01910

85

AEHA

UNITED STATES ARMY ENVIRONMENTAL HYGIENE AGENCY

ABERDEEN PROVING GROUND, MD 21010-5422

INTERIM FINAL REPORT
GROUND-WATER CONTAMINATION SURVEY NO. 38-26-0868-88
EVALUATION OF SOLID WASTE MANAGEMENT UNITS
SENECA ARMY DEPOT
ROMULUS, NEW YORK
27-31 JULY 1987

Distribution limited to U.S. Government agencies only; protection of privileged information evaluating another command; May 88. Requests for this document must be referred to Commander, Seneca Army Depot, Romulus, NY 14541-5000.

DEPARTMENT OF THE ARMY
U. S. ARMY ENVIRONMENTAL HYGIENE AGENCY
ABERDEEN PROVING GROUND, MARYLAND 21010-5422

REPLY TO ATTENTION OF

24 MAY 1988

HSHB-ME-SG

MEMORANDUM FOR: Commander, U.S. Army Materiel Command, ATTN: AMCSG, 5001 Eisenhower Avenue, Alexandria, VA 22333-0001

SUBJECT: Interim Final Report, Ground-water Contamination Survey No. 38-26-0868-88, Evaluation of Solid Waste Management Units, Seneca Army Depot, Romulus, New York, 27-31 July 1987

EXECUTIVE SUMMARY

The purpose and the recommendation of the enclosed report follow:

a. Purpose. To identify, describe, and evaluate all solid waste management units (SWMU's) on Seneca Army Depot and to delineate those units requiring further sampling, investigation, or corrective action.

b. Recommendations. To ensure regulatory compliance:

(1) Investigate the offpost extent of the contamination plume emanating from the area containing the Incinerator Cooling Water Pond (SEAD-3), the Abandoned Ash Landfill (SEAD-6), and the Refuse Burning Pits (SEAD-14); and

(2) Implement a sampling program at 11 of the SWMU's.

FOR THE COMMANDER:

PAUL R. THIES
LTC, MS
Chief, Waste Disposal Engineering Division

Encl

CF:
DA, USAEHSC, ATTN: CEHSC-E/CEHSC-F (w/encl)
HQDA(DASG-PSP) (wo/encl)
Cdr, AMC, ATTN: AMCEN-A (w/encl)
Cdr, DESCOM, ATTN: AMSDS-T (w/encl)
Cdr, SEAD, ATTN: SDSSE-HE (2 cy) (w/encl)
Cdr, MEDDAC, Ft Devens, ATTN: PVNTMED Svc (2 cy) (w/encl)
Cdr, WRAMC, ATTN: PVNTMED Svc (w/encl)
Cdr, USATHAMA, ATTN: AMXTH-IR (w/encl)
Cdr, USAEHA Fld Spt Actv, Ft Meade (w/encl)

Interim Final Rpt, Ground-Water Contamination Surv No. 38-26-0868-88, 27-31 Jul 87

CONTENTS

DEPARTMENT OF THE ARMY
U. S. ARMY ENVIRONMENTAL HYGIENE AGENCY
ABERDEEN PROVING GROUND, MARYLAND 21010-5422

REPLY TO
ATTENTION OF

HSHB-ME-SG

INTERIM FINAL REPORT
GROUND-WATER CONTAMINATION SURVEY NO. 38-26-0868-88
EVALUATION OF SOLID WASTE MANAGEMENT UNITS
SENECA ARMY DEPOT, ROMULUS, NEW YORK
27-31 JULY 1987

1. AUTHORITY. Letter, HQ AMC, AMCEN-A, 13 November 1986, subject: Request for Technical Support, Evaluation of Solid Waste Management Units at U.S. Army Materiel Command (AMC) Installations.

2. PURPOSE. To identify, describe, and evaluate all solid waste management units (SWMU's) on Seneca Army Depot (SEAD) and to delineate those units requiring further sampling, investigation, or corrective action.

3. GENERAL.

a. Personnel Contacted. Appendix A contains a list of personnel contacted during the survey.

b. Location and Mission of SEAD. Seneca Army Depot is located on 10,587 acres in the heart of the Finger Lakes Region in Seneca County, New York, between Cayuga Lake and Seneca Lake. State Route 96A is the western boundary and State Route 96 is the eastern boundary. The nearest cities are Geneva (14 miles to the northwest) and Ithaca (31 miles to the south). The villages of Waterloo and Seneca Falls are approximately 12 miles to the north. The nearest major cities are Rochester (50 miles to the northwest) and Syracuse (53 miles to the northeast). Figure 1 shows the location of the depot. The current mission of SEAD is to receive, store, maintain, issue, ship, demilitarize, and dispose of assigned commodities, including ammunition, explosives, propellants, industrial plant equipment, special weapons, and General Services Administration materials.

c. Background. Seneca Army Depot has applied for a Part B permit to operate a hazardous waste storage facility (SEAD-1), a polychlorinated biphenyl (PCB) storage facility (SEAD-2), and a deactivation furnace (SEAD-17). The most recent revision of the application was sent to the State at the beginning of April 1988. The demolition ground (SEAD-23) is under interim status. Under the Resource Conservation and Recovery Act (RCRA), Hazardous and Solid Waste Amendments of 1984 (reference 1), Part B permits issued after 8 November 1984 shall require identification and corrective action at any SWMU located on the installation which is releasing hazardous constituents or hazardous wastes to the environment. This requirement applies to all SWMU's regardless of when the waste was placed in the SWMU's.

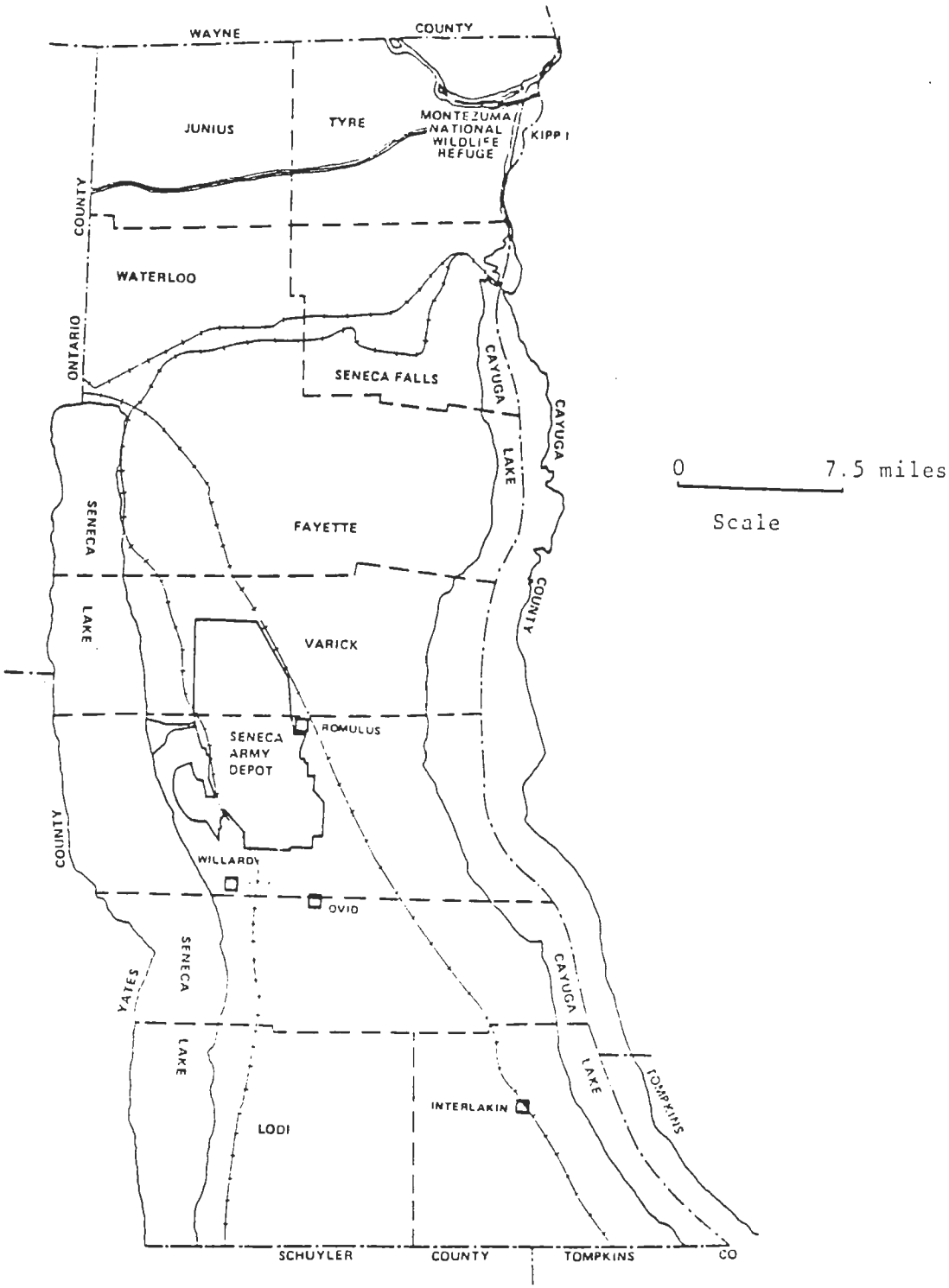


FIGURE 1. Location of Seneca Army Depot (SEAD), NY

4. FINDINGS AND DISCUSSION.

a. Geohydrology.

