# PROPOSED PLAN
Completion of Removal Actions,
The Metals Sites, SEADs 50/54
at the
Seneca Army Depot Activity (SEDA)
Romulus, New York

Prepared For:
Seneca Army Depot Activity
POC: Stephen M. Absolom
Installation Manager

Prepared by:
R.W. Battaglia, Project Manager,
New York District, U.S. Army Corps of Engineers

## TABLE OF CONTENTS

##########################################
##########################################

**PROPOSED PLAN - DRAFT**

**PROPOSED PLAN: Completion of Removal Actions- The Metals Sites, SEADs 50/54 at the Seneca Army Depot Activity (SEDA), Romulus, New York**

December 2003

##########################################
##########################################

## *PURPOSE OF PROPOSED PLAN*

The purpose of this proposed plan is to provide the public the opportunity to review and comment on the Completion Report for the Removal Action that was accomplished at SEAD 50/54, that No Further Action will be documented in a Record of Decision, that all remedial activities at these sites will be completed under CERCLA and closed out as areas of concern.

The U.S. 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 describes implementation of the Removal Action, and that the cleanup goals have been achieve in accordance with the objectives of the Removal Action Workplan. The Proposed Plan was developed by representatives of the U. S. Army with support from the U.S. Environmental Protection Agency (EPA) and the New York State Department of Environmental Conservation (NYSDEC).

The option summarized here is described in the Decision Document for four Solid Waste Management Units (SWMU) that was signed on September 12, 2002. The Decision Document is contained in the Administrative Record, which is available for public review at the Seneca Army Depot Information Repository.

The two SWMUs, designated as SEADs 50, 54 are historic operational sites where shallow soils have been contaminated by the release of metals and, in some cases, semivolatile organic compounds. Releases were a result of site operations and not specific spill or release.

This Proposed Plan is being provided to inform the public of the U.S. Army's completion of remedial actions at SEADs 50 and 54. This document is intended to solicit public comments pertaining to all the remedial actions taken, the completion of remedial actions at the sites, and the determination that no further action is necessary.

The remedy described in this Proposed Plan was the preferred remedy for the site. The Decision Documents were presented in a public meeting on May 16, 2001. A public comment period was held for 30 days. Public comments are solicited on all of the options considered in the detailed analysis of the remediation process because EPA, NYSDEC, and the U.S. Army may select a remedy other than the preferred remedy. The final decision regarding the selected remedy was made after the U.S. Army, the EPA and the NYSDEC had taken into consideration all public comments.

Dates to remember:
**MARK YOUR CALENDAR**

December 15,2003 through January 13,2004 Public comment period.
Public comment period on RI/FS report, Proposed Plan, and remedy considered.

16 December 2003
Public presentation at Seneca County Office Building, 1 DiPronio Drive, Waterloo, NY in the Heroes Conference Room starting at 7 PM.

## Remedial Investigation Summary at SEAD-50/54

An Expanded Site Inspection (ESI) was performed at SEADs-50/54 between 1993 and 1994. The ESI combined geophysical surveys and intrusive operations to characterize the nature and extent of contaminants present in the area.

During intrusive operations environmental samples of soil and groundwater, surface water and sediment were collected. All samples collected as part of the ESI were analyzed for the following constituents: volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), pesticides polychlorinated biphenyls (PCBs), metals, and cyanide. In addition soil samples collected from SEAD-50/54 were analyzed for asbestos.

Fifteen surface soil samples, three groundwater samples (i.e., one background, two downgradient), three surface water, and three sediment samples were collected from SEADs 50 and 54.

### 2.2.3 Results of ESI Program at SEAD-50/54

**Soil**

Fifty-six analytes plus asbestos were detected in one or more of the shallow soils collected from SEAD-50/54. Of the 56 analytes detected, one was a VOC, 20 were SVOCs, 13 were pesticides or PCBs, and the remaining 22 were metals.

Concentrations measured for seven SVOCs (including six polynuclear aromatic hydrocarbons and phenol) surpassed their respective TAGM criteria values. A majority of the concentrations found above TAGM levels were identified in three samples collected from locations SS50-11, SS50-14, and SS50-15. Each of these locations is in the northern part of the historic tank farm.

Eight metals (i.e., antimony, arsenic, chromium, copper, lead, magnesium, mercury, and zinc) were found in soil samples at concentrations that surpassed their respective NYSDEC TAGM criteria levels. Although lead was found at concentrations that exceeded its TAGM level in 13 of the 15 surface soil samples characterized, it was not found at a concentration that exceeded US EPA's recommended soil clean-up level for residential properties.

Asbestos (chrysotile), at a level of 10 to 15 percent, was found in a single sample collected from SEAD-50/54. This sample was not collected near Tank #88 which continues to contain Asbestos.

**Groundwater**

The available data indicate that groundwater has not been significantly impacted by the historic mineral/ore storage activities performed at SEADs 50/54. One semivolatile organic compound and 18 metals were detected in one or more of the groundwater samples collected. Concentrations measured for five of the metals (i.e., aluminum, iron, manganese, sodium and thallium) surpassed their respective groundwater criteria levels. Of these metals, only thallium, which was detected in one of the groundwater samples at a concentration of 3 ug/L and surpassed the US EPA's MCL is of potential concern. However, thallium was not detected in soil samples collected from SEADs 50/54, and the groundwater in this area is not used as a source of drinking water.

*SURFACE WATER*

Available data indicate that surface water at the site has not been significantly impacted by the historic storage activities that were conducted in SEADs 50/54. Fifteen metals were detected in the surface water samples collected, and only two of these metals (i.e., aluminum and iron) were found at a concentration that exceeded their NYS class C surface water criteria.

**Ditch Soils**

Available data suggest that soils in the stormwater drainage ditches at SEADs 50/54 may have been impacted by the historic activities conducted in the area. Forty-four analytes, including one VOC, 17 SVOCs, six pesticides and PCBs and 20 metals were detected in samples collected. Of the compounds detected, 20 were detected at concentrations that exceeded their NYSDEC sediment criteria levels.

Six SVOCs (i.e., benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene and indeno(1,2,3-cd)pyrene) in sediment samples. Five pesticides/PCB compounds (i.e., 4,4'-DDE, alpha-chlordane, aroclor-1242, aroclor-1260 and endosulfan I) were detected in ditch soil samples at concentrations that exceeded sediment criteria values. Nine metals (i.e., antimony, arsenic, cadmium, copper, iron, lead manganese, nickel and zinc) were detected in ditch soil samples at concentrations that exceeded NYSDEC sediment criteria values.

