 609

NYSDEC visited SEAD-60 on June 7, 1999, and closed out the site. SEDA received confirmation of the acceptability of the closeout of the facility in a letter dated July 13, 1999 from NYSDEC Region 8 Spill Prevention and Response Unit. The Army recommends that this SWMU be designated a "No Further Action" site under CERCLA.

6.19 SEAD-61: Building 718 – Underground Waste Oil Storage Tank

This tank is subject to the requirements of NYS underground storage tank regulations as specified in 6 NYCCR Part 614. Its NYS Petroleum bulk storage number is 8-416118-038. The operations of this tank continue to be regulated by NYSDEC under 6 NYCCR Part 614. The Army recommends that this SWMU be designated a "No Further Action" site under CERCLA.

6.20 SEAD-65: Acid Storage Areas

The areas comprising this SWMU are only subject to review under CERCLA. There were no historic permits associated with the activities conducted in this SWMU. The Army recommends that this SWMU be designated a "No Further Action" site under CERCLA.

7 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 information and data developed for the 20 sites discussed in this PRAP indicate that conditions satisfy this objective.

Based on the results of the investigations and the IRM that have been performed at the sites, the Army is proposing No Further Action as the preferred remedial alternative for the following SWMUs: SEADs 7, 10, 18, 19, 20, 21, 22, 29, 30, 31, 32, 35, 36, 37, 42, 49, 55, 60, 61, and 65. The Army also proposes that the EPA and the NYSDEC should delist the twenty identified SWMUs from the Federal and State Registries of Inactive Hazardous Waste Disposal Sites.

8 REFERENCES

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

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

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

EPA, Secondary Drinking Water Regulations, EPA 810/K-92-001, July 1992.

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

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GLOSSARY

Action Memorandum

An official document that describes actions to be taken to remediate an area as part of a removal action. It substantiates the need for a removal action, identifies the proposed action, and explains the rationale for the proposed action.
(Reference: http://www.bnl.gov/bgrr/Glossary/act-memo.html)

Aquifer

An aquifer is an underground rock formation through another composed of such materials as sand, soil, or gravel that can store groundwater and supply it to wells.

Aromatics

Aromatics are organic compounds that contain 6-carbon ring structures, such as creosote, toluene, and phenol that often are found at dry cleaning and electronic assembly sites.

Air Sparging

In air sparging, air is injected into the ground below a contaminated area, forming bubbles that rise and carry trapped and dissolved contaminants to the surface where they are captured by a soil vapor extraction system. Air sparging may be a good choice of treatment technology at sites contaminated with solvents and other VOCs. *See also Soil Vapor Extraction and Volatile Organic Compound.*

Air Stripping

Air stripping is a treatment system that removes or " strips" VOCs from contaminated groundwater or surface water as air is forced through the water, causing the compounds to evaporate. *See also Volatile Organic Compound.*

Applicable or Relevant and Appropriate Requirement (ARAR)

As defined under CERCLA, applicable or relevant and appropriate requirements (ARARs) are cleanup standards, standards of control, and other substantive environmental protection requirements, criteria, or limits set forth under federal or state law that specifically address problems or situations present at a CERCLA site. ARARs are major considerations in setting cleanup goals, selecting a remedy, and determining how to implement that remedy at a CERCLA site. ARARs must be attained at all CERCLA sites unless a waiver is attained. ARARs are not national cleanup standards for the Superfund program. *See also Comprehensive Environmental Response, Compensation, and Liability Act and Superfund.*

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 includes: the New York District (CENAN), the New England District (CENED), the Huntsville Center for Engineering Support (CEHNC).

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.

Baseline Risk Assessment

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.

Bedrock

Bedrock is the rock that underlies the soil; it can be permeable or non-permeable. The underlying bedrock as the Seneca Army Depot Activity is shale. *See also Confining Layer.*

BTEX

BTEX is the term used for benzene, toluene, ethylbenzene, and xylene – volatile aromatic compounds typically found in petroleum products, such as gasoline and diesel fuel.

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 EPA'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

Cadmium

Cadmium is a heavy metal that accumulates in the environment. *See also Heavy Metal.*

Chlorinated Ethenes

A group of volatile chlorinated organic compounds that includes tetrachloroethene, trichloroethene, dichloroethene and vinyl chloride. These compounds have been detected at the Ash Landfill Operable Unit.

Chromium

Chromium is a steel-gray metal that will take a high polish. It is used to harden steel, which is used to make stainless steel, and other useful item and helps them for corrosion. Chromium is used as a mordant in the textile industry.
(Reference:
http://www.tamuk.edu/chemistry/WebElements/chromium_element.htm)

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.

Clean Water Act (CWA)

CW A is a 1977 amendment to the Federal Water Pollution Control Act of 1972, which set the basic structure for regulating discharges of pollutants to

U.S. waters. This law gave EPA the authority to set wastewater discharge standards on an industry-by-industry basis and to set water quality standards for all contaminants in surface waters.

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)

Columbite Ore

A black, red-brown, or colorless mineral. It contains iron (Fe), manganese (Mn), magnesium (Mg), niobium (Nb) and tantalum (Ta) and its formula is typically written as (Fe, Mn, Mg)(Nb, $Ta)_2O_6$. It is the principal ore of niobium. Columbite is the most widespread niobium mineral and makes for an important ore of the industrially useful metal. Niobiumis used in alloys for improved strength. It also has shown super conductive properties and is being studied with other metals for a possible breakthrough alloy in this new industrial field.

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 EPA's RCRA Facility Investigation Guidance, EPA's Guidance for Conducting RI/FSs under CERCLA, and any subsequent amendments to these documents and all other applicable federal or state guidance.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

CERCLA is a federal law passed in 1980 that created a special tax that funds a trust fund, commonly known as Superfund, to be used to investigate and cleanup abandoned or uncontrolled hazardous waste sites. CERCLA required for the first time that EPA step beyond its traditional regulatory role and provide response authority to cleanup hazardous waste sites. EPA has primary responsibility for managing cleanup and enforcement activities authorized under CERCLA. Under the program, EPA can pay for cleanup when parties responsible for the contamination cannot be located or are unwilling or unable to perform the work, or take legal action to force parties responsible for contamination to cleanup the site or reimburse the federal government for the cost of the cleanup. *See also Superfund.*

Confining Layer

A "confining layer" is a geological formation characterized by low permeability that inhibits the flow of water. *See also Bedrock and Permeability.*

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.

Corrosivity *(Characteristic)*

The corrosivity characteristic identifies wastes that are acidic or alkaline (basic). Such wastes can readily corrode or dissolve flesh, metal, or other materials. They are also among the most common hazardous wastes. EPA uses two criteria to identify liquid and aqueous corrosive hazardous wastes. The first is a pH test. Aqueous wastes with a pH greater than or equal to 12.5 or less than or equal to 2 are corrosive. A liquid waste may also be corrosive if it has the ability to corrode steel under specific conditions. Physically solid, nonaqueous wastes are not evaluated for corrosivity. Corrosive wastes carry the waste code D002.

The regulations describing the corrosivity characteristic are found at Title 40 CFR §261.22.

Deactivation Furnace

A Deactivation Furnace is an incineration system designed to demilitarize obsolete or unserviceable ammunition items, and to dispose of bulk propellant, explosive, or pyrotechnic wastes generated during the process of manufacture and assembly.

Detection Limit

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

Dichloroethene

A group of volatile chlorinated organic compounds that include: 1,1-dichloroethene, cis 1,2-dichloroethene and trans 1,2-dichloroethene.

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.

Engineering Evaluation/Cost Analysis

Engineering Evaluation/Cost Analysis (abbreviated as "EE/CA")- An official document that evaluates feasible and cost-effective alternatives for proposed removal actions, and recommends a specific removal action.

(Reference: http://www.bnl.gov/bgrr/Glossary/eeca.html)

Environmental Baseline Survey (EBS)

The purpose of performing an Environmental Baseline Survey (EBS) is to document the environmental condition of a property. Such documentation can be used for a number of different purposes, including:

- Provide a basis for determining if property is suitable for transfer, lease, or assignment;
- Serve as a foundation study for installation closure;
- Satisfy legal requirements including:
  - Notification requirements under Sections 120(h)(1) and (3) of CERCLA,
  - Uncontaminated parcel identification requirements of Section 120(h)(4) of CERCLA, and
  - State or local real property transfer.

Environmental Protection Agency (EPA)

The Federal regulatory agency responsible for enforcing the environmental rules and regulations of the United States. Representatives from the EPA 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.

EP Toxicity

The predecessor to TCLP toxicity. An evaluation of the leachability of certain toxic chemical compounds from wastes that was used to determine if the disposed material was a characteristic hazardous waste due to toxicity.

Ethene/Ethane

A non-toxic chemical endpoint in the breakdown of chlorinated ethenes, where all chlorine has been removed.