(1) Geology. Seneca Army Depot is located on the western side of a series of north-south trending rock terraces which separate Seneca Lake and Cayuga Lake. The rock terraces range in elevation from 490 to 1,600 feet above mean sea level (MSL). Elevations on SEAD range from 450 feet above MSL on the western boundary to 760 feet above MSL in the southeast corner. The surface of the depot generally consists of a west and north sloping surface. In the vicinity of SEAD, unconsolidated Pleistocene glacial till deposits overlie Devonian age bedrock consisting primarily of shales. Thickness of the glacial deposits on SEAD ranges from 1 to 10 feet. The bedrock unit underlying SEAD is the Moscow shale, a black, fissile, highly jointed unit with thin interbedded calcareous shale and limestone layers. The Moscow shale dips to the south at 30 to 35 feet per mile beneath the depot.

(2) Ground Water. Ground water on SEAD is generally found in the joints and bedding planes of the shale at depths ranging from 1 to 23 feet below the surface. The ground-water flow direction is to the west toward Seneca Lake.

(3) Surface Water. Figure 2 is a map showing the surface drainage pattern on SEAD. The surface drainage from SEAD flows in two general directions via eight drainageways. Surface runoff in the southern portion of the depot flows through ditches and streams into Indian and Silver Creeks which flow into Seneca Lake just south of the airfield. The administration area and the central part of SEAD are drained by Kendaia Creek which flows into Seneca Lake near the Lake Housing Area. Reeder Creek drains the major portion of the northwest and north-central part of SEAD. The northeast part of the depot, which includes a marshy area called the Duck Ponds, drains into Kendig Creek and eventually flows north into the Cayuga-Seneca Canal and to Cayuga Lake.

b. Development of the SWMU List for SEAD.

(1) SEAD SWMU Submission. Seneca Army Depot sent information on their SWMU's to the U.S. Environmental Protection Agency (EPA) Region II on 20 November 1986 and to the New York State Department of Environmental Conservation (NYDEC) on 2 February 1987. The two submittals were slightly different due to different requirements by the NYDEC for reporting SWMU's. A total of 35 sites and 4 areas with waste oil tanks were identified on the submission.

(2) SWMU's Added and Subtracted by the Project Officer. After reviewing numerous documents, aerial photos, maps, and conducting a visual site inspection at SEAD during 28 to 31 July 1987, a revised SWMU list was developed by the project officer. Fifteen sites were removed from the list because they did not fit the definition of a SWMU, 16 sites were added, and 3 more areas with waste oil tanks were added. The Table is a list of the sites removed from the list.

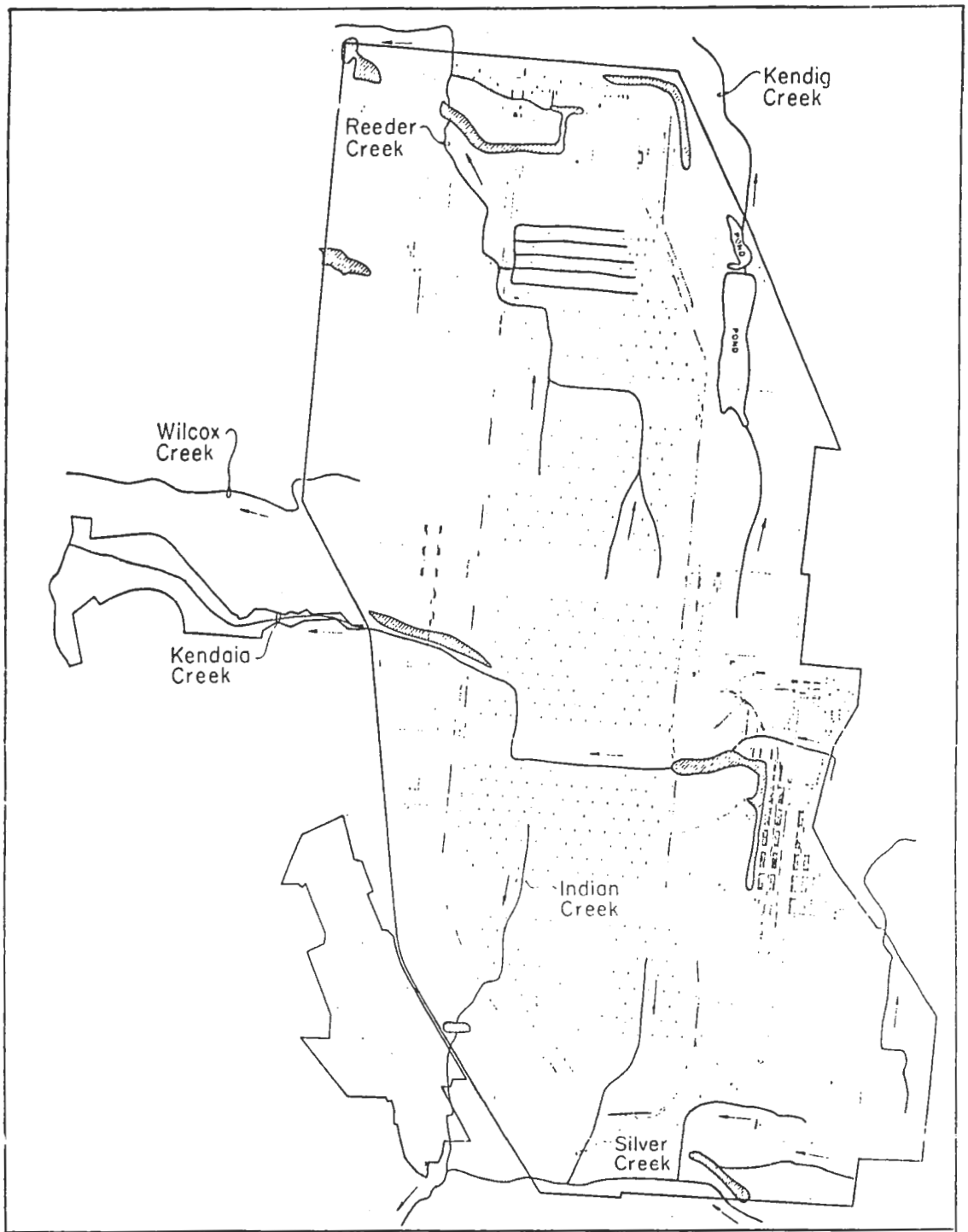


Figure 2. Surface Drainage Map, Seneca Army Depot, Romulus, NY

LEGEND

Drainage Channel with Flow Direction

Areas of Seasonal Flooding

Interim Final Rpt, Ground-Water Contamination Surv No. 38-26-0868-88, 27-31 Jul 87

TABLE. SITES DELETED FROM THE SEAD SWMU SUBMISSION

Unit Name	Why Deleted
Preventive Medicine Lab	Not waste handling
Old Missile Propellant Test Lab (Bldg 606)	Not waste handling
Quality Assurance Test Area	Not waste handling
Demolition Area (late 1960's)	Combined with Demolition Ground (SEAD-23)
Small Arms Range	Not waste handling
Radiation Calibration Source Storage (Bldgs 804, 807, 815)	Material storage, not waste storage
Pitchblende Storage Bunkers	Material storage, not waste storage
Columbite Ore Storage (Bldg 324)	Material storage, not waste storage
Tank Farm	Material storage, not waste storage
Herbicide Usage - perimeter of high security area	Not waste handling
Ammunition Breakdown Area (Bldgs 608, 612)	Not waste handling
Munitions Storage Igloos	Material storage, not waste storage
Asbestos Storage Igloos	Material storage, not waste storage
Tannin Storage Igloos	Material storage, not waste storage
Herbicide and Pesticide Storage	Material storage, not waste storage

(3) Final SWMU List. The final SWMU list consists of 41 units which includes 10 underground waste oil storage tanks. Appendix B includes a location map and the most complete SWMU list possible at this time. Appendix C provides background and recommended sampling information on each of the 41 units identified. Appendix D is a list of references used in gathering and compiling information for the SWMU list.

c. Determinations for Future Sampling or Investigations.

(1) No additional sampling or work is necessary at the following sites:

(a) SEAD-1. Bldg 307 - Hazardous Waste Container Storage Area.

(b) SEAD-2. Bldg 301 - PCB Transformer Storage Area.

(c) SEAD-5. Sewage Sludge Waste Pile.

(d) SEAD-7. Shale Pit.

(e) SEAD-9. Old Scrap Wood Pile.

(f) SEAD-10. Present Scrap Wood Pile.

(g) SEAD-12. Radioactive Waste Burial Sites.

(h) SEAD-13. Inhibited Red Fuming Nitric Acid (IRFNA) Disposal Site.

(i) SEAD-15. Bldg 2207 - Abandoned Solid Waste Incinerator.

(j) SEAD-20. STP No. 4

(k) SEAD-21. STP No. 715

(l) SEAD-22. STP No. 314

(m) SEAD-27. Bldg 360 - Steam Cleaning Waste Tank.

(n) SEAD-28 through SEAD-34 (10 waste oil tanks).

(o) SEAD-35 through SEAD-37 (seven waste oil-burning boilers).

(p) SEAD-38 through SEAD-41 (four boiler plant blowdown leach pits).

(2) Investigation of the offpost contamination plume emanating from the area containing the following three SWMU's is necessary.

(a) SEAD-3. Incinerator Cooling Water Pond.

(b) SEAD-6. Abandoned Ash Landfill.

(c) SEAD-14. Refuse Burning Pits.