## *COMMUNITY ROLE IN SELECTION PROCESS*

The U.S. 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. To this end, the RI/FS report, the Proposed Plan and supporting documentation have been made available to the public for a public comment period, which begins on December 15, 2003 and concludes on 13 January 2004.

A public meeting will be held during the public comment period at the Seneca County Office Building, 1 DiPronio Drive, Waterloo, NY in the Heroes Conference Room on December 16, 2003 at 7 PM to present the conclusions of the Completion Report, to elaborate further on the reasons for recommending the preferred remedial option, and to receive public comments.

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 document which formalizes the selection of the remedy.

All written comments should be addressed to:

Mr. Stephen Absolom
Installation Manager
Building 123
5786 Route 96, P.O. Box 9
Seneca Army Depot Activity
Romulus, NY 14541-5001

Copies of the Decision Documents, Proposed Plan, and supporting documentation are available at the following repository:

Seneca Army Depot Activity
Building 123
5786 State Route 96, P.O. Box 9
Romulus, NY 14541-5001
(607) 869-1309
Hours: M-F 8:30 am to 4:30 pm

## *SITE BACKGROUND*

SEDA is a 10,587-acre military facility located in Seneca County, Romulus, New York that has been owned by the United States Government and operated by the Department of the Army since 1941. The facility 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).

SEADs 50/54 are located on the eastern side of the Seneca Army Depot, in the Planned Industrial Area (PID) which is bounded on the east by Route 96, and on the south by the U.S. Coast Guard Loran-C facility.

### Time Critical Removal Action Summary

A time critical removal action, also known as an Interim Removal Measure (IRM), was conducted by the Army to accomplish this removal action to support the county's reuse initiatives in the construction of a county safety building and jail at this site. Cleanup requirements for soils were adopted from the NYSDEC Technical and Administrative Guidance Memorandum (TAGM) cleanup guidelines. The Completion Report details all actions and analyses taken in this Removal Action.

## *SCOPE AND ROLE OF ACTION*

The scope of this action is to close out this site as adequately remediated under CERCLA. No further actions will be required for this site and the site will be released for its intended use.

The Completion Report summarizes and documents the removal activities accomplished, as well as the confirmatory sampling that was conducted to ensure contaminated soils were removed and the TAGM based cleanup goals were met.

The future land use of the site is listed by the Local Redevelopment Authority (LRA) as a safety building and prison. Cleanup levels, remedial action objectives and remedial alternatives were selected consistent with this intended future land use.

## *REMEDIAL ACTION OBJECTIVES*

Remedial action objectives were discussed and presented in the Decision Documents and in the May 16, 2001 public meeting.

## *SUMMARY OF REMEDIAL ALTERNATIVES*

This PRAP is to complete the CERCLA process and close out the site in the Record of Decision.

## *EVALUATION OF ALTERNATIVES*

The primary objective of the time-critical removal action is to excavate and remove surficial soils, soil underlying man-made drainage ditches, and soil in and around tanks and roads at the two SWMUs, where available data indicated that contamination by metals or SVOCs exists. The excavated areas will not be backfilled. However, reclaimed soil from the excavations will be re-graded, and re-vegetated for runoff control as planned future construction will excavate and grade these surfaces.

The completion of the removal actions was assessed by collecting and analyzing verification sample within and surrounding each excavation site. Data resulting from the confirmatory sampling and analysis sequences was compared to applicable criteria values; e.g., NYSDEC cleanup objectives for soil, to evaluate and assess the adequacy of the completed removal action.

### Long- Term Effectiveness and Permanence

The removal of soil contamination provided long term effectiveness in accordance with state and EPA guidelines.

### State and EPA Acceptance

NYSDEC and EPA, as the regulatory agencies overseeing the Army's cleanup actions, have accepted the removal actions at these sites.

### Community Acceptance

Community acceptance for the completion of the removal action will be assessed in the Record of Decision following review of the public comments received on this PRAP For No Further Action at SEADs 50/54.

## *GLOSSARY*

***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.

***Adsorption***
Adsorption is the adhesion of molecules of gas, liquid, or dissolved solids to a surface. The term also refers to a method of treating wastes in which activated carbon removes organic matter from wastewater.

***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, 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.*

***Army Corps of Engineer (USACOE)***
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.*

***Bioremediation***
Bioremediation refers to treatment processes that use microorganisms (usually naturally occurring) such as bacteria, yeast, or fungi to break down hazardous substances into less toxic or nontoxic substances. Bioremediation can be used to clean up contaminated soil and water. In-situ bioremediation treats the contaminated soil or groundwater in the location in which it is found. For ex situ bioremediation processes, contaminated soil must be excavated or groundwater pumped to the surface before they can be treated.

***Borehole***
A borehole is a hole cut into the ground by means of a drilling rig.

***Borehole Geophysics***
Borehole geophysics is nuclear or electric technologies used to identify the physical characteristics of geologic formations that are intersected by a borehole.

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

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

***Cancer Slope Factor***
The slope factor is a plausible upper-bound estimate of the probability of a response per unit intake of a chemical over a lifetime. The slope factor is used in risk assessments to estimate an upper-bond lifetime probability of an individual developing cancer as a result of exposure to a particular level of a potential carcinogen. Slope factors for each chemical are expressed in units of inverse mg chemical per kg body weight per day of exposure.

***Capital Cost***
The initial cost associated with constructing a treatment remedy. The capital cost does not include the operation and maintenance of the remedy.

***Carbon Adsorption***
Carbon adsorption is a treatment system that removes contaminants from groundwater or surface water as the water is forced through tanks containing activated carbon.

***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.

***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.

***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 clean up 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 clean up hazardous waste sites. EP A has primary responsibility for managing cleanup and enforcement activities authorized under CERCLA. Under the program, EP A 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 clean up 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.

***Data Quality Objective (DQO)***
DQOs are qualitative and quantitative statements specified to ensure that data of known and appropriate quality are obtained. The DQO process is a series of planning steps, typically conducted during site assessment and investigation, that is designed to ensure that the type, quantity, and quality of environmental data used in decision making are appropriate. The DQO process involves a logical, step-by-step procedure for determining which of the complex issues affecting a site are the most relevant to planning a site investigation before any data are collected.