Evapotranspiration

Evapotranspiration is the combination of water that is evaporated and transpired by plants as a part of their metabolic processes. (Reference: http: //www. marinwater.org/evapotranspiration.html)

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.

Exposure Pathway

An exposure pathway is the route of contaminants from the source of contamination to potential contact with a medium (air, soil, surface water, or groundwater) that represents a potential threat to human health or the environment. Determining whether exposure pathways exist is an essential step in conducting a baseline risk assessment. *See also Baseline Risk Assessment.*

Federal Facilities Agreement (FFA) also known as the Interagency Agreement (IAG)

An agreement signed between EPA, NYSDEC and the Army that describes the process for identifying, investigating and remediating sites at the Seneca Army Depot Activity.

Flashpoint

Flash point is the lowest temperature at which a liquid can form an ignitable mixture in air near the surface of the liquid. The lower the flash point, the easier it is to ignite the material.

(Reference: http://www.ilpi.com/msds/ref/ flashpoint.html)

Free Liquids

Free liquids" means liquids which readily separate from the solid portion of a waste under ambient temperature and pressure. (Reference: Title 40 CFR § 260.10)

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.

General Services Administration (GSA)

A Federal government agency whose mission is to "help federal agencies better serve the public by offering, at best value, superior workplaces, expert solutions, acquisition services and management policies." (Reference: http://www.gsa.gov)

Groundwater

Groundwater is the water fow1d beneath the earth's surface that fills pores between such materials as sand, soil, or gravel and that often supplies wells and springs. *See also Aquifer.*

Halogenated Organic Compound

A halogenated organic compound *is* a compound containing molecules of chlorine, bromine iodine, and fluorine. Halogenated organic compounds were used in high-voltage electrical transformers because they conducted heat well while being fire resistant and good electrical insulators. Many herbicides, pesticides, and degreasing agents are made from halogenated organic compounds.

Hazard Ranking System (HRS)

The Hazard Ranking System (HRS) is the principal mechanism EPA uses to place uncontrolled waste sites on the NPL. It is a numerically based screening system that uses information from initial, limited investigations — the preliminary assessment and the site inspection – to assess the relative potential of sites to pose a threat to human health or the environment.

The HRS uses a structured analysis approach to scoring sites. This approach assigns numerical values to factors that relate to risk based on conditions at the site. The factors are grouped into three categories:

- likelihood that a site has released or has the potential to release hazardous substances into the environment;
- characteristics of the waste (e.g. toxicity and waste quantity); and
- people or sensitive environments (targets) affected by the release.

(Reference:http://www.epa.gov/superfund/programs/npl_hrs/hrsint.htm)

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.

Herbicide

A herbicide is a chemical pesticide designed to control or destroy plants, weeds, or grasses.

Hydrocarbon

A hydrocarbon is an organic compound containing only hydrogen and carbon, often occurring in petroleum, natural gas, and coal

Hydrogeology

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

Incinerator

A furnace or container used for burning waste materials.

Information Repository

An information repository is a location in a public building that is convenient for local residents, such as a public school, city hall, or library, that contains information about a Superfund site, including technical reports and reference documents.

Initial Installation Assessment (IIA)

The first environmental assessment of military

facilities that was performed by the Department of Defense and its contractors under the Installation Restoration Program.

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.

Innovative Technology

An innovative technology is a process that has been tested and used as a treatment for hazardous waste or other contaminated materials, but lacks a long history of full-scale use and information about its cost and how well it works sufficient to support prediction of its performance under a variety of operating conditions. An innovative technology is one that is undergoing pilot-scale treatability studies that usually are conducted in the field or the laboratory and require installation of the technology, and provide performance, cost, and design objectives for the technology. Innovative technologies are being used under many federal and state cleanup programs to treat hazardous wastes that have been improperly released. For example, the innovative technology, reactive barrier wall, is being evaluated to manage off-site migration of contamination.

In Situ

The term in situ, "in its original place," or" on-site", means unexcavated and unmoved. In situ soil flushing and natural attenuation are examples of in situ treatment methods by which contaminated sites are treated without digging up or removing the contaminants.

In Situ Soil Flushing

In situ soil flushing is an innovative treatment technology that floods contaminated soils beneath the ground surface with a solution that moves the contaminants to an area from which they can be removed. The technology requires the drilling of injection and extraction wells on site and reduces the need for excavation, handling, or transportation of hazardous substances. Contaminants considered for treatment by in situ soil flushing include heavy metals (such as lead, copper, and zinc), halogenated organic compounds, aromatics, and PCBs. *See also Aromatics, Halogenated Organic Compound, Heavy Metal, and Polychlorinated Biphenyl.*

Installation Restoration Program (IRP)

The Installation Restoration Program (IRP) was established by Department of Defense directive to protect human health and the environment by cleaning up and restoring military sites whose past activities created contamination from toxic and hazardous substances, low level radioactive materials, and petroleum, oil and lubricants. The process is based on the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), as well as the National Oil and Hazardous Substances Contingency Plan (NCP).

Institutional Controls

An institutional control is a legal or institutional measure, which subjects a property owner to limit activities at or access to a particular property. They are used to ensure protection of human health and the environment, and to expedite property reuse. Fences, posting or warning signs, and zoning and deed restrictions are examples of institutional controls.

Land Disposal Restrictions (LDR)

LDR is a RCRA program that restricts the land disposal of RCRA hazardous wastes and requires treatment to established treatment standards. LDRs may be an important ARAR for Superfund actions. *See also Applicable or Relevant and Appropriate Requirement and Resource Conservation and Recovery Act.*

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.*

Local Redevelopment Authority (LRA)
A panel of individuals comprised of representatives of the community, the installation and regulatory agencies that oversee and direct the base realignment and closure process. The panel provides an opportunity for stakeholders to participate and provide input to the cleanup process and votes on reuse. The LRA must approve a transferee and a detailed redevelopment plan for the property prior to transfer.
(Reference: adapted from http://propertydisposal.gsa.gov/ResourceCenter/laws_regs_all/bracv49.doc)

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)

Medium
A medium is a specific environment-air, water, or soil-which is the subject of regulatory concern and activities.

Mercury
Mercury is a heavy metal that can accumulate in the environment and is highly toxic if breathed or swallowed. Mercury is found in thermometers, measuring devices, pharmaceutical and agricultural chemicals, chemical manufacturing, and electrical equipment. *See also Heavy Metal.*

Maximum Contaminant Level (MCL)
Established under the Safe Drinking Water Act as concentrations of pollutants considered protective for drinking water.

Migration Control (MC)
This term refers to a group of alternatives that were assembled to address control of migration of contamination. Most typically these alternatives involve groundwater.

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 EP A, 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 EPA'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.*

Natural Attenuation

Natural attenuation is an approach to cleanup that uses natural processes to contain the spread of contamination from chemical spills and reduce the concentrations and amounts of pollutants in contaminated soil and groundwater. Natural subsurface processes, such as dilution, volatilization, biodegradation, adsorption, and chemical reactions with subsurface materials, are allowed to reduce concentrations of contaminants to acceptable levels. An in situ treatment method that leaves the contaminants in place while those processes occur, natural attenuation is being used to cleanup petroleum contamination from LUSTs across the country.

New York State Department of Environmental Protection (NYSDEC)

The state regulatory agency responsible for enforcing the environmental rules and regulations of New York. Representatives from the headquarters in Albany and Region 8 are involved in the review and oversight of the environmental work being conducted at the Seneca Army Depot Activity.

Nitroaromatics

A group of organic compound that contains one or more benzene or equivalent heterocyclic rings with one or more nitro radical groups (i.e., NO_2) attached. At SEDA, typically associated with explosive materials such as di- and tri-nitrotoluene, nitrobenzene, etc.

Nuclear Regulatory Commission

The Commission as a collegial body formulates policies, develops regulations governing nuclear reactor and nuclear material safety, issues orders to licensees, and adjudicates legal matters. NRC's primary mission is to protect the public health and safety, and the environment from the effects of radiation from nuclear reactors, materials, and waste facilities. We also regulate these nuclear materials and facilities to promote the common defense and security.

NYCRR

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

Operable Unit (OU)

A grouping of sites that forms a larger entity with similar features or receiving equivalent treatment. Sites can be grouped into an Operable Unit due to geographical proximity to each other, similar chemical hazards or for other reasons.

Organic Chemical or Compound

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

Percent Solids

A physical determination used to measure the amount of solid material (i.e., normally defined as non-volatile material at 105 ºC) that is contained in a sample such as a soil or sediment.

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).

Permeable Reactive Barriers

Permeable reactive barriers, also known as passive treatment walls, are installed across the flow path of a contaminated plume, allowing the water portion of the plume to flow through the wall. These barriers allow the passage of water while prohibiting the movement of contaminants by employing such agents as zero- valent iron, chelators, sorbents, and microbes. The contaminants are either degraded or retained in a concentrated form by the barrier material.