(3) Sampling of ground water (continuation or additional), soils, or waste is recommended at the following sites:

(a) SEAD-4. Munitions Washout Facility Leach Field.

(b) SEAD-8. Noncombustible Fill Area.

(c) SEAD-11. Old Construction Debris Landfill.

(d) SEAD-16. Bldg S-311 - Abandoned Deactivation Furnace.

(e) SEAD-17. Bldg 367 - Present Deactivation Furnace.

(f) SEAD-18. Bldg 709 - Classified Document Incinerator.

(g) SEAD-19. Bldg 801 - Classified Document Incinerator.

(h) SEAD-23. Demolition Ground.

(i) SEAD-24. Abandoned Powder Burning Pit.

(j) SEAD-25. Fire Training and Demonstration Pad.

(k) SEAD-26. Fire Training Pit.

5. CONCLUSIONS.

a. The final SWMU list consists of 41 units which includes 10 underground waste oil storage tanks.

b. Twenty-seven of the forty-one SWMU's do not require additional sampling at this time.

c. An area containing three of the forty-one SWMU's needs an offpost contamination migration study.

d. Eleven of the forty-one SWMU's need additional or continued ground-water sampling, or soils sampling, or waste sampling.

6. RECOMMENDATIONS. The following recommendations are made to ensure regulatory compliance.

a. Investigate the offpost extent of the contamination plume emanating from the area containing the Incinerator Cooling Water Pond (SEAD-3), the Abandoned Ash Landfill (SEAD-6), and the Refuse Burning Pits (SEAD-14) [40 CFR 264.101(c) and AR 200-1, paragraph 3-12].

b. Implement a sampling program at eleven of the SWMU's [40 CFR 264.101(a)].

7. TECHNICAL ASSISTANCE. Requests for any additional environmental services should be directed through appropriate command channels of the requesting activity to the Commander, U.S. Army Environmental Hygiene Agency, ATTN: HSHB-ME, Aberdeen Proving Ground, MD 21010-5422, with an information copy furnished the Commander, U.S. Army Health Services Command, ATTN: HSCL-P, Fort Sam Houston, TX 78234-6000. Technical advice and/or assistance may be referred to Ms. Kim M. Fleischmann or Mr. John W. Bauer, Waste Disposal Engineering Division, AUTOVON 584-2024 or commercial (301) 671-2024.

8. REFERENCES. Appendix D contains a list of references.

Kim M. Fleischmann
KIM M. FLEISCHMANN
Environmental Scientist
Waste Disposal Engineering Division

APPROVED:

John W. Bauer
JOHN W. BAUER P.G.
Program Manager
Ground Water and Solid Waste

APPENDIX A

PERSONNEL CONTACTED

1. Mr. Gary W. Kittell, Director, Directorate of Engineering and Housing (DEH).

2. Mr. Stephen M. Absolom, Chief, Engineering/Environmental Management Division (EEMD), DEH.

3. Mr. Randall W. Battaglia, Environmental Engineer, EEMD, DEH.

4. Mr. Thomas Enroth, Environmental Engineer, EEMD, DEH.

5. Mr. Thomas C. Battaglia, Safety and Occupational Health Manager, Safety Office, Directorate of Logistics.

6. Mr. Harry George, Chief, Ammunition Mission Division, Directorate of Ammunition.

APPENDIX B

LIST OF SWMU's AND LOCATION MAP

Interim Final Rpt, Ground-Water Contamination Surv No. 38-26-0868-88, 27-31 Jul 87

TABLE. SOLID WASTE MANAGEMENT UNITS, SENECA ARMY DEPOT, ROMULUS, NEW YORK.

UNIT NUMBER	UNIT NAME
SEAD-1	Bldg 307 - Hazardous Waste Container Storage
SEAD-2	Bldg 301 - PCB Transformer Storage
SEAD-3	Incinerator Cooling Water Pond
SEAD-4	Munitions Washout Facility Leach Field
SEAD-5	Sewage Sludge Waste Pile
SEAD-6	Abandoned Ash Landfill
SEAD-7	Shale Pit
SEAD-8	Noncombustible Fill Area
SEAD-9	Old Scrap Wood Site
SEAD-10	Present Scrap Wood Site
SEAD-11	Old Construction Debris Landfill
SEAD-12	Radioactive Waste Burial Sites (3)
SEAD-13	IRFNA Disposal Site
SEAD-14	Refuse Burning Pits (2)
SEAD-15	Bldg 2207 - Abandoned Solid Waste Incinerator
SEAD-16	Bldg S-311 - Abandoned Deactivation Furnace
SEAD-17	Bldg 367 - Present Deactivation Furnace
SEAD-18	Bldg 709 - Classified Document Incinerator
SEAD-19	Bldg 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-23	Demolition Ground
SEAD-24	Abandoned Powder Burning Pit
SEAD-25	Fire Training and Demonstration Pad
SEAD-26	Fire Training Pit
SEAD-27	Bldg 360 - Steam Cleaning Waste Tank
SEAD-28	Bldg 360 - Underground Waste Oil Tanks (2)
SEAD-29	Bldg 732 - Underground Waste Oil Tank
SEAD-30	Bldg 118 - Underground Waste Oil Tank
SEAD-31	Bldg 117 - Underground Waste Oil Tank
SEAD-32	Bldg 718 - Underground Waste Oil Tanks (2)
SEAD-33	Bldg 121 - Underground Waste Oil Tank
SEAD-34	Bldg 319 - Underground Waste Oil Tanks (2)
SEAD-35	Bldg 718 - Waste Oil-Burning Boilers (3)
SEAD-36	Bldg 121 - Waste Oil-Burning Boilers (2)
SEAD-37	Bldg 319 - Waste Oil-Burning Boilers (2)
SEAD-38	Bldg 2079 - Boiler Blowdown Leach Pit
SEAD-39	Bldg 121 - Boiler Blowdown Leach Pit
SEAD-40	Bldg 319 - Boiler Blowdown Leach Pit
SEAD-41	Bldg 718 - Boiler Blowdown Leach Pit

APPENDIX C

SOLID WASTE MANAGEMENT UNITS AT SEAD

1. MAP LOCATION/SITE NUMBER. SEAD-1.

a. Unit Name. Bldg 307 - Hazardous Waste Container Storage Area.

b. Unit Characteristics.

(1) Unit Type. Hazardous waste storage building.

(2) Design Features. The 40 feet by 50 feet building consists of a 6-inch thick, one piece concrete slab floor with a 6-inch curb. The slab is reinforced with steel bars spaced 12 inches apart. The roof is constructed of corrugated zinc-coated steel with single sheets extending from the ridge to the edge. Corrugated steel sheets cover the sides of the building extending from 1 foot below the 2-inch by 12-inch headers to 6 inches below the top of the curb. A passive ventilation system is provided via the opening at the top of the walls. Figure C-1 shows a plan view of the building.

(3) Approximate Dates of Usage. 1981 to present.

(4) Operating Practices. Drums of hazardous waste generated in the shops are transported to the building and stored until disposal contracts are procured. Regular inspections are made by the environmental coordinator and the fire department.

(5) Present Condition and Status. The building is in very good structural condition and is managed appropriately. The building is included in the RCRA Part B Permit Application.

c. Specific Wastes Disposed. Wastes are stored, not disposed in the building.

d. Migration Pathways. If the wastes were spilled on the ground during transfer of the drums into the building, the soil and ground water would be impacted.

e. Evidence of Release. None.

f. Exposure Potential. Very low.

g. Recommendations for Sampling. None.

h. References. 20, 22.