***Dechlorination***
Dechlorination, the process used primarily to treat and destroy halogenated aromatic contaminants, is the chemical reaction that removes halogens (usually chlorine) from the primary structure of the contaminating organic chemical. Dechlorination can treat contaminated liquids, soils, sludges, and sediments, as well as halogenated organics and PCBs, pesticides, and some herbicides.

***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.

***Electromagnetic (EM) Geophysics***
EM geophysics refers to technologies used to detect spatial (horizontal and vertical) differences in subsurface electromagnetic characteristics. The data collected provide information about subsurface environments.

***Engineered Control***
An engineered control, such as barriers placed between a contaminated area and the rest of a site, is a method of managing environmental and health risks. Engineered controls can be used to limit exposure pathways.

***Environmental Protection Agency (EPA)***
The federal regulatory agency responsible for enforcing the 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.

***Environmental Risk***
Environmental risk is the chance that human health or the environment will suffer harm as the result of the presence of environmental hazards.

***Environmental Site Assessment (ESA)***
An ESA is the process that determines whether contamination is present at a site.

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

***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.*

***Ex Situ***
The term ex situ or "moved from its original place, means excavated or removed.

***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.

***Filtration***
Filtration is a treatment process that removes solid matter from water by passing the water through a porous medium, such as sand or a manufactured filter.

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

***Groundwater***
Groundwater is the water flow 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 Aquife.*

***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.

***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.

***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.

***Inorganic Compounds includes Metals***
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. *See also Emerging Technology and Established Technology.*

***Ion Exchange***
Ion exchange, a common method of softening water, depends on the ability of certain materials to remove and exchange ions from water. These ion exchange materials, generally composed of insoluble organic polymers, are placed in a filtering device. Water softening exchange materials remove calcium and magnesium ions, replacing them with sodium ions.

***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.*

***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.

***Integrated Risk Information System (IRIS)***
IRIS is an electronic database that contains EP A's latest descriptive and quantitative regulatory information about chemical constituents. Files on chemicals maintained in IRIS contain information related to both non-carcinogenic and carcinogenic health effects.

***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.

***Leachate***
A leachate is a contaminated liquid that results when water collects contaminants as it trickles through wastes, agricultural pesticides, or fertilizers. Leaching may occur in farming areas and landfills and may be a means of the entry of hazardous substances into soil, surface water, or groundwater.

***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 Reuse Authority (LRA)***

Local Reuse Authority is an Army term, and applies to the Seneca County Industrial Development Agency (SCIDA).

***Mass Spectrometry***
Mass spectrometry is a method of chemical analysis in which the substance to be analyzed is heated and placed in a vacuum. The resulting vapor is exposed to a beam of electrons that causes ionization to occur, either of the molecules or their fragments. The ionized atoms are separated according to their mass and can be identified on that basis.

***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.*

***Methane***
Methane is a colorless, nonpoisonous, flammable gas created by anaerobic decomposition of organic compounds.

***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.

***Migration Pathway***
A migration pathway is a potential path or route of contaminants from the source of contamination to contact with human populations or the environment. Migration pathways include air, surface water, groundwater, and land surface. The existence and identification of all potential migration pathways must be considered during assessment and characterization of a waste site.

***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 EP A'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 clean up petroleum contamination from LUSTs across the country.

***New York State Department of Environmental Protection (NYSDEC)***
The state regulatory agency responsible for enforcing the 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.

***Nephelometric Turbidity Unit (NTU)***
A measurement unit of turbidity in water. Small particles of soil particles, such as clays or silts, become suspended within a water sample and increase the turbidity of the sample. This increase in turbidity has been identified as a source of increased metals concentration in samples. This effect is especially noticeable for groundwater samples collected within the clay-rich glacial till aquifer at the SEDA.

***Operable Unit (OU)***
A grouping of sites into one larger entity. Sites can be grouped into an Operable Unit due to geographical proximity to each other, similar chemical hazards or for other reasons. The Ash Landfill Operable Unit is comprised of 5 sites that are all located within the 130-acre parcel.

***Operation and Maintenance (O&M)***
O&M refers to the activities conducted at a site, following remedial actions, to ensure that the cleanup methods are working properly. O&M activities are conducted to maintain the effectiveness of the remedy and to ensure that no new threat to human health or the environment arises. Under the Superfund program, the state or PRP assumes responsibility for O&M, which may include such activities as groundwater and air monitoring, inspection and maintenance of the treatment equipment remaining on site, and maintenance of any security measures or institutional controls.

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

***Permeability***
Permeability is a characteristic that represents a qualitative description of the relative ease with which rock, soil, or sediment will transmit a fluid (liquid or gas).

***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.

***Physical Separation***
Physical separation processes use different size sieves and screens to concentrate contaminants into smaller volumes. Most organic and inorganic contaminants tend to bind, either chemically or physically, to the fine fraction of the soil. Fine clay and silt particles are separated from the coarse sand and gravel soil particles to concentrate the contaminants into a smaller volume of soil that could then be further treated or disposed.

***Planned Industrial Area (PID)***
The Planned Industrial Area is the area on the east side of the former army depot that is planned for industrial development.

***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 banned in 1979.

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

***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, EP A requires PRPs, through administrative and legal actions, to clean up 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.

***Preliminary Site Characterization Summary Report (PSCR)***
A PSCR is a summary report prepared following the first phase of RI sampling. It is intended to provide a description of the results of the sampling, identify any data gaps and provide recommendations for modifications for sampling for the second phase of RI sampling. The PSCR does not include an analysis of risk but does provide a comparison of the Phase I data to any standards, criteria or guidelines that may be appropriate.

***Present Worth Cost Analysis***
The equivalent future worth of money at the present time. By discounting all costs to a common base year, the costs for different remedial action alternative scan be compared on the basis of a single figure for each alternative. This is a calculated value that requires the length of time that the future worth will be needed and the interest rate. For example, the present worth of a long-term operation and maintenance cost of a remedy is provided in terms of the present worth. Typically, a 30-year cost is required and an interest rate of 10%.

***Presumptive Remedies***
Presumptive remedies are preferred technologies for common categories of CERCLA sites that have been identified through historical patterns of remedy selection and EP A's scientific and engineering evaluation of performance data on technology implementation.

***Pump and Treat***
Pump and treat is a general term used to describe remediation methods that involve the pumping of groundwater to the surface for treatment. It is one of the most common methods of treating polluted aquifers and groundwater.