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.

Phenols

A phenol is one of a group of organic compounds that are byproducts of petroleum refining, tanning, and textile, dye, and resin manufacturing. Low concentrations of phenols cause taste and odor problems in water; higher concentrations may be harmful to human health or the environment.

Plume

A plume is a visible or measurable emission or discharge of a contaminant from a given point of origin into any medium. The term also is used to refer to measurable and potentially harmful radiation leaking from a damaged reactor.

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 was bal1ned in 1979.

Polynuclear Aromatic Hydrocarbon (P AH)

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.

Post-Closure

Period after closure during which owners and operators of solid and hazardous waste disposal units conduct monitoring and maintenance activities in order to preserve the integrity of the disposal system. (Reference: RCRa Orientation Manual, US EPA, Office of Solid Waste.)

Potentially Responsible Party (PRP)

A PRP is an individual or company (such as owners, operators, transporters, or generators of hazardous waste) that is potentially responsible for, or contributing to, the contamination problems at a Superfund site. Whenever possible, EPA requires PRPs, through administrative and legal actions, to cleanup hazardous waste sites they have contaminated. *See also Comprehensive Environmental Response, Compensation, and Liability Act and Superfund.*

Proposed Remedial Action Plan (PRAP)

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

Preliminary Assessment and Site Inspection (PA/SI)

A PA/SI is the process of collecting and reviewing available information about a known or suspected hazardous waste site or release. The PA/SI usually includes a visit to the site.

Reactivity

The reactivity characteristic identifies wastes that readily explode or undergo violent reactions. Common examples are discarded munitions or explosives. A waste is reactive if it meets any of the following criteria:

- It can explode or violently react when exposed to water or under normal handling conditions
- It can create toxic fumes or gases when exposed to water or under normal handling conditions
- It meets the criteria for classification as an explosive under DOT rules
- It generates toxic levels of sulfide or cyanide gas when exposed to a pH range of 2 through 12.5. Wastes exhibiting the characteristic of reactivity are assigned the waste code D003.

The reactivity characteristic is described in the regulations at Title 40 CFR §261.23.

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 Design and Remedial Action (RD/RA)

The RD/RA is the step in the Superfund cleanup process that follows the RI/FS and selection of a remedy. An RD is the preparation of engineering plans and specifications to properly and effectively implement the remedy. The RA is the actual construction or implementation of the remedy. *See also Remedial Investigation and Feasibility Study.*

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 -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.

Interim Removal Measure (IRM), also known as an Interim Removal Action (IRA)

A removal action usually is a short-term effort designed to stabilize or cleanup a hazardous waste site that poses an immediate threat to human health or the environment. Removal actions include removing soil contaminated with hazardous substances or security measures, such as a fence at the site. Removal actions also may be conducted to respond to accidental releases of hazardous substances. CERCLA places time and money constraints on the duration of removal actions. *See also Comprehensive Environmental Response, Compensation, and Liability Act.*

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.

RCRA Facility Assessment (RFA)

The RCRA Facility Assessment (RFA) is the first step of the RCRA corrective action process. An RFA is conducted for facilities seeking a RCRA permit, for facilities operating or closing under interim status, and in some cases, for generators of hazardous waste that are not seeking permits or do not have interim status (e.g., facilities with a history of noncompliance with respect to generator requirements). The RFA process consists of the following four phases: the Preliminary Review, the Visual Site Inspection, an optional Sampling Visit, and Development of a RFA Report.

RCRA Facility Investigation (RFI)

The RCRA Facility Investigation (RFI) is the second step of the EPA's RCRA corrective action process, and is taken after an RFA has been conducted. The RFI is a detailed investigation to determine the nature, extent, and migration rate of a release of hazardous waste or hazardous constituents, and to

provide information necessary for developing a strategy for addressing contamination. The RFI is a focused investigation that is designed to characterize releases from individual SWMUs rather than a characterization of the entire facility. (Reference: http://tis.eh.doe.gov/oepa/guidance/rcra/invest.pdf)

Risk Assessment

The process of assessing and analyzing threats that chemicals 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.

Risk Communication

Risk communication, the exchange of information about health or environmental risks among risk assessors, risk managers, the local community, news media and interest groups, is the process of informing members of the local community about environmental risks associated with a site and the steps that are being taken to manage those risks.

Saturated Zone or Saturated Thickness

The saturated zone or the saturated thickness is the area beneath the surface of the land in which all openings are filled with water.

Sediment Criteria

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.

Selenium

Selenium is a heavy metal that is used in photoelectric cells, TV cameras, xerography machines and as a semiconductor in solar batteries and rectifiers. Also colors glass red. It is a soft metalloid similar to sulfur and it ranges in color from gray metallic to red glassy. Excess selenium can be toxic to both humans and animals. Selenium from the soil is absorbed by plants, and when livestock eat those plants, selenium toxicity may develop. Selenium toxicity in livestock can occasionally be acute or more commonly chronic. Acute selenium toxicity is often called "blind staggers. Death can occur quickly. Chronic Selenium toxicity is called "alkali disease" and is characterized by dullness and lack of vitality; roughness of coat; loss of hair; hoof soreness, overgrown or deformed hooves, horizontal ridging, cracking and even sloughing of hooves or complete loss of the hoof wall; and stiffness and lameness.

Semivolatile Organic Compound (SVOC)

SVOCs, composed primarily of carbon and hydrogen atoms, have boiling points greater than 2000°C. Common SVOCs include PCBs and phenol *See also Phenol and Polychlorinated Biphenyl.*

Seneca Army Depot Activity (SEDA)

A 10,600-acre military facility, constructed in 1941, located in central New York responsible for storage and management of military commodities, including munitions. The depot is undergoing closure and will cease 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.

Sewage Treatment Plant (STP)

A treatment facility that is used to treat wastewater derived from residential, commercial, industrial, military and/or municipal activities. Varying treatment processes may be included based on wastewater quality and could include bar screens, grid chambers, clarifiers, settling basins, digesters, chlorinators, thickeners, trickling filters, etc.

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.

Silver

Silver is a heavy metal that is used for coinage, for manufacture of tableware, mirrors, jewelry, ornaments; for electroplating; for making vessels and apparatus used in manufacture of medicinal chemicals, in processing foods and beverages, in handling organic acids; as a catalyst in hydrogenation and oxidation processes; and as ingredient of dental alloys. The free silver ion, Ag^{+}, is one of the most toxic metals to marine and freshwater fish, causing acute toxicity. Nevertheless, relatively little is known about biochemical and physiological effects of silver to fish.

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.

Soil Flushing

In soil flushing, large volumes of water, at times supplemented with treatment compounds, are applied to the soil or injected into the groundwater to raise the water table into the zone of contaminated soil. Contaminants are leached into the groundwater, and the extraction fluids are recovered from the underlying aquifer. When possible, the fluids are recycled.

Soil Vapor Extraction (SVE)

SVE, the most frequently selected innovative treatment at Superfund sites, is a process that physically separates contaminants from soil m a vapor form by exerting a vacuum through the soil formation. SVE removes VOCs and some SVOCs from soil beneath the ground surface.

Solidification and Stabilization

Solidification and stabilization are the processes of removing wastewater from a waste or changing it chemically to make the waste less permeable and susceptible to transport by water. Solidification and stabilization technologies can immobilize many heavy metals, certain radionuclides, and selected organic compounds, while decreasing the surface area and permeability of many types of sludge, contaminated soils, and solid wastes.

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.

Solvent

A solvent is a substance, usually liquid, that is capable of dissolving or dispersing one or more other substances.

Source Control

This term refers to a group of alternatives that were assembled to address control the source of contamination. Most typically these alternatives involve addressing soil or sludge contamination.

State Pollutant Discharge Elimination System (SPDES)

New York State has a state program which has been approved by the United States Environmental Protection Agency for the control of wastewater and storm water discharges in accordance with the Clean Water Act. Under New York State law the program is known as the State Pollutant Discharge Elimination System (SPDES) and is broader in scope than that required by the Clean Water Act in that it controls point source discharges to groundwaters as well as surface waters.

Subsurface

Underground; 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.*

Superfund Amendment and Reauthorization Act (SARA)
SARA is the 1986 act amending CERCLA that increased the size of the Superfund trust fund and established a preference for the development and use of permanent remedies, and provided new enforcement and settlement tools. *See also Comprehensive Environmental Response, Compensation, and Liability Act.*

Tannin
Any phenolic compound of sufficiently high molecular weight containing sufficient hydroxyls and other suitable groups (i.e. carboxyls) to form effectively strong complexes with protein and other macromolecules under the particular environmental conditions being studied. Tannins can complex with: Proteins, Starch, Cellulose, and Minerals. At SEDA, Tannin was used as a chemical additive in boiler make-up water to complex with metals (i.e., minerals) that could foul heating equipment.