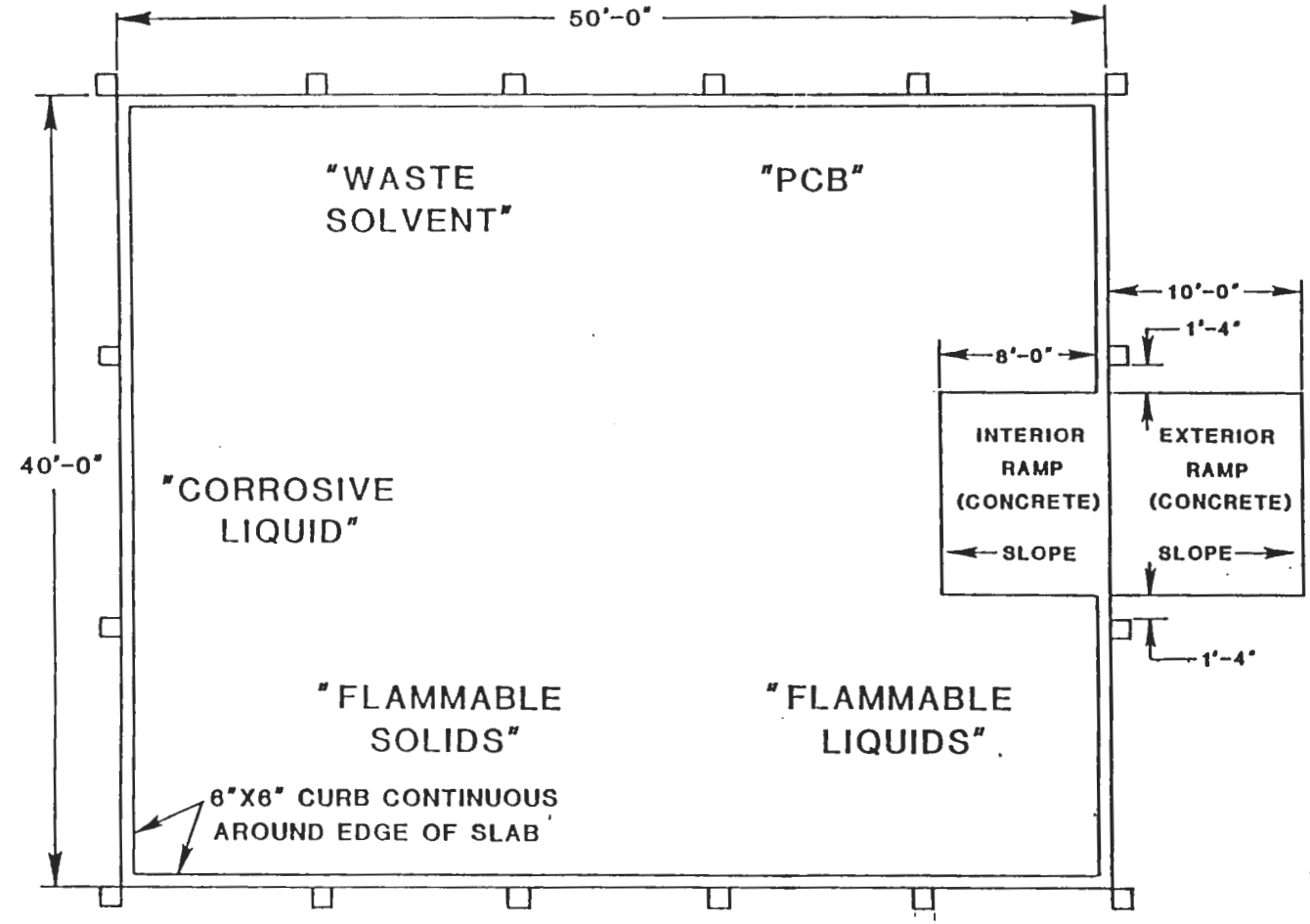


FIGURE C-1.

PLAN VIEW OF HAZARDOUS
WASTE CONTAINER STORAGE AREA

SENECA ARMY DEPOT
ROMULUS, NY

2. MAP LOCATION/SITE NUMBER. SEAD-2.

a. Unit Name. Bldg 301 - PCB Transformer Storage Area.

b. Unit Characteristics.

(1) Unit Type. Hazardous waste storage building.

(2) Design Features. The floor of the building consists of a 6-inch thick concrete slab with a 12-inch high discontinuous curb around the perimeter. Two overhead rollup doors create the breaks in the curbing. The flat roof is covered with tar paper. The 12-foot high walls are made of 12-inch thick scored tile. As shown in Figure C-2, the building has four windows.

(3) Approximate Dates of Usage. 1980 to present.

(4) Operating Practices. Decommissioned transformer units and other suspected PCB-contaminated electrical equipment are delivered to the building by linemen. Sampling is conducted by the environmental coordinator to determine the concentrations of PCBs in the units and contaminated electrical equipment, then the items are disposed by the Defense Reutilization and Marketing Office (DRMO). Inspections are conducted regularly by the environmental coordinator and the fire department.

(5) Present Condition and Status. The building will be upgraded in the near future to meet conforming storage requirements and is included in the RCRA Part B Permit Application.

c. Specific Wastes Disposed. Wastes are stored, not disposed in the building.

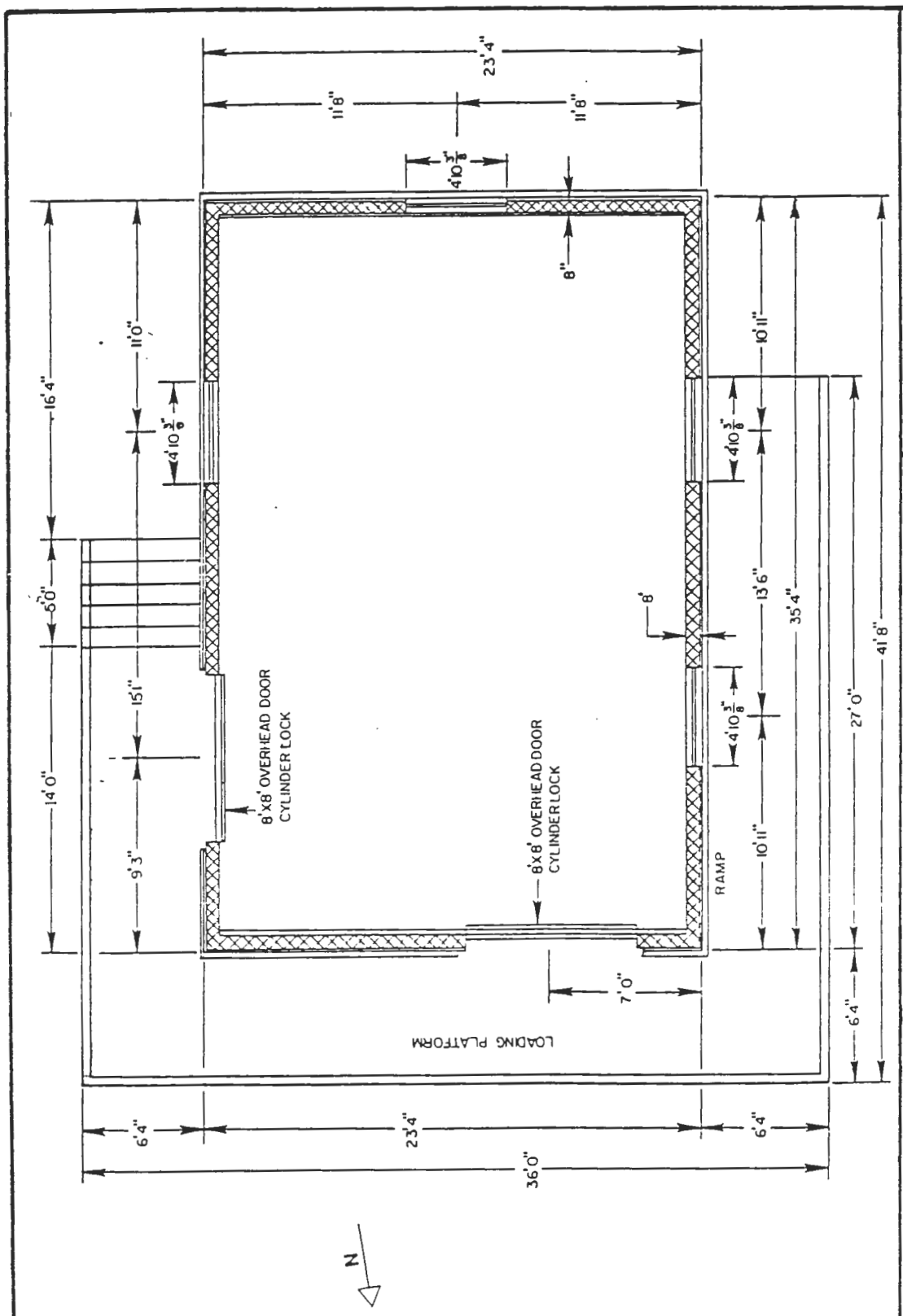
d. Migration Pathways. If the wastes were spilled on the ground during transfer, the soil and ground water would be impacted.

e. Evidence of Release. None.

f. Exposure Potential. Very low.

g. Recommendations for Sampling. None.

h. References. 20, 22.


SENECA ARMY DEPOT
ROMULUS, NY
PLAN VIEW OF TRANSFORMER STORAGE AREA
FIGURE C-2.
23'4"
11'8"
11'8"
4'10 3/8"
8"
16'4"
11'0"
5'0"
14'0"
15'1"
9'3"
8'X8' OVERHEAD DOOR
CYLINDER LOCK
8'X8' OVERHEAD DOOR
CYLINDER LOCK
RAMP
LOADING PLATFORM
10'11"
13'6"
35'4"
27'0"
41'8"
8'
7'0"
6'4"
6'4"
23'4"
36'0"
N

3. MAP LOCATION/SITE NUMBER. SEAD-3.

a. Unit Name. Incinerator Cooling Water Pond.

b. Unit Characteristics.

(1) Unit Type. Abandoned dry lagoon.

(2) Design Features. Unlined depression approximately 50 feet in diameter and 6- to 10-feet deep.

(3) Approximate Dates of Usage. 1974 to 1979.

(4) Operating Practices. The pond was used to hold the cooling water and fly ash generated from the scrubber on the incinerator. The fly ash was removed every 18 months and put into the ash landfill.

(5) Present Condition and Status. Abandoned, dry.

c. Waste Characteristics.

(1) Specific Wastes Disposed. Cooling water and fly ash from the incinerator.

(2) Physical and Chemical Characteristics. Heavy metals and sulfate are the primary constituents of concern.

(3) Migration and Dispersal Characteristics. Dissolved metals and sulfate may migrate to the ground water.

(4) Toxicological Characteristics. Drinking water standards are available for many of the heavy metals, and an aesthetic drinking water criterion is available for sulfate.

d. Migration Pathways. Soil, ground water.

e. Evidence of Release. Elevated sulfate concentrations in ground-water monitoring well samples. The abandoned pond is in the same area as the old refuse burning pits and the ash landfill, both of which may be the source of the ground-water contamination.

f. Exposure Potential. Ground-water contamination has been confirmed in the area, but because the source is probably not the abandoned pond, the exposure potential is rated as low.

g. Recommendation. Same as Ash Landfill (SEAD-6).

h. References. 9, 23.

4. MAP LOCATION/SITE NUMBER. SEAD-4.

a. Unit Name. Munitions Washout Facility Leach Field.

b. Unit Characteristics.