***Quality Assurance (QA)***
QA is a system of management activities that ensure that a process, item, or service is of the type and quality needed by the user. QA deals with setting policy and implementing an administrative system of management controls that cover planning, implementation, and review of data collection activities. QA is an important element of a quality system that ensures that all research design and performance, environmental monitoring and sampling, and other technical and reporting activities conducted by EPA are of the highest possible quality.

***Quality Control (QC)***
QC refers to scientific precautions, such as calibrations and duplications, that are necessary if data of known and adequate quality are to be acquired. QC is technical in nature and is implemented at the project level. Like QA, QC is an important element of a quality system that ensures that all research design and performance, environmental monitoring and sampling, and other technical and reporting activities conducted by EPA are of the highest possible quality.

***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 feasability 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 clean up 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.

***Revegate***
The process of replacing topsoil, seed and mulch on prepared soil to prevent wind and water erosion.

***RfD***
The reference dose (RfD) is an estimate (with uncertainty spanning perhaps an order of magnitude) of a daily exposure to the human population (including sensitive subgroups) that is likely to be without appreciable risk of deleterious effects during a lifetime.

***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***
The saturated zone 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.

***Semi-Volatile 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 10,000-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 clean-up activities will continue until all sites have been addressed.

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

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

***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 Gas***
Soil gas consists of gaseous elements and compounds that occur in the small spaces between particles of the earth and soil. Such gases can move through or leave the soil or rock, depending on changes in pressure.

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

***Soil Washing***
Soil washing is an innovative treatment technology that uses liquids (usually water, sometimes combined with chemical additives) and a mechanical process to scrub soils, removes hazardous contaminants, and concentrates the contaminants into a smaller volume. The technology is used to treat a wide range of contaminants, such as metals, gasoline, fuel oils, and pesticides. Soil washing is a relatively low-cost alternative for separating waste and minimizing volume as necessary to facilitate subsequent treatment. It is often used in combination with other treatment technologies. The technology can be brought to the site, thereby eliminating the need to transport hazardous wastes.

***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.

***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.*

***TCL Target Compound List***
The Target Compound List is a list of organic compounds that are required to analyzed when performing analytical procedures. The list includes volatile organic compounds, semi-volatile compounds, pesticides and PCBs.

***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 soil clean-up limits 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, semi volatile Organic Compound, and Volatile Organic Compound.*

***Threshold Criteria***
Criteria against which a remedial alternative is evaluated to determine if it will be further considered as an option for a given site. Screening of remedial alternatives is performed by whether the alternative will pass or fail the threshold criteria. The threshold criteria is overall protective of human health and the environment and is compliant with ARARs.

***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.

***Treatment Wall***
A treatment wall is a structure installed underground to treat contaminated groundwater found at hazardous waste sites. Treatment walls, also called passive treatment walls, are put in place by constructing a trench across the flow path of contaminated groundwater and filling the trench with one of a variety of materials carefully selected for the ability to clean up specific types of contaminants. As the contaminated groundwater passes through the treatment wall, the contaminants are trapped by the treatment wall or transformed into harmless substances that flow out of the wall. The major advantage of using treatment walls is that they are passive systems that treat the contaminants in place so the property can be put to productive use while it is being cleaned up. Treatment walls are useful at some sites contaminated with chlorinated solvents and metals. A treatment wall was installed at the Ash Landfill Operable Unit.

***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.

***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.

***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*

# Abandoned Deactivation Furnace (SEAD-16)
# Active Deactivation Furnace (SEAD-17)

**Public Presentation**

**December 16, 2003**

PARSONS

# History/Background of SEAD-16 and SEAD-17

PARSONS

# Review of the CERCLA Process

PARSONS

# Summary of Impacts at SEAD-16 and SEAD-17

PARSONS

# Recommended Action at SEAD-16 and SEAD-17

PARSONS

# Site History – SEAD-16

- SEAD-16 formerly housed a deactivation furnace where various small arms munitions were detonated within a rotating steel kiln. By-products were emitted through the furnace stack. No air pollution control devices were used.
- The furnace was used from ~ 1945 to the mid-1960s.
- Two USTs were removed from the site in 1993.

PARSONS

# Site History – SEAD-17

- Deactivation furnace built to replace the furnace at SEAD-16.
- Site has been inactive since 1989 due to RCRA permit status. [Note: Furnace was allowed to be used during one event to test its ability to desorb contaminants from soils at other SEDA sites.]
- Stack gases were treated prior to atmospheric discharge.

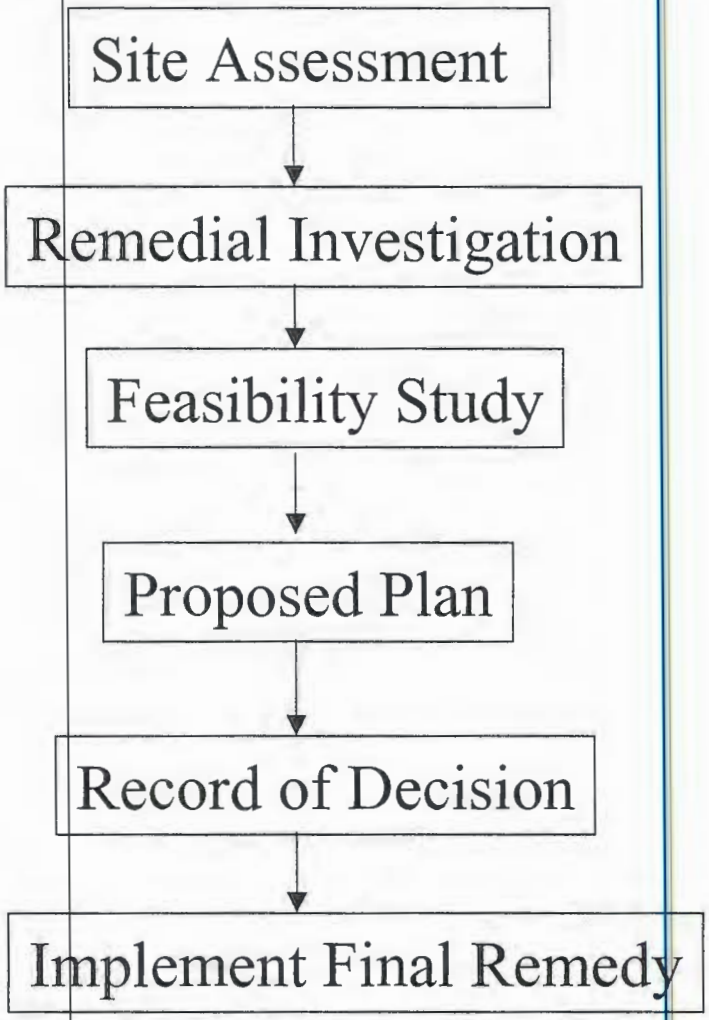
PARSONS

# Investigations/Reports at SEAD-16 and 17

- SWMU Classification Report - 1994
- Final Closure Report for USTs - 1994
- Expanded Site Inspection – 1995
- Remedial Investigation –1999
- Ordnance and Explosive EE/CA - 2001
- Feasibility Study – 2001
- Proposed Plan – 2003