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. These values have been adopted as screening levels to determine "How clean is clean".

Thermal Desorption also known as Low Temperature Thermal Desorption (LTTD)
Thermal desorption is an innovative treatment technology that heats soils contaminated with hazardous wastes to temperatures from 200 to 1,000°F so that contaminants that have low boiling points will vaporize and separate from the soil. The vaporized contaminants then are collected for further treatment or destruction, typically by an air emissions treatment system. The technology is most effective at treating VOCs, SVOCs and other organic contaminants, such as PCBs, PAHs, and pesticides. It is effective in separating organics from refining wastes, coal tar wastes, waste from wood treatment, and paint wastes. It also can separate solvents, pesticides, PCBs, dioxins, and fuel oils from contaminated soil. *See also Polyaromatic Hydrocarbon, Polychlorinated Biphenyl, semivolatile Organic Compound, and Volatile Organic Compound.*

Toluene
Toluene is a colorless liquid chemical with a sweet, strong odor. It is used as a solvent in aviation gasoline and in making other chemicals, perfumes, medicines, dyes, explosives, and detergents.

Total Petroleum Hydrocarbon (TPH)
TPH refers to a measure of concentration or mass of petroleum hydrocarbon constituents present in a given amount of air, soil, or water

Toxicity
Toxicity is a quantification of the degree of danger posed by a substance to animal or plant life.

Toxicity Characteristic Leaching Procedure (TCLP)
The TCLP is a testing procedure used to identify the toxicity of wastes and is the most commonly used

test for degree of mobilization offered by a solidification and stabilization process. Under this procedure, a waste is subjected to a process designed to model the leaching effects that would occur if the waste was disposed of in a RCRA Subtitle D municipal landfill. *See also Solidification and Stabilization.*

Treatability Testing / Demonstration Study

Treatability testing is a process of collecting engineering performance data that will be used for final design purposes. In many instances treatability testing is performed to demonstrate the effectiveness of an innovative technology. A demonstration study has been on-going at the Ash Landfill Operable Unit involving a zero-valence iron treatment wall.

Trichloroethylene also known as Trichloroethene (TCE)

TCE is a stable, low-boiling colorless liquid that is used as a solvent, metal degreasing agent, and in other industrial applications. It is a volatile chlorinated organic chemical.

Unsaturated Zone

The unsaturated zone is the area between the land surface and the uppermost aquifer (or saturated zone). The soils in an unsaturated zone may contain air and water.

U.S. Army Center for Health Promotion and Preventive Medicine (USACHPPM) formerly U.S. Army Environmental Hygiene Agency (USAEHA)

The U.S. Army Center for Health Promotion and Preventive Medicine (USACHPPM) lineage can be traced back over 50 years to the Army Industrial Hygiene Laboratory. That organization was established at the beginning of World War II and was under the direct jurisdiction of The Army Surgeon General. Its mission was to conduct occupational health surveys of Army-operated industrial plants, arsenals, and depots. These surveys were aimed at identifying and eliminating occupational health hazards within the Department of Defense's industrial production base and proved to be of great benefit to the nation's war effort.

It was known both nationally and internationally as the U.S. Army Environmental Hygiene Agency or USAEHA. Its mission was expanded to support the worldwide preventive medicine programs of the Army, DOD, and other Federal agencies through consultations and supportive services, investigations, and training. In 1994, it was redesignated the USACHPPM. Its mission is to provide worldwide technical support for implementing preventive medicine, public health, and health promotion/wellness services into all aspects of America's Army and the Army Community anticipating and rapidly responding to operational needs and adaptable to a changing world environment.

U. S. Army Environmental Center (USAEC) formerly U.S. Army Toxic and Hazardous Material Agency (USATHAMA)

The Army Environmental Center traces its roots back to 1972, when the Army created the Project Manager for Chemical Demilitarization. The organization's mission then was the destruction of the nation's toxic chemical agents and munitions. In 1975, the organization began managing the newly established Installation Restoration Program, set up to develop an assessment process for evaluating environmental conditions at Army installations. With the new responsibilities came a new name, the Department of the Army Project Manager for Chemical Demilitarization and Installation Restoration. By 1978, the Army's environmental responsibilities had expanded and the organization was renamed the U.S. Army Toxic and Hazardous Materials Agency (USATHAMA) to reflect a broader, more long-term mission. By 1980, the agency welcomed several new responsibilities to include environmental research, development, test, and evaluation; pollution abatement; and environmental control technology.

Environmental compliance joined the responsibilities of the organization in 1988 and with that new

responsibility came a transition from the U.S. Army Material Command to the U.S. Army Corps of Engineers. In 1993, looking to further centralize the management of its many environmental programs, the Army shifted USATHAMA and the mission for conservation from the Corps of Engineers to a new Army field operating agency, the U.S. Army Environmental Center. The current focus on program management rather than project execution allows the USAEC staff of biologists, chemists, engineers, lawyers, and researchers to provide sound advice and supervision of Army environmental programs worldwide.

Vadose Zone

The vadose zone is the area between the surface of the land and the surface of the water table in which the moisture content is less than the saturation point and the pressure is less than atmospheric. The openings (pore spaces) also typically contain air or other gases.

Vapor

Vapor is the gaseous phase of any substance that is liquid or solid at atmospheric temperatures and pressures. Steam is an example of a vapor.

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.

Volatilization

Volatilization is the process of transfer of a chemical from the aqueous or liquid phase to the gas phase. Solubility, molecular weight, and vapor pressure of the liquid and the nature of the gas-liquid affect the rate of volatilization.

Vinyl Chloride

A volatile chlorinated organic chemical, produced as a breakdown product of trichloroethene. This compound is highly volatile, being a gas a room temperature.

Waste Oil

The generic phrase used to describe used oil. Used oil means any oil that has been refined from crude oil, or any synthetic oil, that has been used and as a result of such use is contaminated by physical or chemical impurities.

Wastewater

Wastewater is spent or used water from an individual home, a community, a farm, or an industry that contains dissolved or suspended matter.

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 *See also Aquifer and Groundwater*

Weapons Storage Area (WSA)

The former high security enclave located at the northern end of the Seneca Army Depot Activity that was used for storage of special weapons and components.

TABLE 1
NO FURTHER ACTION SWMUs
CONSIDERED IN THIS PRAP

UNIT NUMBER	UNIT NAME
SEAD-7	Shale Pit
SEAD-10	Present Scrap Wood Site
SEAD-18	Building 709 – Classified Document Incinerator
SEAD-19	Building 801 – Classified Document Incinerator
SEAD-20	Sewage Treatment Plant No. 4
SEAD-21	Sewage Treatment Plant No. 715
SEAD-22	Sewage Treatment Plant No. 314
SEAD-29	Building 732 - Underground Waste Oil Tanks (2 units)
SEAD-30	Building 118 – Underground Waste Oil Tank
SEAD-31	Building 117 – Underground Waste Oil Tank
SEAD-32	Building 718 – Underground Waste Oil Tanks
SEAD-35	Building 718 - Waste Oil-Burning Boilers (3 units)
SEAD-36	Building 121 - Waste Oil-Burning Boilers (2 units)
SEAD-37	Building 319 - Waste Oil-Burning Boilers (2 units)
SEAD-42	Building 106 - Preventive Medicine Laboratory
SEAD-49	Building 356 – Columbite Ore Storage
SEAD-55	Building 357 - Tannin Storage
SEAD-60	Oil Discharge Adjacent to Building 609
SEAD-61	Building 718 - Underground Waste Oil Tank
SEAD-65	Acid Storage Areas

TABLE 2
ASH SAMPLE ANALYSIS RESULTS - SEAD-10

Parameter	Sample ID AA18459 Submitted: 09/29/92 Matrix: Wood Ash Results	Method Detection Limit
TCLP Arsenic	0.16 mg/L	0.01 mg/L
TCLP Barium	0.27 mg/L	0.01 mg/L
TCLP Cadmium	Not Detected	0.01 mg/L
TCLP Chromium	0.47 mg/L	0.01 mg/L
TCLP Lead	Not Detected	0.01 mg/L
TCLP Mercury	Not Detected	0.005 mg/L
TCLP Selenium	Not Detected	0.01 mg/L
TCLP Silver	Not Detected	0.01 mg/L
Total TCLP Volatiles (11 Compounds Reported)	Not Detected	5 ug/L per analyte
Total TCLP Semivolatiles (11 Compounds Reported)	Not Detected	10 to 50 ug/L per analyte
Total TCLP Pesticides (7 Compound Reported)	Not Detected	0.05 to 1.0 ug/L per analyte
Total TCLP Herbicides (2 Compounds Reported)	Not Detected	1 to 5 ug/L per analyte
Free Liquids	Negative	-----
Flash Point	Greater than 200 degrees F	-----
Percent Solids	96.7%	-----
pH	12.4	-----
Corrosivity	Negative	-----
Reactivity – Cyanide	Not Detected	0.5 mg/Kg
Reactivity – Sulfide	Not Detected	10 mg/Kg
Reactivity	Negative	-----

TABLE 3
SUMMARY OF SOIL DATA – SEAD-32

PARAMETER	UNIT	Maximum Conc	Frequency of Detection	NYSDEC TAGM Criteria (1)	Number above Criteria (1)	Times Detected	Times Analyzed
VOLATILE ORGANICS							
Analyses were performed on two samples for 33 Volatile Organic Compounds. None of the Volatile Organic Compounds was detected in either of the samples.							
OTHER ANALYTES							
Total Solids	%W/W	83.2	100%	NA	0	2	2
Total Petroleum Hydrocarbons	mg/Kg	90	100%	NA	0	2	2

(1) The TAGM Criteria are identified in NYSDEC's Technical and Administrative Guidance Memorandum #4046, Determination of Soil Cleanup Objectives and Cleanup Levels, Jan 24, 1994.
NA means "Not Available."