(1) Unit Type. Leach field.

(2) Design Features. Unknown.

(3) Approximate Dates of Usage. 1948 to 1963.

(4) Operating Practices. Obsolete and defective munitions were dismantled and washed out. The wastewater was presumedly treated in some manner to concentrate and solidify most of the explosive compounds which were later burned at the demolition grounds. The remaining water discharged into an area near Bldg 2084 and either leached into the ground or flowed into a nearby ditch.

(5) Present Condition and Status. The foundation of the dismantled washout plant is still visible, but no evidence of the leach field can be found.

c. Waste Characteristics.

(1) Specific Wastes Disposed. Wastewater potentially contaminated with small amounts of explosives.

(2) Physical and Chemical Characteristics. Compounds which presumably could be found include 2,4,6-TNT, 2,4-DNT, 2,6-DNT, RDX, HMX, trinitrobenzene and tetryl. Heavy metals are also potential contaminants of the waste.

(3) Migration and Dispersal Characteristics. The wastewater containing the explosives and heavy metals would leach into the ground relatively easily.

(4) Toxicological Characteristics. Army-suggested drinking water limits are available for 2,4,6-TNT and for RDX. The explosive compound 2,4-DNT is a suspected carcinogen. Drinking water limits are available for many of the heavy metals.

d. Migration Pathways. Soil, ground water.

e. Evidence of Release. None observed.

f. Exposure Potential. Moderate.

g. Recommendations for Sampling. Soil samples and ground-water monitoring wells.

h. References. 9, 10.

5. MAP LOCATION/SITE NUMBER. SEAD-5.

a. Unit Name. Sewage Sludge Waste Pile.

b. Unit Characteristics.

(1) Unit Type. Waste Pile.

(2) General Dimensions. Approximately 40 feet long, 20 feet wide, and 10 feet high.

(3) Approximate Dates of Usage. 1980 to present.

(4) Operating Practices. Sludge is removed periodically from the sludge drying beds at the two sewage treatment plants and is stored in the waste pile until a permit is acquired to apply the sludge to the land for growing grassy areas for pheasant nesting.

(5) Present Condition and Status. Part of the waste pile is covered with pieces of plastic, but most of the pile is covered with a heavy growth of vegetation (grass, tomato plants, vines).

c. Waste Characteristics.

(1) Specific Wastes Disposed. Sewage sludge from the sludge drying beds at STP No. 4 and STP No. 715.

(2) Physical and Chemical Characteristics. The sludge was tested by the State and by a lab under contract to SEAD in 1985, and was high in copper.

(3) Migration and Dispersal Characteristics. Precipitation flowing through the waste pile could leach heavy metals (copper) and nitrates from the sludge.

(4) Toxicological Characteristics. Copper has not been determined to be toxic, but an aesthetic drinking water criterion is available. A drinking water standard has been established for nitrates.

d. Migration Pathways. Soil, ground water.

e. Evidence of Release. None observed.

f. Exposure Potential. Very low.

g. Recommendations for Sampling. None.

6. MAP LOCATION/SITE NUMBER. SEAD-6.

a. Unit Name. Abandoned Ash Landfill.

b. Unit Characteristics.

(1) Unit Type. Area landfill.

(2) General Dimensions. 600 feet by 300 feet (approximately 4 acres).

(3) Approximate Dates of Usage. 1941 until the late 1950's or early 1960's; again after the incinerator was built, 1974 to 1979.

(4) Operating Practices. Ash from the refuse burning pits was buried in the landfill from 1941 until the late 1950's or early 1960's. The Varick dump was used for a period of time until the incinerator was constructed. When the incinerator was built, ash was again disposed in the same area previously used. The refuse was dumped in piles and occasionally spread and compacted. No daily or final cover was applied. It was often subject to ponding from seasonally high surface and ground water.

(5) Present Condition and Status. Abandoned. The area is covered with vegetation (grasses, vines, low shrubs).

c. Waste Characteristics.

(1) Specific Wastes Disposed. Ash from the refuse burning pits and the incinerator.

(2) Physical and Chemical Characteristics. Because almost any types of wastes were burned in the refuse burning pits and in the incinerator, the ash could have contained any variety of compounds and constituents. Heavy metals would probably be of greatest concern. Volatile organic compounds would probably have been destroyed during the combustion process.

(3) Migration and Dispersal Characteristics. Heavy metals are soluble in water but are also adsorbed by the clays which are predominant in the landfill area.

(4) Toxicological Characteristics. Drinking water standards are available for the heavy metals.

d. Migration Pathways. Ground water.

e. Evidence of Release. Table C-1 lists the ground-water level and quality data available for the original five monitoring wells around the landfill. Ground-water samples from wells PT-12 and PT-14 collected in March 1987.

were contaminated with trichloroethylene and 1,2-dichloroethylene. Subsequent samples collected from additional wells installed during this Agency's October 1987 study contained high concentrations of trichloroethylene and trans-1,2-dichloroethylene, and lesser amounts of chloroform, 1,2-dichloroethane, and vinyl chloride. The contamination is probably not due to the ash landfill contents but is more likely due to the refuse burning pits.

f. Exposure Potential. High. Three offpost private wells are located less than a quarter mile downgradient from the contaminated monitoring wells. Samples collected from those wells in August 1987 did not contain volatile organic compounds above a detection limit of 5 micrograms per liter (µg/L).

g. Recommendation. Investigate the extent of the contamination plume offpost.

h. References. 6, 8, 14, 22, 23.

TABLE C-1

SAMPLING SITES RESULTS

TABLE C-1. Sampling Sites Results

RUN DATE: 19 AUG 87

INSTALLATION: SENECA AD, NY SITE: LANDFILL

PARAMETER	SAMPLING DATE	DETECTION LIMIT	UNITS	SAMPLING SITES RESULTS B PT-10	PT-11	PT-12	PT-13	PT-14	PT-15
WATER									
LEVELS (A)	14 DEC 81		FT	675.3	654.1	646.3	634.3	633.7	628.3
LEVELS (A)	29 MAR 82		FT	676.4	653.8	646.3	634.2	635.0	632.9
LEVELS (A)	21 JUN 82		FT	673.3	653.0	645.8	633.5	633.0	631.0
LEVELS (A)	20 SEP 82		FT	670.4	650.6	643.3	630.8	631.2	627.8
LEVELS (A)	15 FEB 83		FT	673.3	653.3	646.8	633.8	634.8	634.1
LEVELS (A)	08 AUG 83		FT	670.5		642.5	630.9	630.3	
LEVELS (A)	14 FEB 84		FT	675.9	651.0	647.9	634.1	634.9	632.8
LEVELS (A)	17 SEP 84		FT	674.4	654.4	648.7		634.3	629.9
LEVELS (A)	19 MAR 85		FT	676.6	652.1	647.1		635.4	633.7
LEVELS (A)	12 SEP 85		FT	670.0	652.3	642.0		630.1	630.6
LEVELS (A)	17 MAR 86		FT	675.5	653.9	644.9			634.2
LEVELS (A)	16 SEP 86		FT	675.4	650.9	646.0			631.2
LEVELS (A)	16 MAR 87		FT	675.1	653.8	647.5		635.5	633.0

RUN DATE: 19 AUG 87

INSTALLATION: SENECA AD, NY

SITE: LANDFILL

PARAMETER	SAMPLING DATE	DETECTION LIMIT	UNITS	SAMPLING SITES RESULTS B PT-10	PT-11	PT-12	PT-13	PT-14	PT-15
ARSENIC	16 SEP 86	.010	MGL	ND	ND	ND			ND
ARSENIC	17 MAR 87	.005	MGL	ND	ND	ND		ND	ND
BARIUM	16 SEP 86	.30	MGL	ND	ND	ND			ND
BARIUM	17 MAR 87	.05	MGL	.22	.08	.03		.06	.08
CADMIUM	16 SEP 86	1.000	UGL	ND	ND	1.110+			ND
CADMIUM	17 MAR 87	.001	GL	ND	ND	ND		ND	ND
CHROMIUM	16 SEP 86	.010	MGL	ND	ND	ND			ND
CHROMIUM	17 MAR 87	.020	MGL	ND	ND	ND		ND	ND
LEAD	16 SEP 86	.005	MGL	ND	ND	.013			ND
LEAD	17 MAR 87	.005	MGL	.055&	.027&	.031&		.023	.038&
MERCURY	16 SEP 86	.2	UGL	ND	ND	.3			ND
SELENIUM	16 SEP 86	.005	MGL	ND	ND	ND			ND
SELENIUM	17 MAR 87	.001	MGL	.001	ND	ND		ND	ND
SILVER	16 SEP 86	.025	MGL	ND	ND	ND			ND
SILVER	17 MAR 87	.020	MGL	ND	ND	ND		ND	ND
CHLORIDE	15 DEC 81	1.0	MGL	80.8	91.3	93.0	7.0	73.0	8.8
CHLORIDE	30 MAR 82	1.0	MGL	77.0	68.3	61.0	11.0	93.0	11.0
CHLORIDE	22 JUN 82	1.0	MGL	76.0	61.0	360.0&	5.0	86.0	5.0
CHLORIDE	20 SEP 82	1.0	MGL	78.0	68.0	1110.0&	7.0	95.0	15.0
CHLORIDE	15 FEB 83	1.0	MGL	70.0	69.0	30.0	8.0	79.0	15.0
CHLORIDE	09 AUG 83	1.0	MGL	72.0		1510.0&	9.0	66.0	
CHLORIDE	14 FEB 84	1.0	MGL	74.0	55.0	41.0	5.0	61.0	7.7
CHLORIDE	18 SEP 84	1.0	MGL	51.0	57.0	24.0		42.0	6.0
CHLORIDE	20 MAR 85	1.0	MGL	69.0	57.0	16.0		23.0	7.0
CHLORIDE	13 SEP 85	1.0	MGL	69.0	52.0	692.0&		46.0	13.0
CHLORIDE	18 MAR 86	1.0	MGL	34.0	57.0	14.0			10.0
CHLORIDE	16 SEP 86	1.0	MGL	62.0	58.0	305.0&			9.0
CHLORIDE	17 MAR 87	1.0	MGL	70.0	60.0	43.0		16.0	3.0
IRON	15 DEC 81	.03	MGL	ND	ND	ND	ND	ND	.15
IRON	30 MAR 82	.02	MGL	.05	.05	.06	.06	.03	.20
IRON	22 JUN 82	.03	MGL	ND	.11	.06	.03	.06	.08
IRON	20 SEP 82	.03	MGL	ND	ND	ND	ND	ND	ND
IRON	15 FEB 83	.03	MGL	ND	.07	ND	.05	.09	.16
IRON	09 AUG 83	.02	MGL	.24		.05	.10	.07	
IRON	14 FEB 84	.10	MGL	ND	ND	ND	ND	.24	.11
IRON	18 SEP 84	.10	MGL	.20	.11	ND		.35#	.24
IRON	20 MAR 85	.10	MGL	ND	ND	ND		ND	ND
IRON	13 SEP 85	.10	MGL	ND	ND	ND		ND	ND
IRON	18 MAR 86	.10	MGL	ND	ND	ND			ND
IRON	16 SEP 86	.10	MGL	ND	ND	ND			ND
IRON	17 MAR 87	.10	MGL	ND	ND	ND		ND	ND