PARSONS

# Review of the CERCLA Process




PARSONS

# Previous Investigations

- OE Survey at SEAD-17 (2000)
- Building material/asbestos survey at SEAD-16 (S-311, Bldg. 366) (1993, 1996)
- Surface and Subsurface Soil Sampling at both sites (1993, 1996)
- Groundwater Sampling at both sites (1993, 1996)
- Sediment and Surface Water Sampling at both sites (1993, 1996)

PARSONS

# Impacts Found at SEAD-16

- Soil has been impacted primarily by Metals
  - Lead up to 140,000 mg/kg (Residential Limit - 400 mg/kg)
  - Copper up to 37,900 mg/kg (TAGM 33 mg/kg)
  - Arsenic up to 32 mg/kg (TAGM 8.2 mg/kg)
  - Zinc up to 14,600 mg/kg (TAGM 110 mg/kg)
- PAHs were found near Deactivation Furnace Building
- Surface water impacted by metals
- Groundwater impacted in one location by antimony and lead

PARSONS

# Impacts Found at SEAD-17

- Soil has been impacted primarily by Metals
  - Lead up to 6270 mg/kg (Residential Limit - 400 mg/kg)
  - Copper up to 837 mg/kg (TAGM 33 mg/kg)
  - Antimony up to 52 mg/kg (TAGM 5.9 mg/kg)
  - Zinc up to 1530 mg/kg (TAGM 110 mg/kg)
- Surface water not significantly impacted
- Groundwater not significantly impacted

PARSONS

# Impacts Found at SEADs-16/17 Ordnance

- Site Classified as a Category 0 Site
- 117 of 478 anomalies in SEAD-17 (10-100x100 grids) were OE or OE scrap.
- Three OE items were a fuse and two 20 mm.
- SEAD-16 not surveyed due to interference from surface features; assumptions and conclusions for SEAD-16 were assumed the same as for SEAD-17.

PARSONS

# Risk Evaluation SEAD-16

- Considered for Planned Future Use –Industrial
- Current levels of COCs (excluding lead) are acceptable for:
  - current site worker; and
  - future child trespasser.
- Current levels of COCs (excluding lead) are unacceptable for:
  - a future industrial worker; -future day care center child
  - future on-site construction worker; -future day care center worker

- Lead levels exceed levels considered protective by USEPA and NYSDEC under industrial scenario.
- Risk assessment showed a low likelihood of ecological risk to receptors.

PARSONS

# Risk Evaluation SEAD-17

- Considered for Planned Future Use –Industrial
- Current levels of COCs (excluding lead) are acceptable for:
  - A current site worker
  - future on-site construction worker
  - future child trespasser.
- Current levels of COCs (excluding lead) are unacceptable for:
  - a future industrial worker;
  - future day care center child; and
  - future day care center worker.
- Lead levels exceed levels considered protective by USEPA and NYSDEC under industrial scenario.
- Risk assessment showed a low likelihood of ecological risk to receptors.

PARSONS

# Purpose of Action at SEAD-16 and SEAD-17

- Remediate soil and ditch soils to reduce human health risks to future industrial receptors
- Remove building debris at SEAD-16 to reduce human health risks to future industrial worker
- Remove any ordnance from the site
- Restrict groundwater use and monitor levels of COCs in groundwater
- Establish institutional controls to ensure that remedy remains protective of human health and the environment.

PARSONS

# Alternatives Considered for SEADs-16 and -17

| Alternative No. | Description |
|---|---|
| 1 | No Action |
| 2 | Containment: Institutional Controls, Soil Cover |
| 3 | In-Situ Treatment: In-situ stabilization, Soil Cover |
| 4 | Off-Site Disposal: Excavate, Stabilize, Off-Site Disposal |
| 4P (Residential) | Off-Site Disposal: Excavate Using Residential Clean up Goals, Stabilize, Off-Site Disposal |
| 5 | On-Site Disposal: Excavate, On-Site Stabilization, On-Site Subtitle D Landfill |
| 6 | Innovative Treatment: Excavate, Soil Wash, Backfill Coarse Fraction, Landfill Fine Fraction |

PARSONS

# Components of Selected Remedy (Alternative 4) at SEADs-16 and -17

- Conduct Additional Sampling to Further Delineate Areas of Excavation
- Clear Sites for Ordnance
- Remove SEAD-16 Building Debris
- Excavate 275 CY of Ditch Soils, 1760 CY of Surface Soils, 67 CY of Subsurface Soils at SEAD-16
- Excavate 2590 CY of Surface Soils at SEAD-17
- Stabilize Soils exceeding TCLP criteria and Dispose of Soils at Off-Site Landfill; Backfill Excavated Areas
- Conduct Semi-annual Groundwater Monitoring;
- Conduct Annual Sediment Sampling in Kendaia Creek;
- Implement Land Use Controls and Complete 5-year Reviews

PARSONS

# Proposed Soil Clean Up Goals[1]

| Compounds | Soil Cleanup Goal |
|---|---|
| **Polycyclic Aromatic Hydrocarbons (PAHs)** | |
| Benzo(a)anthracene (ug/kg) | 20,417 |
| Benzo(a)pyrene (ug/kg) | 2,042 |
| Benzo(b)fluoranthene (ug/kg) | 20,417 |
| Benzo(k)fluoranthene (ug/kg) | 50,000 |
| Chrysene (ug/kg) | 50,000 |
| Dibenz(a,h)anthracene (ug/kg) | 2,042 |
| Indeno(1,2,3-cd)pyrene (ug/kg) | 20,417 |
| **Metals** | |
| Antimony (mg/kg) | 29 |
| Arsenic (mg/kg) | 20 |
| Cadmium (mg/kg) | 14 |
| Copper (mg/kg) | 331 |
| Lead (mg/kg) | 1250 |
| Mercury (mg/kg) | 0.54 |
| Thallium (mg/kg) | 2.6 |
| Zinc (mg/kg) | 773 |

(1) Soil clean up goals are human health risk-based values protective of receptors under an industrial scenario.