TABLE 4
SUMMARY OF GROUNDWATER DATA – SEAD-32

COMPOUND	UNIT	Maximum Conc	Frequency of Detection	NYSDEC GA Standard (1)	Number above Standard (1)	Times Detected	Times Analyzed
VOLATILE ORGANICS							
Analyses were performed on three samples for 33 Volatile Organic Compounds. None of the Volatile Organic Compounds was detected in any of the three samples.							
OTHER ANALYTES							
Total Petroleum Hydrocarbons	mg/L	0.69	67%	NA	0	2	3

(1) The GA Standards are identified in NYSDEC's 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.

TABLE 5
SUMMARY OF RADIOLOGICAL SURVEY – SEAD-49, BUILDING 356

SURVEY METER READINGS		
Location	**Ludlum MicroR Meter micro Rems per hour (microR/hr)**	**EM Survey Meter Counts per minute (cpm)**
Background	4 – 15	20 – 40
Building 356, Section 4, wipe #1	12	20
Building 356, Section 4, wipe #2	12	----
Building 356, Section 4, wipe #3	9.4	20
WIPE SAMPLE RESULTS		
Location	**Gross Alpha Decays per minute (dpm)**	**EM Survey Meter Dpm**
Building 356, Section 4, wipe #1	Less than 20	Less than 20
Building 356, Section 4, wipe #2	Less than 20	Less than 20
Building 356, Section 4, wipe #3	Less than 20	Less than 20

TABLE 6
SUMMARY OF RADIOLOGICAL SURVEY – SEAD-55, BUILDING 357

SURVEY METER READINGS		
Location	**Ludlum MicroR Meter micro Rems per hour (microR/hr)**	**EM Survey Meter Counts per minute (cpm)**
Background	4 – 15	20 – 40
Building 357, Section 4, wipe #2	6	20
Building 357, Section 4, wipe #3	6	20
WIPE SAMPLE RESULTS		
Location	**Gross Alpha Decays per minute (dpm)**	**EM Survey Meter Dpm**
Building 357, Section 4, wipe #2	Less than 20	Less than 20
Building 357, Section 4, wipe #3	Less than 20	Less than 20

TABLE 7
SUMMARY OF SOIL DATA – SEAD-60

Parameter	Units	Maximum Concentration	Frequency of Detection	NYSDEC TAGM Criteria (1)	Number Exceeding Criteria (1)	Number of Times Detected	Number of Analyses
VOLATILES							
Acetone	ug/Kg	160	8%	200	0	1	12
Carbon disulfide	ug/Kg	2	17%	2700	0	2	12
Ethyl benzene	ug/Kg	2	17%	5500	0	2	12
Methyl butyl ketone	ug/Kg	1	8%		0	1	12
Methyl ethyl ketone	ug/Kg	20	8%	300	0	1	12
Methylene chloride	ug/Kg	54	42%	100	0	5	12
Tetrachloroethene	ug/Kg	3	8%	1400	0	1	12
Toluene	ug/Kg	13	33%	1500	0	4	12
Total Xylenes	ug/Kg	5	8%	1200	0	1	12
SEMIVOLATILES							
2-Methylnaphthalene	ug/Kg	1100	8%	36400	0	1	12
Acenaphthene	ug/Kg	1400	17%	50000	0	2	12
Anthracene	ug/Kg	2000	25%	50000	0	3	12
Benzo(a)anthracene	ug/Kg	340	17%	224	1	2	12
Benzo(a)pyrene	ug/Kg	350	17%	61	2	2	12
Benzo(b)fluoranthene	ug/Kg	16000	33%	1100	2	4	12
Benzo(ghi)perylene	ug/Kg	1600	25%	50000	0	3	12
Benzo(k)fluoranthene	ug/Kg	190	8%	1100	0	1	12
Bis(2-Ethylhexyl)phthalate	ug/Kg	380	42%	50000	0	5	12
Carbazole	ug/Kg	79	8%		0	1	12
Chrysene	ug/Kg	17000	42%	400	2	5	12
Di-n-butylphthalate	ug/Kg	1500	25%	8100	0	3	12
Dibenz(a,h)anthracene	ug/Kg	1100	25%	14	3	3	12
Dibenzofuran	ug/Kg	29	8%	6200	0	1	12
Fluoranthene	ug/Kg	14000	67%	50000	0	8	12
Fluorene	ug/Kg	1300	17%	50000	0	2	12
Indeno(1,2,3-cd)pyrene	ug/Kg	1100	25%	3200	0	3	12
Naphthalene	ug/Kg	38	8%	13000	0	1	12
Phenanthrene	ug/Kg	8900	50%	50000	0	6	12
Pyrene	ug/Kg	27000	83%	50000	0	10	12

(1) The TAGM Criteria are identified in NYSDEC's Technical and Administrative Guidance Memorandum #4046, Determination of Soil Cleanup Objectives and Cleanup Levels, Jan 24, 1994.

TABLE 7
SUMMARY OF SOIL DATA – SEAD-60 (continued)

Parameter	Units	Maximum Concentration	Frequency of Detection	NYSDEC TAGM Criteria (1)	Number Exceeding Criteria (1)	Number of Times Detected	Number of Analyses
PESTICIDES							
4,4'-DDD	ug/Kg	100	25%	2900	0	3	12
4,4'-DDE	ug/Kg	110	50%	2100	0	6	12
4,4'-DDT	ug/Kg	130	33%	2100	0	4	12
Aldrin	ug/Kg	16	17%	41	0	2	12
Alpha-BHC	ug/Kg	5	8%	110	0	1	12
Alpha-Chlordane	ug/Kg	27	25%		0	3	12
Aroclor-1242	ug/Kg	970	8%		0	1	12
Aroclor-1248	ug/Kg	2100	8%		0	1	12
Aroclor-1260	ug/Kg	4400	25%	10000	0	3	12
Endosulfan I	ug/Kg	34	42%	900	0	5	12
Endrin ketone	ug/Kg	14	17%		0	2	12
Gamma-Chlordane	ug/Kg	10	17%	540	0	2	12
METALS							
Aluminum	mg/Kg	14100	100%	19300	0	12	12
Antimony	mg/Kg	1.8	67%	5.9	0	8	12
Arsenic	mg/Kg	8.1	100%	8.2	0	12	12
Barium	mg/Kg	679	100%	300	3	12	12
Beryllium	mg/Kg	0.67	100%	1.1	0	12	12
Cadmium	mg/Kg	2	100%	2.3	0	12	12
Calcium	mg/Kg	102000	100%	121000	0	12	12
Chromium	mg/Kg	23.3	100%	29.6	0	12	12
Cobalt	mg/Kg	13.1	100%	30	0	12	12
Copper	mg/Kg	190	100%	33	3	12	12
Iron	mg/Kg	32100	100%	36500	0	12	12
Lead	mg/Kg	66.7	100%	24.8	4	12	12
Magnesium	mg/Kg	25400	100%	21500	1	12	12
Manganese	mg/Kg	536	100%	1060	0	12	12
Mercury	mg/Kg	0.08	83%	0.1	0	10	12
Nickel	mg/Kg	44.3	100%	49	0	12	12
Potassium	mg/Kg	1920	100%	2380	0	12	12
Selenium	mg/Kg	1.5	33%	2	0	4	12
Sodium	mg/Kg	140	100%	172	0	12	12
Vanadium	mg/Kg	26.2	100%	150	0	12	12
Zinc	mg/Kg	569	100%	110	4	12	12

(1) The TAGM Criteria are identified in NYSDEC's Technical and Administrative Guidance Memorandum #4046, Determination of Soil Cleanup Objectives and Cleanup Levels, Jan 24, 1994.