RUN DATE: 19 AUG 87

INSTALLATION: SENECA AD, NY

SITE: LANDFILL

PARAMETER	SAMPLING DATE	DETECTION LIMIT	UNITS	SAMPLING SITES RESULTS B PT-10	PT-11	PT-12	PT-13	PT-14	PT-15
SODIUM	16 SEP 86	1.	MGL	49.	56.	56.			31.
SODIUM	17 MAR 87	1.	MGL	49.	57.	43.		18.	32.
SULFATE	15 DEC 81	2.0	MGL	17.8	152.0	622.0&	41.6	100.0	42.7
SULFATE	30 MAR 82	2.0	MGL	29.0	131.1	360.0&	46.0	100.0	40.0
SULFATE	22 JUN 82	2.0	MGL	16.0	120.0	490.0&	35.0	100.0	31.0
SULFATE	20 SEP 82	2.0	MGL	29.0	110.0	480.0&	40.0	110.0	55.0
SULFATE	15 FEB 83	2.0	MGL	22.0	140.0	200.0	41.0	110.0	46.0
SULFATE	09 AUG 83	2.0	MGL	10.0		481.0&	70.0	21.0	
SULFATE	14 FEB 84	2.0	MGL	20.0	57.0	302.0&	39.0	105.0	40.0
SULFATE	18 SEP 84	2.0	MGL	16.0	37.0	36.0		34.0	29.0
SULFATE	20 MAR 85	2.0	MGL	19.0	163.0	275.0&		64.0	37.0
SULFATE	13 SEP 85	2.0	MGL	13.0	114.0	487.0&		97.0	44.0
SULFATE	18 MAR 86	2.0	MGL	28.0	152.0	211.0			58.0
SULFATE	16 SEP 86	2.0	MGL	28.0	150.0	404.0&			42.0
SULFATE	17 MAR 87	2.0	MGL	18.0	180.0	50.0		44.0	18.0
COND(FIELD)	20 MAR 85	1.	UMC	580.	700.	800.		490.	350.
COND(FIELD)	18 MAR 86	1.	UMC	620.	690.	610.			390.
COND(FIELD)	17 MAR 87	1.	UMC	545.	690.	1030.		445.	330.
PH(FIELD)	15 DEC 81		PH	7.3	7.3	7.1	7.2	7.3	7.6
PH(FIELD)	30 MAR 82		PH	7.4	7.8	7.3	7.3	7.4	7.9
PH(FIELD)	22 JUN 82		PH	7.7	7.6	7.1	7.3	7.4	7.7
PH(FIELD)	20 SEP 82		PH	7.5	7.6	7.2	7.9	7.4	7.8
PH(FIELD)	15 FEB 83		PH	7.6	7.6	7.5	7.5	7.5	7.8
PH(FIELD)	09 AUG 83		PH	7.3		6.3#	6.8	6.6	
PH(FIELD)	09 AUG 83		PH	7.3		6.3#	6.8	6.6	
PH(FIELD)	09 AUG 83		PH	7.3		6.3#	6.8	6.6	
PH(FIELD)	09 AUG 83		PH	7.3		6.3#	6.8	6.6	
PH(FIELD)	14 FEB 84		PH	7.7	7.5	7.3	7.1	7.5	7.6
PH(FIELD)	18 SEP 84		PH	7.6	7.7	7.4		7.2	7.7
PH(FIELD)	18 SEP 84		PH	7.6	7.6	7.4		7.3	7.7
PH(FIELD)	18 SEP 84		PH	7.6	7.6	7.4		7.2	7.6
PH(FIELD)	18 SEP 84		PH	7.5	7.6	7.3		7.2	7.7
PH(FIELD)	20 MAR 85		PH	7.2	6.9	6.9		7.0	7.1
PH(FIELD)	13 SEP 85		PH	7.5	7.4	6.9		7.1	7.4
PH(FIELD)	18 MAR 86		PH	6.9	7.0	7.0			7.3
PH(FIELD)	16 SEP 86		PH	7.0	7.0	6.7			7.4
PH(FIELD)	17 MAR 87		PH	7.4	7.2	6.7		6.8	7.3
PH(LAB)	15 DEC 81		PH	7.5	7.5	7.2	7.3	7.3	7.6
PH(LAB)	30 MAR 82		PH	7.5	7.5	7.2	7.2	7.3	7.7
PH(LAB)	22 JUN 82		PH	7.3	7.4	7.1	7.0	7.0	7.0
PH(LAB)	20 SEP 82		PH	7.2	6.9	6.7	6.9	6.8	7.1

RUN DATE: 19 AUG 87

INSTALLATION: SENECA AD, NY

SITE: LANDFILL

PARAMETER	SAMPLING DATE	DETECTION LIMIT	UNITS	SAMPLING SITES RESULTS B PT-10	PT-11	PT-12	PT-13	PT-14	PT-15
PH(LAB)	15 FEB 83		PH	7.3	7.0	6.7	6.8	6.8	7.1
PH(LAB)	09 AUG 83		PH	7.1		6.7	7.5	7.2	
PH(LAB)	14 FEB 84		PH	7.8	8.0	7.7	7.8	7.8	8.2
PH(LAB)	18 SEP 84		PH	7.7	7.7	7.3		7.6	7.8
PH(LAB)	13 SEP 85		PH	7.9	7.8	7.4		7.6	8.0
PH(LAB)	18 MAR 86		PH	7.8	7.7	7.8			7.8
PH(LAB)	17 MAR 87		PH	6.9	6.9	6.7		6.9	7.2
SPEC COND	15 DEC 81	1.	UMC	890.	1050.	1710.	610.	900.	510.
SPEC COND	15 DEC 81	1.	UMC	880.	1050.	1710.	610.	900.	510.
SPEC COND	15 DEC 81	1.	UMC	890.	1050.	1710.	610.	900.	510.
SPEC COND	15 DEC 81	1.	UMC	890.	1050.	1710.	600.	900.	510.
SPEC COND	30 MAR 82	1.	UMC	876.	950.	1340.	620.	970.	470.
SPEC COND	30 MAR 82	1.	UMC	879.	950.	1339.	625.	965.	470.
SPEC COND	30 MAR 82	1.	UMC	878.	949.	1340.	622.	968.	470.
SPEC COND	30 MAR 82	1.	UMC	874.	950.	1340.	624.	968.	470.
SPEC COND	22 JUN 82	1.	UMC	800.	850.	2250.	540.	850.	460.
SPEC COND	22 JUN 82	1.	UMC	800.	845.	2250.	540.	850.	455.
SPEC COND	22 JUN 82	1.	UMC	800.	845.	2250.	540.	850.	460.
SPEC COND	22 JUN 82	1.	UMC	800.	850.	2250.	540.	850.	460.
SPEC COND	20 SEP 82	1.	UMC	880.	940.	3900.	560.	1000.	570.
SPEC COND	20 SEP 82	1.	UMC	880.	940.	3850.	560.	1000.	570.
SPEC COND	20 SEP 82	1.	UMC	880.	940.	3850.	560.	1000.	570.
SPEC COND	20 SEP 82	1.	UMC	880.	940.	3900.	560.	1000.	570.
SPEC COND	15 FEB 83	1.	UMC	845.	925.	1280.	620.	960.	510.
SPEC COND	15 FEB 83	1.	UMC	845.	920.	1270.	620.	960.	505.
SPEC COND	15 FEB 83	1.	UMC	840.	920.	1270.	620.	960.	505.
SPEC COND	15 FEB 83	1.	UMC	845.	920.	1275.	620.	960.	510.
SPEC COND	09 AUG 83	1.	UMC	960.		5800.	670.	990.	
SPEC COND	09 AUG 83	1.	UMC	960.		5800.	670.	990.	
SPEC COND	09 AUG 83	1.	UMC	960.		5800.	670.	990.	
SPEC COND	09 AUG 83	1.	UMC	970.		5700.	670.	990.	
SPEC COND	14 FEB 84	1.	UMC	670.	780.	900.	480.	720.	420.
SPEC COND	14 FEB 84	1.	UMC	680.	780.	900.	470.	720.	420.
SPEC COND	14 FEB 84	1.	UMC	690.	780.	900.	470.	720.	420.
SPEC COND	14 FEB 84	1.	UMC	680.	780.	900.	480.	720.	420.
SPEC COND	18 SEP 84	1.	UMC	730.	850.	890.		740.	740.
SPEC COND	18 SEP 84	1.	UMC	740.	860.	900.		730.	740.
SPEC COND	18 SEP 84	1.	UMC	740.	860.	890.		740.	740.
SPEC COND	18 SEP 84	1.	UMC	740.	860.	900.		740.	740.
SPEC COND	20 MAR 85	1.	UMC	960.	800.	1110.		660.	460.
SPEC COND	20 MAR 85	1.	UMC	950.	800.	1100.		660.	460.