PARSONS

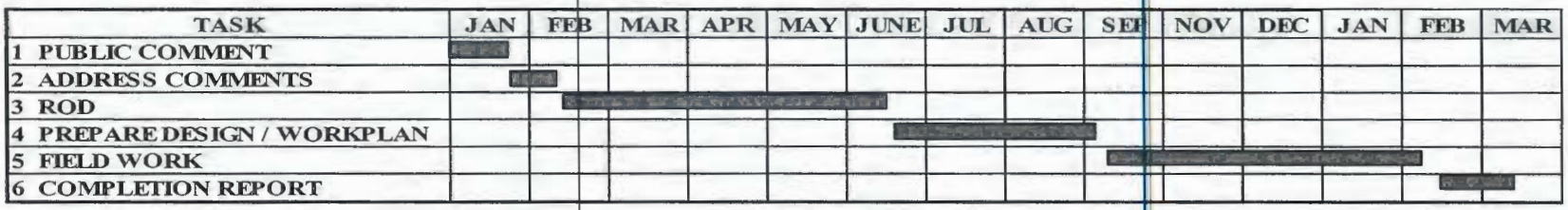
# Cost & Schedule

- Approximately $3.1 Million for Both Sites
- Field work should take approximately 4 months to complete

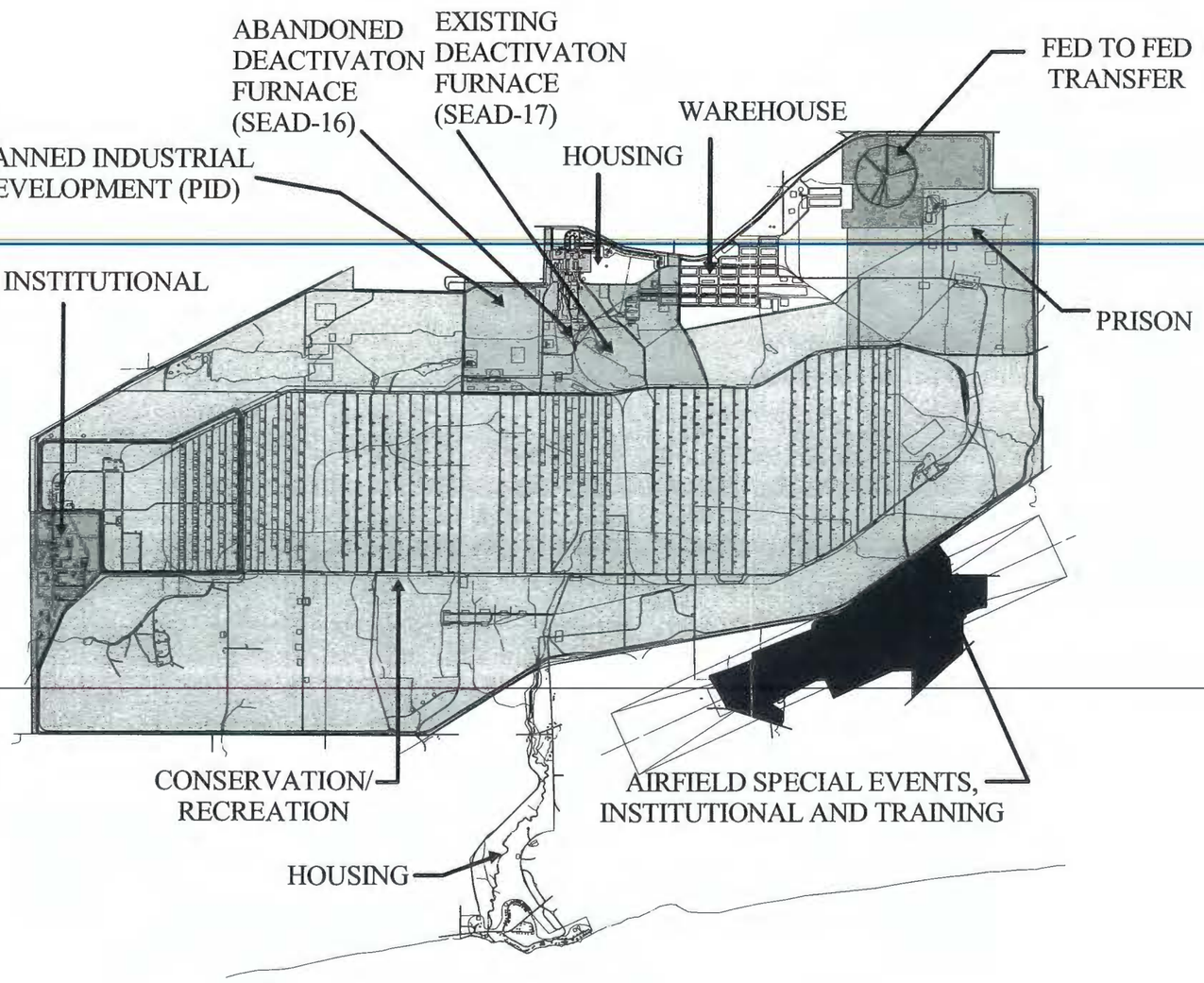
PARSONS

# Tentative Schedule

## 2004/2005




PARSONS



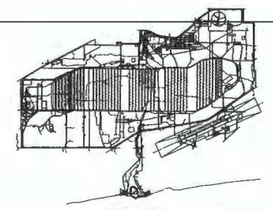

N

LEGEND

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

5000 0 5000 10000 Feet

KEY PLAN



PARSONS

PARSONS ENGINEERING SCIENCE, INC.