TABLE 8
SUMMARY OF GROUNDWATER DATA – SEAD-60

Parameter	Units	Maximum Concentration	Frequency of Detection	Type of Standard	Standard Level (1)	Number Exceeding Standard	Number of Times Detected	Number of Analyses
Volatile Organics								
Acetone	ug/L	77	75%			0	3	4
Benzene	ug/L	1	25%	GA	1	0	1	4
Pesticides								
Beta-BHC	ug/L	0.049	25%	GA	0.04	1	1	4
Metals								
Aluminum	ug/L	376	100%	SEC	50	3	4	4
Barium	ug/L	88.7	100%	GA	1000	0	4	4
Calcium	ug/L	113000	100%			0	4	4
Chromium	ug/L	0.56	50%	GA	50	0	2	4
Cobalt	ug/L	0.72	25%			0	1	4
Copper	ug/L	0.99	25%	GA	200	0	1	4
Iron	ug/L	1440	100%	GA	300	4	4	4
Magnesium	ug/L	55100	100%			0	4	4
Manganese	ug/L	377	100%	SEC	50	4	4	4
Mercury	ug/L	0.05	50%	GA	0.7	0	2	4
Nickel	ug/L	1.6	25%	GA	100	0	1	4
Potassium	ug/L	8760	100%			0	4	4
Sodium	ug/L	59400	100%	GA	20000	1	4	4
Thallium	ug/L	1.8	25%	MCL	2	0	1	4
Vanadium	ug/L	1.5	50%			0	2	4
Zinc	ug/L	6.9	75%	SEC	5000	0	3	4

(1) GA – State of New York GA Groundwater Standard, NYSDEC TOGS 1.1.1, 1998 as amended in 1999 and 2000
MCL –Maximum Contaminant Level, National Primary Drinking Water Standards, EPA 816-F-01-007, March 2001
SEC –Secondary Drinking Water Regulations, EPA 810/K-92-001, July 1992.

TABLE 9
SUMMARY OF SURFACE WATER DATA – SEAD-60

Parameter	Units	Maximum Concentration	Frequency of Detection	Type of Standard (1)	Standard Level	Number Exceeding Standard	Number of Times Detected	Number of Analyses
METALS								
Aluminum	ug/L	259	100%	AWQS CLASS C	100	1	4	4
Arsenic	ug/L	1.6	25%	AWQS CLASS C	150	0	1	4
Barium	ug/L	49.4	100%			0	4	4
Calcium	ug/L	89000	100%			0	4	4
Chromium	ug/L	0.68	50%	AWQS CLASS C	139.45	0	2	4
Copper	ug/L	2	100%	AWQS CLASS C	17.32	0	4	4
Iron	ug/L	453	100%	AWQS CLASS C	300	1	4	4
Magnesium	ug/L	22000	100%			0	4	4
Manganese	ug/L	28.5	100%			0	4	4
Nickel	ug/L	1.8	75%	AWQS CLASS C	99.92	0	3	4
Potassium	ug/L	1430	100%			0	4	4
Sodium	ug/L	53800	100%			0	4	4
Vanadium	ug/L	0.85	25%	AWQS CLASS C	14	0	1	4
Zinc	ug/L	9.6	100%	AWQS CLASS C	159.25	0	4	4

(1) State of New York Class C, Aquatic Species, NYSDEC TOGS 1.1.1, 1998 as amended in 1999 and 2000.

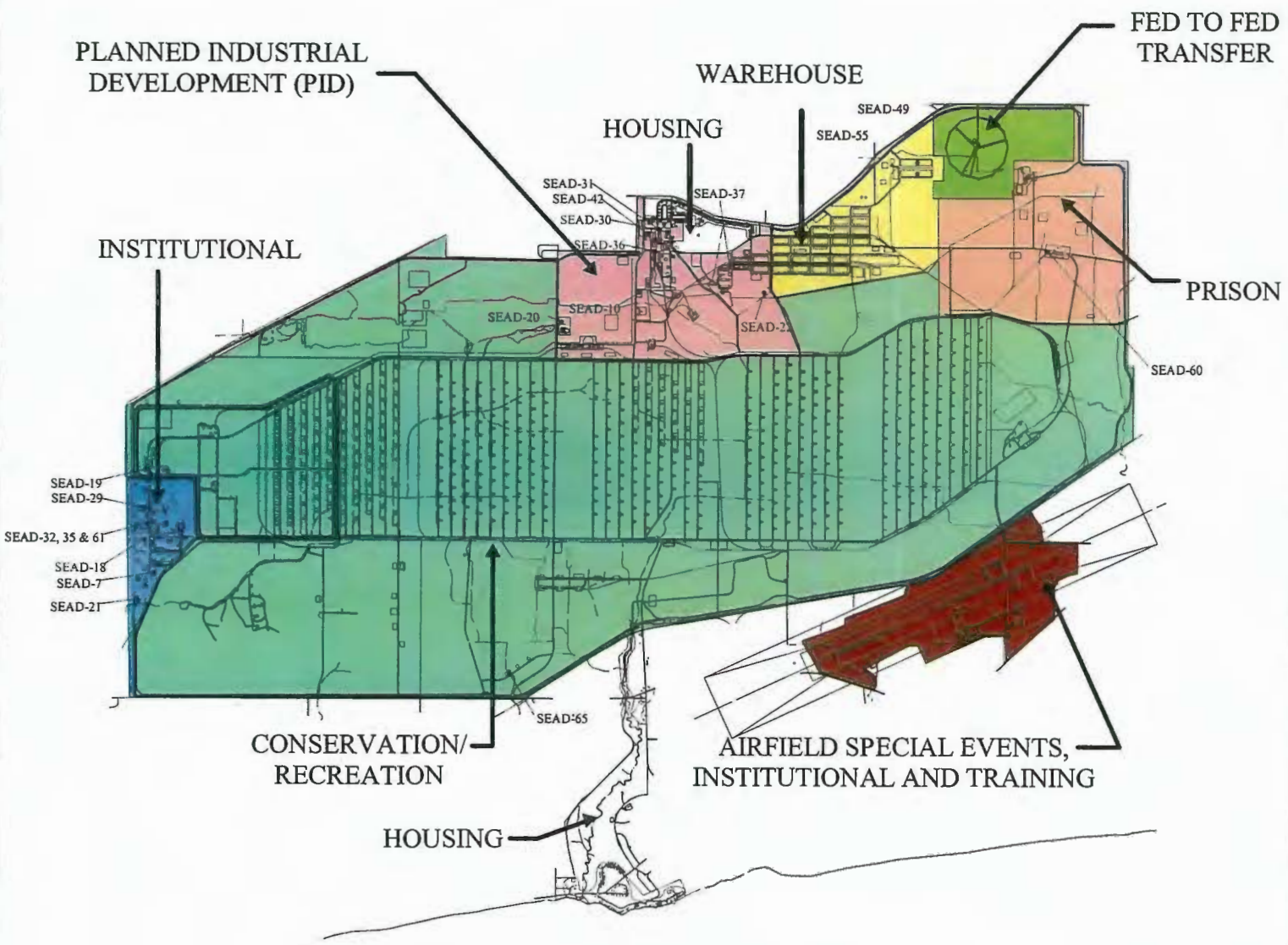
TABLE 10
SUMMARY OF SEDIMENT DATA – SEAD-60