RUN DATE: 19 AUG 87

INSTALLATION: SENECA AD. NY

SITE: LANDFILL

PARAMETER	SAMPLING DATE	DETECTION LIMIT	UNITS	SAMPLING SITES RESULTS B PT-10	PT-11	PT-12	PT-13	PT-14	PT-15
SPEC COND	20 MAR 85	1.	UMC	950.	810.	1120.		660.	450.
SPEC COND	20 MAR 85	1.	UMC	960.	800.	1110.		660.	460.
SPEC COND	13 SEP 85	1.	UMC	820.	840.	3800.		700.	510.
SPEC COND	13 SEP 85	1.	UMC	830.	840.	3800.		690.	520.
SPEC COND	13 SEP 85	1.	UMC	830.	830.	3800.		700.	520.
SPEC COND	13 SEP 85	1.	UMC	830.	840.	3800.		700.	520.
SPEC COND	18 MAR 86	1.	UMC	750.	990.	940.			500.
SPEC COND	18 MAR 86	1.	UMC	750.	1000.	940.			490.
SPEC COND	18 MAR 86	1.	UMC	750.	1000.	940.			500.
SPEC COND	18 MAR 86	1.	UMC	750.	990.	930.			500.
SPEC COND	16 SEP 86	1.	UMC	850.	1020.	2300.			540.
SPEC COND	16 SEP 86	1.	UMC	850.	1010.	2250.			540.
SPEC COND	16 SEP 86	1.	UMC	850.	1010.	2300.			540.
SPEC COND	16 SEP 86	1.	UMC	850.	1020.	2300.			540.
SPEC COND	17 MAR 87	1.	UMC	810.	1090.	1000.		650.	490.
SPEC COND	17 MAR 87	1.	UMC	810.	1090.	1000.		640.	500.
SPEC COND	17 MAR 87	1.	UMC	810.	1100.	1000.		640.	500.
SPEC COND	17 MAR 87	1.	UMC	800.	1100.	1000.		650.	490.
TOC	15 DEC 81	.1	MGL	2.0	3.0	3.0	1.0	3.0	2.0
TOC	15 DEC 81	.1	MGL	1.0	3.0	3.0	1.0	3.0	2.0
TOC	15 DEC 81	.1	MGL	2.0	3.0	3.0	1.0	3.0	2.0
TOC	15 DEC 81	.1	MGL	1.0	3.0	3.0	2.0	3.0	2.0
TOC	30 MAR 82	.1	MGL	2.0	3.0	4.0	2.0	3.0	2.0
TOC	30 MAR 82	.1	MGL	2.0	4.0	4.0	2.0	3.0	2.0
TOC	30 MAR 82	.1	MGL	2.0	4.0	4.0	2.0	3.0	2.0
TOC	30 MAR 82	.1	MGL	2.0	4.0	4.0	3.0	3.0	2.0
TOC	22 JUN 82	.1	MGL	60.0	55.0	67.0	62.0	58.0	42.0
TOC	22 JUN 82	.1	MGL	62.0	54.0	67.0	61.0	58.0	42.0
TOC	22 JUN 82	.1	MGL	61.0	55.0	67.0	60.0	58.0	42.0
TOC	22 JUN 82	.1	MGL	62.0	55.0	67.0	60.0	58.0	42.0
TOC	20 SEP 82	.1	MGL	53.0	45.0	47.0	19.0	40.0	27.0
TOC	20 SEP 82	.1	MGL	54.0	47.0	49.0	19.0	42.0	27.0
TOC	20 SEP 82	.1	MGL	52.0	47.0	48.0	19.0	41.0	27.0
TOC	20 SEP 82	.1	MGL	52.0	45.0	50.0	20.0	42.0	26.0
TOC	15 FEB 83	.1	MGL	14.0	12.0	14.0	11.0	11.0	7.0
TOC	15 FEB 83	.1	MGL	14.0	11.0	13.0	11.0	11.0	6.0
TOC	15 FEB 83	.1	MGL	13.0	12.0	13.0	10.0	11.0	7.0
TOC	15 FEB 83	.1	MGL	13.0	12.0	13.0	10.0	11.0	7.0
TOC	09 AUG 83	.1	MGL	59.0		59.0	34.0	49.0	
TOC	09 AUG 83	.1	MGL	59.0		58.0	35.0	49.0	
TOC	09 AUG 83	.1	MGL	60.0		59.0	36.0	48.0	

RUN DATE: 19 AUG 87

INSTALLATION: SENECA AD, NY

SITE: LANDFILL

PARAMETER	SAMPLING DATE	DETECTION LIMIT	UNITS	SAMPLING SITES RESULTS B PT-10	PT-11	PT-12	PT-13	PT-14	PT-15
TOC	09 AUG 83	.1	MGL	60.0		60.0	35.0	50.0	
TOC	14 FEB 84	.1	MGL	42.0	38.0	32.0	30.0	29.0	23.0
TOC	14 FEB 84	.1	MGL	43.0	37.0	31.0	29.0	29.0	23.0
TOC	14 FEB 84	.1	MGL	43.0	38.0	31.0	29.0	29.0	23.0
TOC	14 FEB 84	.1	MGL	42.0	38.0	31.0	29.0	28.0	22.0
TOC	18 SEP 84	.1	MGL	3.0	4.0	5.0		5.0	2.0
TOC	18 SEP 84	.1	MGL	4.0	4.0	5.0		3.0	2.0
TOC	18 SEP 84	.1	MGL	3.0	5.0	4.0		4.0	2.0
TOC	18 SEP 84	.1	MGL	3.0	3.0	4.0		3.0	2.0
TOC	20 MAR 85	.1	MGL	3.0	6.5	7.2		3.9	5.1
TOC	20 MAR 85	.1	MGL	3.0	6.5	7.2		4.0	5.3
TOC	20 MAR 85	.1	MGL	3.0	6.5	7.2		4.1	5.3
TOC	20 MAR 85	.1	MGL	3.1	6.5	7.2		4.0	5.2
TOC	13 SEP 85	.1	MGL	1.3	2.7	3.5		3.2	1.8
TOC	13 SEP 85	.1	MGL	1.3	2.5	3.4		3.3	1.8
TOC	13 SEP 85	.1	MGL	1.4	2.6	3.5		3.3	1.9
TOC	13 SEP 85	.1	MGL	1.3	2.6	3.4		3.3	1.9
TOC	18 MAR 86	.1	MGL	1.6	2.8	3.2			1.5
TOC	18 MAR 86	.1	MGL	1.6	2.8	3.0			1.5
TOC	18 MAR 86	.1	MGL	1.6	2.8	3.0			1.5
TOC	18 MAR 86	.1	MGL	1.6	2.8	3.1			1.4
TOC	16 SEP 86	.1	MGL	4.5	5.6	5.8			3.3
TOC	16 SEP 86	.1	MGL	4.5	5.7	5.7			3.3
TOC	16 SEP 86	.1	MGL	4.6	5.7	5.7			3.3
TOC	16 SEP 86	.1	MGL	4.5	5.8	5.9			3.2
TOC	17 MAR 87	.1	MGL	2.8	5.1	3.9		5.0	2.2
TOC	17 MAR 87	.1	MGL	3.0	5.0	3.9		4.9	2.3
TOC	17 MAR 87	.1	MGL	2.9	5.0	3.6		5.0	2.4
TOC	17 MAR 87	.1	MGL	2.9	5.0	3.8		4.8	2.2
TOX	16 SEP 86	.010	MGL	ND	ND	1.140			ND
TOX	16 SEP 86	.010	MGL	ND	ND	1.087			ND
TOX	16 SEP 86	.010	MGL	ND	ND	.981			ND
TOX	16 SEP 86	.010	MGL	ND	ND	1.053			ND
TOX	17 MAR 87	.010	MGL	ND	.020	.748		.186	ND
TOX	17 MAR 87	.010	MGL	ND	.021	.738		.198	ND
TOX	17 MAR 87	.010	MGL	ND	.028	.745		.183	ND
TOX	17 MAR 87	.010	MGL	ND	.018	.664		.182	ND
NITRATE-N	17 MAR 87	.01	MGL	.22	.42	.10		.38	.37
POTASSIUM	16 SEP 86	.10	MGL	2.94	2.63	3.52			2.29
POTASSIUM	17 MAR 87	.10	MGL	2.46	2.17	2.33		3.38	1.94

RUN DATE: 19 AUG 87

INSTALLATION: SENECA AD, NY SITE: LANDFILL

LEGEND

NOTES: ALL METALS AND OTHER PARAMETERS WHERE APPROPRIATE ARE ON A DISSOLVED (FILTERED) BASIS UNLESS OTHERWISE NOTED. DETECTION LIMITS SHOWN ARE NORMAL LEVELS; ACTUAL LIMITS MAY VARY IN ENVIRONMENTAL SAMPLES. ANALYTICAL RESULTS ARE ACCURATE TO EITHER 2 OR 3 SIGNIFICANT FIGURES.