SENECA ARMY DEPOT ACTIVITY

FIGURE 1-2

Future Land Use

JOB NUMBER: 736026-01001

DATE: AUGUST 2001

o:\seneca\noact\noaction.apr


## LEGEND

- MINOR WATERWAY
- MAJOR WATERWAY
- FENCE
- UNPAVED ROAD
- BRUSH LINE
- RAILROAD
- 750 — GROUND SURFACE ELEVATION CONTOUR
- APPROX. LIMIT OF THE OPERABLE UNIT SEAD 16 & SEAD 17
- SURVEY MONUMENT
- ROAD SIGN
- DECIDOUS TREE
- FIRE HYDRANT
- MANHOLE
- GUIDE POST
- POLE
- UTILITY BOX
- CORDINATE GRID (250' GRID)
- OVERHEAD UTILITY POLE
- MAILBOX/RR SIGNAL

N

75 0 75 150
TEXT

PARSONS
PARSONS ENGINEERING SCIENCE, INC.

CLIENT/PROJECT TITLE
SENECA ARMY DEPOT ACTIVITY
FEASIBILITY STUDY FOR
SEAD-16 AND SEAD-17

| DEPT. | Dwg. No. |
|---|---|
| ENVIRONMENTAL ENGINEERING | 729893-01002 |

FIGURE 1-5
APPOXIMATE LIMIT OF THE
OPERABLE UNIT SEAD-16 & SEAD-17

| SCALE | DATE | REV |
|---|---|---|
| 1"=100' | SEPTMEBER 2000 | A |

| | SURFACE SOILS | SUBSURFACE SOILS | DITCH SOILS |
|---|---|---|---|
| AREA (S.F.) | 47,516 | 675 | 7420 |
| DEPTH (FT) | 1 | 2 FT – 3 FT (3) | 1 |
| VOLUME (C.Y.) | 1760 | 67 | 275 |

## LEGEND

- MINOR WATERWAY
- MAJOR WATERWAY
- FENCE
- REMEDIATION LIMIT WHICH WILL BE DEFINED THROUGH PRE-DESIGN SAMPLING
- BRUSH LINE
- LANDFILL EXTENTS
- RAILROAD
- 760 GROUND SURFACE ELEVATION CONTOUR
- REMEDIATION LIMIT

- SURVEY MONUMENT
- L.D. LOADING DOCK
- ROAD SIGN
- DECIDOUS TREE
- FIRE HYDRANT
- MANHOLE
- GUIDE POST
- POLE
- UTILITY BOX
- CORDINATE GRID (250' GRID)
- OVERHEAD UTILITY POLE
- MAILBOX/RR SIGNAL

- SOIL BORING LOCATION (SB16-4)
- MONITORING WELL LOCATION (MW16-7)
- SURFACE SOIL SAMPLE LOCATION (SS16-5)
- SEDIMENT SAMPLE LOCATION (SW/SD16-6)

- CASE 2 SURFACE SOILS WITH LEAD CONCENTRATION > 1250 mg/kg OR EXCEEDING OTHER CLEANUP GOALS (SEE NOTE 2)
- CASE 2 SUBSURFACE SOILS WITH LEAD CONCENTRATION > 1250 mg/kg OR EXCEEDING OTHER CLEANUP GOALS (SEE NOTE 2)
- CASE 2 DITCH SOILS WITH LEAD CONCENTRATION > 1250 mg/kg OR EXCEEDING OTHER CLEANUP GOALS (SEE NOTE 2)

0 100 200

SCALE IN FEET

NOTE:
1. LIMIT OF THE PROPOSED REMEDIATION AREA BASED ON THE DATA PRESENTED IN THE REMEDIAL INVESTIGATION REPORT. (PARSONS ES, MARCH 1999)
2. LIMIT OF THE PROPOSED REMEDIATION AREA INCLUDES SOIL EXCEEDING METAL (ANTIMONY, ARSENIC, CADMIUM, COPPER, LEAD, MERCURY, THALLIUM, ZINC) AND PAH CLEANUP GOALS FOR THE INDUSTRIAL USE SCENARIO.
3. THE AREAS SURROUNDING SB16-4 AND SB16-5 ARE TO BE REMEDIATED TO A DEPTH OF 3 FT. THE AREA SURROUNDING SB16-2 IS TO BE REMEDIATED TO A DEPTH OF 2 FT.
4. TRACKS WITHIN LIMITS OF EXCAVATION WILL NOT DISTURBED DURING REMEDIAL ACTION.