Parameter	Units	Maximum Concen-tration	Frequency of Detection	Type of Standard (1)	Standard Level	Number Exceeding Standard	Number of Times Detected	Number of Analyses
VOLATILES								
Chloroform	ug/Kg	3	25%			0	1	4
SEMIVOLATILES								
Benzo(a)anthracene	ug/Kg	68	75%	HHBAC	50.8	3	3	4
Benzo(a)pyrene	ug/Kg	79	75%	HHBAC	50.8	3	3	4
Benzo(b)fluoranthene	ug/Kg	120	75%	HHBAC	50.8	3	3	4
Benzo(ghi)perylene	ug/Kg	93	75%			0	3	4
Benzo(k)fluoranthene	ug/Kg	97	75%	HHBAC	50.8	3	3	4
Bis(2-Ethylhexyl)phthalate	ug/Kg	1100	100%	BALCTC	7801	0	4	4
Chrysene	ug/Kg	160	75%	HHBAC	50.8	3	3	4
Fluoranthene	ug/Kg	200	75%	BALCTC	39887	0	3	4
Indeno(1,2,3-cd)pyrene	ug/Kg	68	75%	HHBAC	50.8	2	3	4
Phenanthrene	ug/Kg	70	75%	BALCTC	4693	0	3	4
Pyrene	ug/Kg	250	75%	BALCTC	37580	0	3	4
PESTICIDES								
4,4'-DDE	ug/Kg	5.4	50%	HHBAC	0.39	2	2	4
4,4'-DDT	ug/Kg	3.4	50%	HHBAC	0.39	2	2	4
Alpha-Chlordane	ug/Kg	1.9	25%	HHBAC	0.04	1	1	4
Endosulfan I	ug/Kg	2.1	50%	BALCTC	1.17	2	2	4
METALS								
Aluminum	mg/Kg	12700	100%			0	4	4
Arsenic	mg/Kg	4.8	100%	LEL	6	0	4	4
Barium	mg/Kg	97.6	100%			0	4	4
Beryllium	mg/Kg	0.62	100%			0	4	4
Cadmium	mg/Kg	0.44	100%	LEL	0.6	0	4	4
Calcium	mg/Kg	227000	100%			0	4	4
Chromium	mg/Kg	19.5	100%	LEL	26	0	4	4
Cobalt	mg/Kg	9.6	100%			0	4	4
Copper	mg/Kg	21.1	100%	LEL	16	1	4	4
Cyanide	mg/Kg	3.3	50%			0	2	4
Iron	mg/Kg	25000	100%	LEL	20000	2	4	4
Lead	mg/Kg	24.6	100%	LEL	31	0	4	4
Magnesium	mg/Kg	8380	100%			0	4	4
Manganese	mg/Kg	509	100%	LEL	460	2	4	4
Mercury	mg/Kg	0.05	75%	LEL	0.15	0	3	4
Nickel	mg/Kg	27.2	100%	LEL	16	3	4	4
Potassium	mg/Kg	1610	100%			0	4	4
Sodium	mg/Kg	134	75%			0	3	4
Thallium	mg/Kg	0.55	25%			0	1	4
Vanadium	mg/Kg	23.9	100%			0	4	4
Zinc	mg/Kg	101	100%	LEL	120	0	4	4

(1) NYSDEC Technical Guidance for Screening Contaminated Sediments, November 1993, as amended July 1994, March 1998, and January 1999.
BALCTC = Benthic Aquatic Life Chronic Toxicity Criteria
HHBAC = Human Health Bioaccumulation Criteria
LEL = Lowest Effect Level

TABLE 11
SOIL ANALYTICAL RESULTS – SEAD-65

Sample No.	Sample Location	Control Temp °C	pH	Comments
65-A1	NW Corner-Location A	21.1	7.29	High Clay Content
65-A2	NE Corner-Location A	21.1	7.16	
65-A3	Center-Location A	21.2	7.74	
65-A4	SE Corner-Location A	21.1	7.81	High Clay Content
65-A5	SW Corner-Location A	21.1	7.27	
65-A2 (Dup)	Duplicate of 65-A2	20.9	7.24	
65-B1	W Corner-Location B	20.8	7.51	
65-B2	N Corner-Location B	20.8	7.82	
65-B3	Center-Location B	20.9	8.09	High Clay Content
65-B4	E Corner-Location B	20.7	7.79	
65-B5	S Corner-Location B	20.8	7.67	
65-C1	W Corner-Location C	20.8	7.58	
65-C2	N Corner-Location C	20.7	7.57	High Clay Content
65-C3	Center-Location C	20.6	7.92	High Clay Content
65-C4	E Corner-Location C	20.7	6.59	High Clay Content
65-C5	S Corner-Location C	20.7	6.94	



Airfield

Conservation

Federal

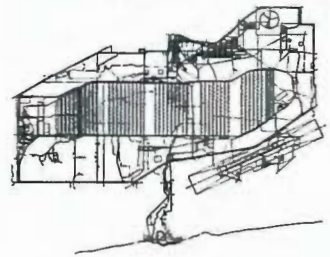
Industrial

Institutional

Prison

Warehouse

Housing



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Seneca Army Depot Activity
Proposed Plan - No Action Sites

Figure 1
Future Land Use

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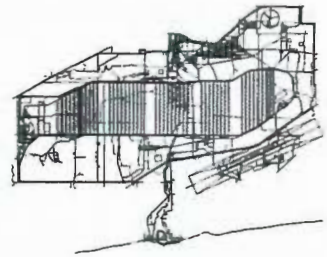
Project: 736026-01001 | March 2003

N

2000 0 2000 4000 Feet

SEAD-31
SEAD-42
SEAD-30
SEAD-36
SEAD-37
SEAD-20
SEAD-10
SEAD-22

- Airfield
- Conservation
- Federal
- Industrial
- Institutional
- Prison
- Warehouse
- Housing



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Seneca Army Depot Activity
Proposed Plan - No Action Sites

Figure 2
Location of No Action SWMUs
Industrial Development Area

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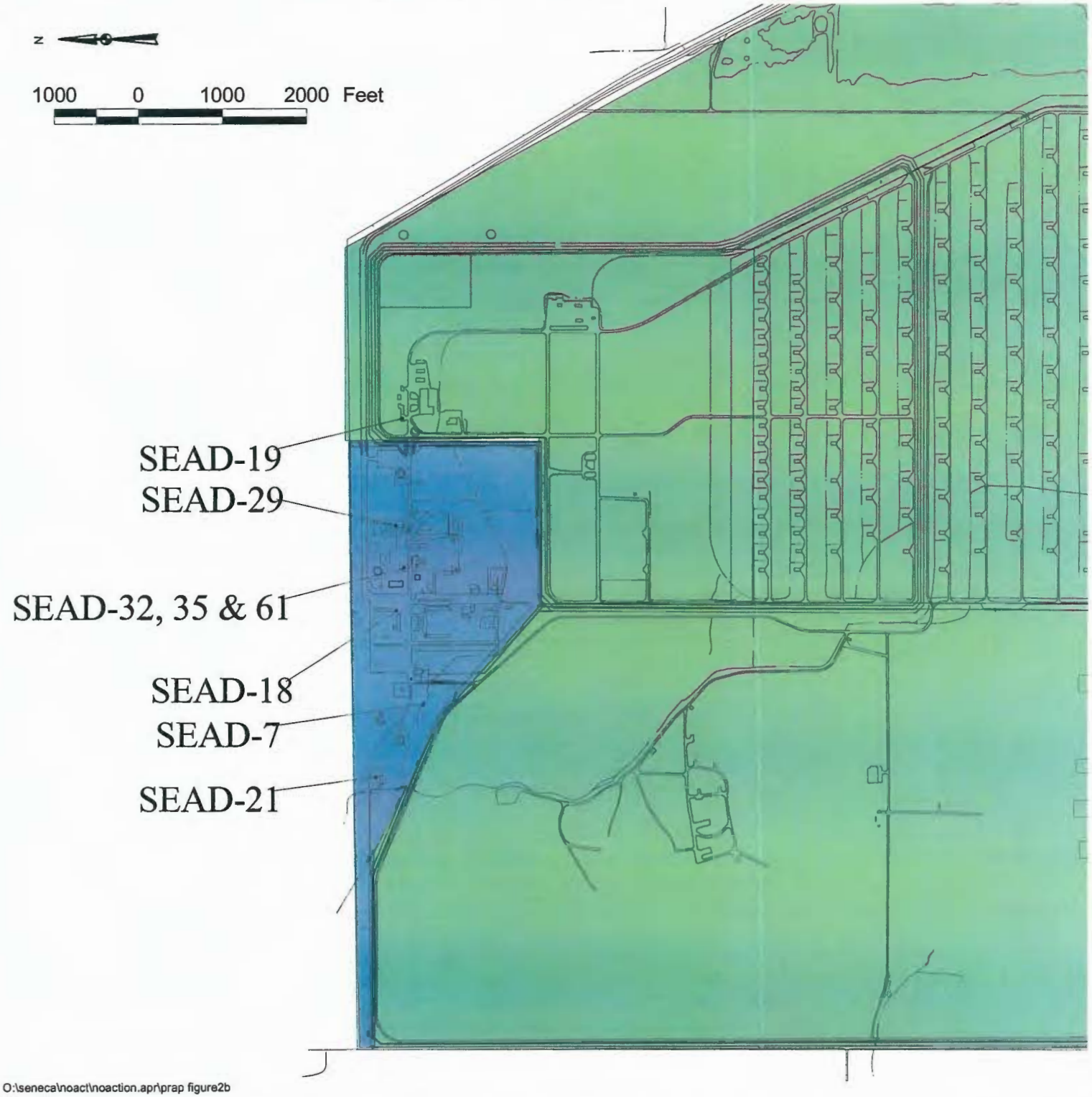

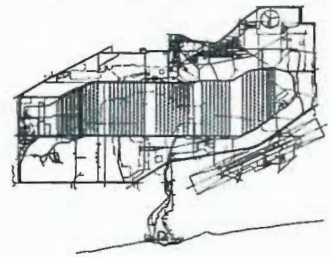

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Seneca Army Depot Activity
Proposed Plan - No Action Sites

Figure 3
Location of No Action SWMUs
Institutional Area

Project 736026-01001 | March 2003

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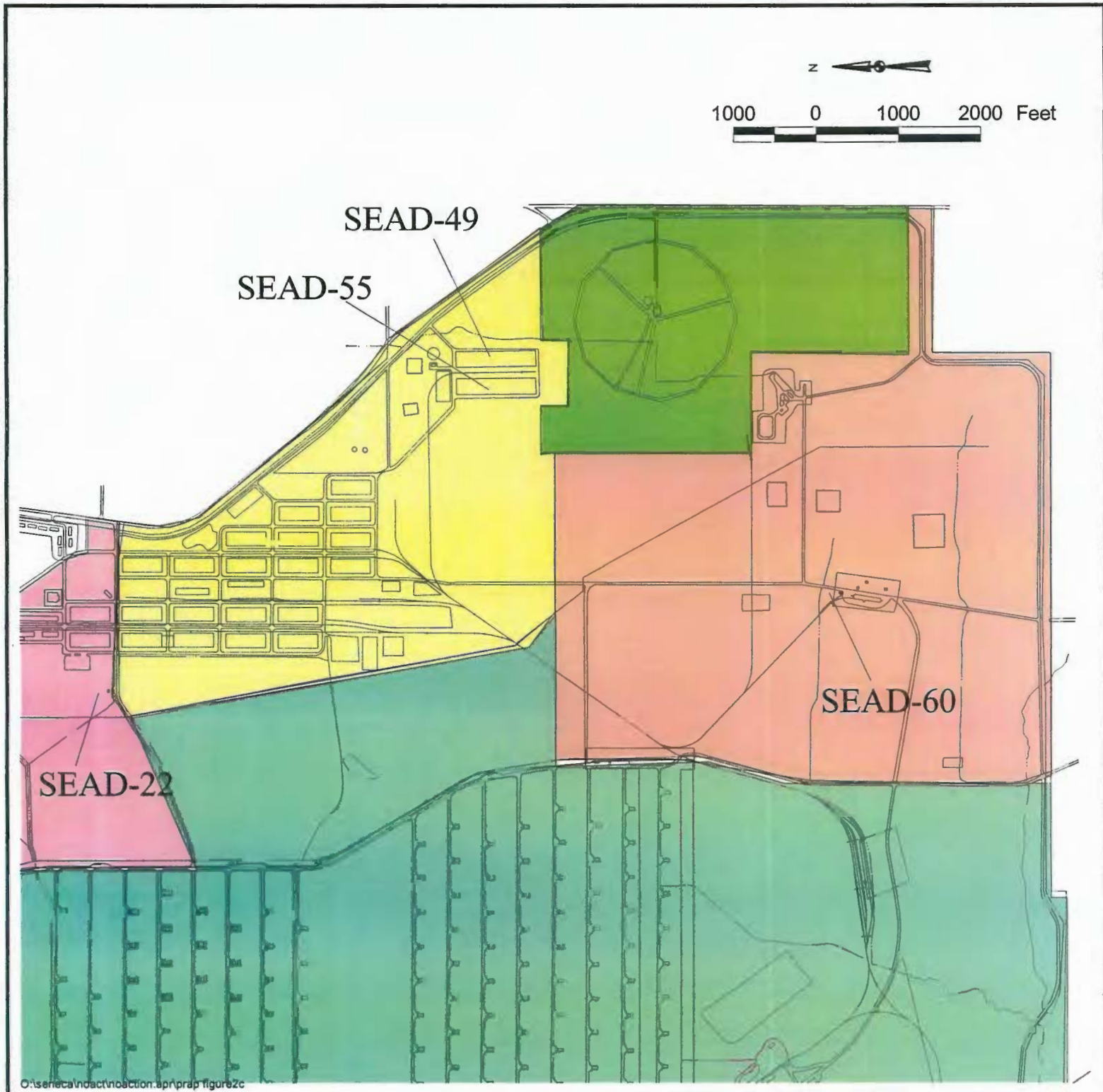


Airfield

Conservation

Federal

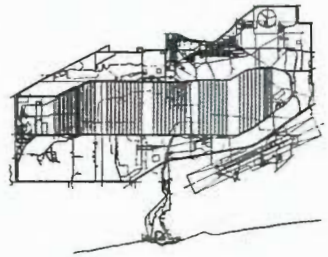
Industrial

Institutional

Prison

Warehouse

Housing



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Seneca Army Depot Activity
Proposed Plan - No Action Sites

Figure 4
Location of No Action SWMUs
Warehouse and Prison Areas

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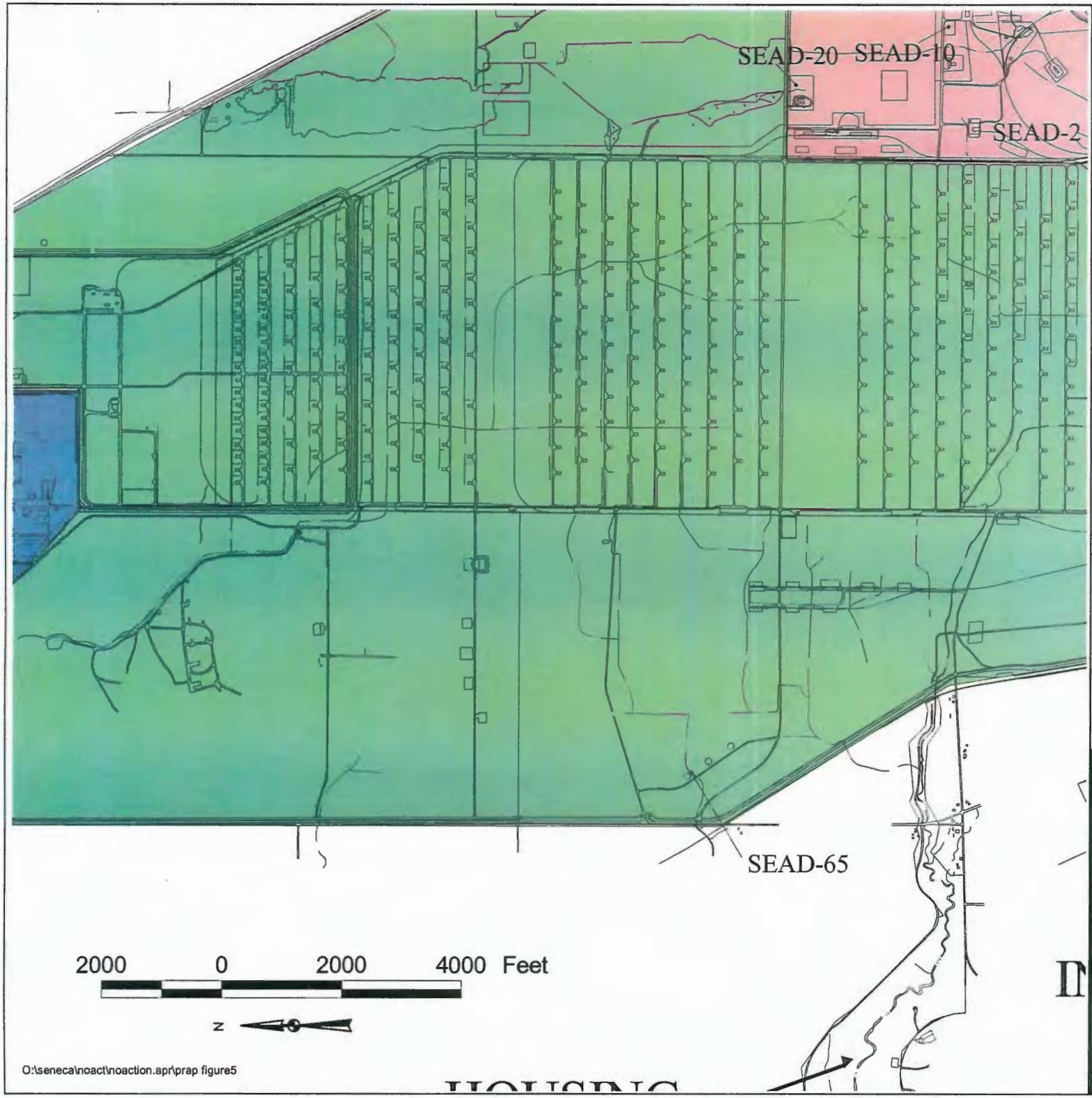
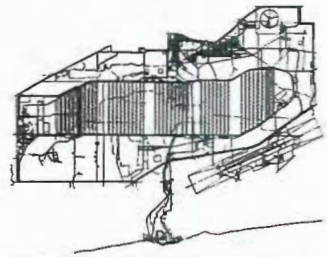


Airfield
Conservation
Federal
Industrial
Institutional
Prison
Warehouse
Housing



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Seneca Army Depot Activity
Proposed Plan - No Action Sites

Figure 5
Location of No Action SWMUs
Conservation/Recreational Area

Project: 736026-01001	March 2003