PARSONS

CLIENT/PROJECT TITLE
SENECA ARMY DEPOT ACTIVITY
PROPOSED PLAN
SEAD-16 AND SEAD-17

DEPT. ENVIRONMENTAL ENGINEERING | Dwg. No. 729895-01002

# FIGURE 2
## SEAD-16 REMEDIATION AREA
## (SOIL EXCEEDING CLEANUP GOALS)

SCALE 1" = 100'-0" | DATE MARCH 2003 | REV A

R:\SENECA\729895\fig2-1.dwg

| SURFACE AND DITCH SOILS | |
|---|---|
| AREA | 69,900 S.F. |
| DEPTH | 1 FT |
| VOLUME | 2590 C.Y. |

N 998500

N 998250

N 998000

E 748750

E 749000

E 749250

E 749500

SS17-500-N

SS17-24

SS17-25

SS17-8

SS17-26

SS17-5

SS17-12

SS17-27

SS17-7

SS17-17

MW17-8/SB17-8

SS17-9

SS17-6

SS17-21

SS17-13

SS17-28

SS17-29

MW17-1/SB17-1

SS17-30

SS17-2

SS17-15

SS17-22

SS17-19

Deactivation Furnace Building 367

Former Fuel Oil Pump Equipment

SS17-18

Building 607T

SS17-31

SS17-3

MW17-3/SB17-3

SS17-16

SS17-14

SS17-20

SS17-37

SS17-23

SS17-34

Number 2 Fuel Oil Tank

SS17-16-D

MW17-5

SS17-35

SS17-11

SS17-36

Liquid Propane Gas Tank

APPROXIMATE LOCATION OF DISCHARGE PIPE

SS17-38

SS17-39

SEAD-17A

SW/SD17-10

SW/SD17-9

SW/SD17-8

SW/SD17-1

SW/SD17-4

SW/SD17-7

SW/SD17-3

MW17-4/SB17-4

SW/SD17-5

SW/SD17-6

SW/SD17-2

728

730

Unnamed Road

Abandon Furnace (s

0 100 200

SCALE IN FEET

N

## LEGEND

- MINOR WATERWAY
- MAJOR WATERWAY
- FENCE
- REMEDIATION LIMIT WHICH WILL BE DEFINED THRU PRE-DESIGN SAMPLING
- BRUSH LINE
- LANDFILL EXTENTS
- RAILROAD
- 760 GROUND SURFACE ELEVATION CONTOUR
- REMEDIATION LIMIT
- SURVEY MONUMENT
- ROAD SIGN
- DECIDOUS TREE
- FIRE HYDRANT
- MANHOLE
- GUIDE POST
- POLE
- UTILITY BOX
- CORDINATE GRID (250' GRID)
- OVERHEAD UTILITY POLE
- MAILBOX/RR SIGNAL
- SB16-4 SOIL BORING LOCATION
- MW16-7 MONITORING WELL LOCATION
- SS16-5 SURFACE SOIL SAMPLE LOCATION
- SW/SD16-6 SEDIMENT SAMPLE LOCATION
- CASE 1 SURFACE SOILS WITH LEAD CONCENTRATION > 1250 mg/kg OR EXCEEDING OTHER CLEANUP GOALS (SEE NOTE 2)
- CASE 1 DITCH SOILS WITH LEAD CONCENTRATION > 1250 mg/kgOR EXCEEDING OTHER CLEANUP GOALS (SEE NOTE 2)

NOTE:
1. LIMIT OF THE PROPOSED REMEDIATION AREA BASED ON THE DATA PRESENTED IN THE REMEDIAL INVESTIGATION REPORT. (PARSONS ES, MARCH 1999)
2. LIMIT OF THE PROPOSED REMEDIATION AREA INCLUDES SOIL EXCEEDING METAL (ANTIMONY, ARSENIC, CADMIUM, COPPER, LEAD, MERCURY, THALLIUM, ZINC) AND PAH CLEANUP GOALS FOR THE INDUSTRIAL USE SCENERIO.

PARSONS

CLIENT/PROJECT TITLE

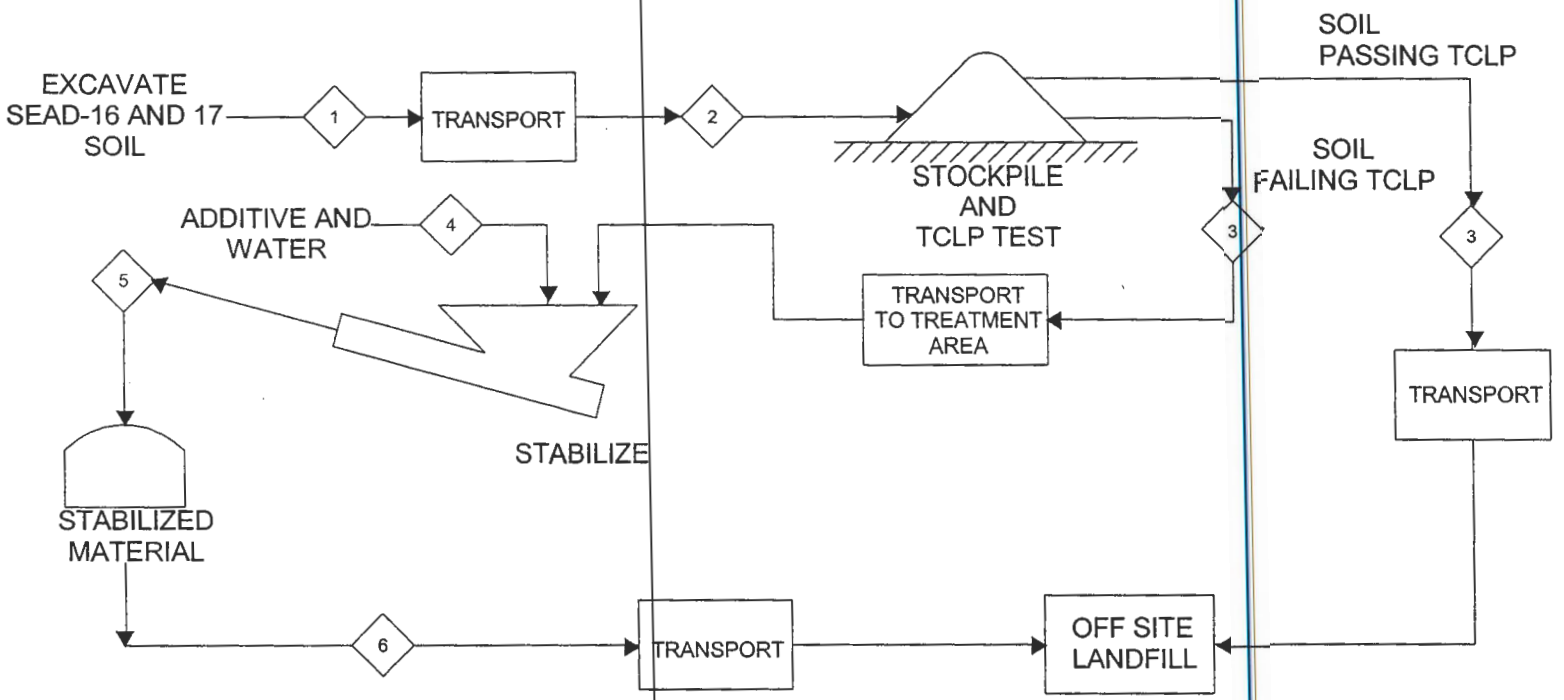
SENECA ARMY DEPOT ACTIVITY
PROPOSED PLAN
SEAD-16 AND SEAD-17

| DEPT. | Dwg. No. |
|---|---|
| ENVIRONMENTAL ENGINEERING | 729896-01002 |

FIGURE 3
SEAD-17 REMEDIATION AREA
(SOIL EXCEEDING CLEANUP GOALS)

| SCALE | DATE | REV |
|---|---|---|
| 1" = 100'-0" | MARCH 2003 | A |

R:\SENECA\72985\fig2-5.dwg




| MATERIAL | TYPICAL FLOW RATES STEAM NO. | | | | | |
|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 |
| SOIL/SEDIMENT (CY/HR) | 50 | 50 | 50 | | | 50 |
| STABILIZED PRODUCT (CY/HR) | | | | | 30 | |
| ADDITIVES/WATER (CY/HR) | | | | 30 | | |

PARSONS

SENECA ARMY DEPOT ACTIVITY
PROPOSED REMEDIAL ACTION PLAN
SEAD-16 AND SEAD-17

FIGURE 4

ALTERNATIVE 4
GENERALIZED PROCESS FLOW SCHEMATIC

JOB NUMBER: 729895-01003 | DATE: APRIL 2003

o:\seneca\sead1617\sead1617.apr