B UPGRADIENT SITE
* VALUE EXCEEDS A NATIONAL INTERIM PRIMARY DRINKING WATER REGULATION STANDARD
# VALUE EXCEEDS A NATIONAL SECONDARY DRINKING WATER REGULATION CRITERIA
& VALUE EXCEEDS A STATE WATER QUALITY STANDARD OR CRITERIA

MGL - MILLIGRAMS/LITER
UGL - MICROGRAMS/LITER
PCL - PICOCURIES/LITER
UMC - MICROMHOS/CENTIMETER
NTU - NEPHELOMETRIC TURBIDITY UNITS
TON - THRESHOLD ODOR NUMBER
TDN - TASTE DILUTION INDEX NUMBER
CU - COLOR UNITS
PHM - PER 100 MILLILITERS

7. MAP LOCATION/SITE NUMBER. SEAD-7.

a. Unit Name. Shale Pit.

b. Unit Characteristics.

(1) Unit Type. Fill area.

(2) General Dimensions. Approximately 1 acre.

(3) Approximate Dates of Usage. 1987 to present.

(4) Operating Practices. Construction debris is dumped into the pit. No cover is applied.

(5) Present Condition and Status. Very little construction debris had been placed in the pit as of the site visit.

c. Waste Characteristics.

(1) Specific Wastes Disposed. Construction and demolition wastes such as concrete, asphalt, some wood.

(2) Physical and Chemical Characteristics. The wastes disposed in the pit are relatively inert and do not contain chemicals which would cause contamination.

d. Migration Pathways. Ground water, surface water.

e. Evidence of Release. None observed.

f. Exposure Potential. Very low.

g. Recommendations for Sampling. None.

8. MAP LOCATION/SITE NUMBER. SEAD-8.

a. Unit Name. Noncombustible Fill Area.

b. Unit Characteristics.

(1) Unit Type. Area landfill.

(2) General Dimensions. 350 feet by 350 feet, approximately 3 acres.

(3) Approximate Dates of Usage. 1974 to 1979.

(4) Operating Practices. Items which were too bulky, or noncombustible were buried instead of being incinerated or burned.

(5) Present Condition and Status. Closed. The area is vegetated with grasses, vines, and shrubs.

c. Waste Characteristics.

(1) Specific Wastes Disposed. Bulky and noncombustible wastes which could not be burned or incinerated. Some construction debris was also buried.

(2) Physical and Chemical Characteristics. Unknown. Heavy metals are the most likely constituents of concern.

(3) Migration and Dispersal Characteristics. Heavy metals are soluble in water but are also adsorbed by clays which are predominant in the landfill area.

(4) Toxicological Characteristics. Drinking water standards are available for the heavy metals.

d. Migration Pathways. Ground water.

e. Evidence of Release. None.

f. Exposure Potential. Moderate due to uncertainty of contents.

g. Recommendations for Sampling. Continue sampling well PT-11 for the State-required parameters.

h. References. 9, 14.

9. MAP LOCATION/SITE NUMBER. SEAD-9.

a. Unit Name. Old Scrap Wood Pile.

b. Unit Characteristics.

(1) Unit Type. Construction debris area landfill.

(2) General Dimensions. Approximately 1 acre.

(3) Approximate Dates of Usage. Scrap wood from 1984 to 1986, construction debris from 1977 to 1984.

(4) Operating Practices. Construction and demolition wastes were deposited and occasionally compacted. The site was also used to store scrap wood which depot employees could take. Periodically, the fire department had training exercises using the woodpile as fuel.

(5) Present Condition and Status. Inactive. The area had been smoothed, but there was no vegetation growing yet.

c. Waste Characteristics.

(1) Specific Wastes Disposed. Construction and demolition wastes including concrete, wood, and asphalt.

(2) Physical and Chemical Characteristics. In general, the wastes disposed were chemically inert.

d. Migration Pathways. Ground water.

e. Evidence of Release. None observed.

f. Exposure Potential. Very low.

g. Recommendations for Sampling. None.

h. References. 9.

10. MAP LOCATION/SITE NUMBER. SEAD-10.

a. Unit Name. Present Scrap Wood Pile.

b. Unit Characteristics.

(1) Unit Type. Scrap wood disposal site.

(2) General Dimensions. Approximately 50 feet in diameter.

(3) Approximate Dates of Usage. 1986 to present.

(4) Operating Practices. Scrap wood from various depot activities is dumped in a pile and may be removed by depot employees. Periodically, the fire department holds a training exercise using the scrap wood pile as fuel. The State is notified prior to any burning.

(5) Present Condition and Status. Active.

c. Waste Characteristics.

(1) Specific Wastes Disposed. Scrap wood from depot activities. At the time of the site visit, most of the waste wood consisted of electrical wire spools, packing crates, and wooden construction debris.

(2) Physical and Chemical Characteristics. The waste is generally chemically inert.

(3) Migration and Dispersal Characteristics. Little to no migration is expected to occur from the woodpile as long as no treated wood products are disposed. Occasional releases to the air occur.

d. Migration Pathways. Air, soil.

e. Evidence of Release. Periodic releases to the air.

f. Exposure Potential. Very low.

g. Recommendations for Sampling. None.

11. MAP LOCATION/SITE NUMBER. SEAD-11.

a. Unit Name. Old Construction Debris Landfill.

b. Unit Characteristics.

(1) Unit Type. Area fill.

(2) General Dimensions. Estimated at 2 acres.

(3) Approximate Dates of Usage. 1946 to 1949.

(4) Operating Practices. Unknown.

(5) Present Condition and Status. Abandoned. Area is vegetated with grasses and weeds.

c. Waste Characteristics.

(1) Specific Wastes Disposed. Construction debris.

(2) Physical and Chemical Characteristics. Unknown.

d. Migration Pathways. Ground water.

e. Evidence of Release. None observed.

f. Exposure Potential. Moderate.

g. Recommendations for Sampling. Ground-water monitoring wells.

Interim Final Rpt, Ground-Water Contamination Surv No. 38-26-0868-88, 27-31 Jul 87

12. MAP LOCATION/SITE NUMBER. SEAD-12.

a. Unit Name. Radioactive Waste Burial Sites.

b. Unit Characteristics.

(1) Unit Type. Burial pits.

(2) General Dimensions. Three sites, sizes unknown.

(3) Approximate Dates of Usage. Pre-1962.

(4) Operating Practices. Radioactive wastes were supposedly buried in three small pits in the Limited Area.

(5) Present Condition and Status. The sites were excavated in 1986, and the waste was sent to an authorized offpost radioactive waste landfill.

c. Waste Characteristics.

(1) Specific Wastes Disposed. Radioactive and nonradioactive wastes from the clinic (gloves, etc.) and classified metal parts.

(2) Migration and Dispersal Characteristics. Assuming that the waste was contaminated with radioactive particles, ground-water contamination could result from longterm burial of the wastes. Because the radioactive sites were excavated and the wastes were removed to a radioactive waste site offpost, there is a low potential for continuing release.

d. Migration Pathways. Ground water, soil.

e. Evidence of Release. None.

f. Exposure Potential. Low.

g. Recommendations for Sampling. None.

h. References. 9, 10.

13. MAP LOCATION/SITE NUMBER. SEAD-13.

a. Unit Name. IRFNA Disposal Site.

b. Unit Characteristics.

(1) Unit Type. Limestone-lined neutralization pits.

(2) Design Features. Six pits 8-feet by 30-feet by 4-feet deep. Five of the pits were used for acid dumping. The pits were formed using a bulldozer to scrape down to a shale stratum 4 feet below grade. Limestone was placed in the pits to a depth of approximately 2 and 1/2 feet, and the sides were also covered with limestone.

(3) Approximate Dates of Usage. Late 1950's to the early 1960's.

(4) Operating Practices. Barrels (18.8 gallon capacity) of unserviceable IRFNA were stored on pallets near the west end of the pits. A stainless steel ejector operated with water pressure was fitted into a barrel with water flowing through the ejector. The ejector discharged a mixture of water and IRFNA through a long polyethylene hose under the water surface in the pit being used. Five minutes were required to empty a barrel, and 10 barrels were usually discharged into a single pit during a day's operation.

(5) Present Condition and Status. Abandoned. Unable to locate because under the Duck Ponds.

c. Waste Characteristics.

(1) Specific Wastes Disposed. IRFNA, an oxidizer used in missile liquid propellant systems.

(2) Physical and Chemical Characteristics. Composition is 81.3-84.5-percent nitric acid (HNO_3), 13-15-percent nitrogen dioxide (NO_2), 0.5-0.7-percent hydrofluoric acid (HF), and 2.0-3.0-percent water.

(3) Migration and Dispersal Characteristics. After neutralization of the IRFNA, the primary constituents of concern would be nitrates, nitrites, and fluoride, all of which could migrate in the ground water.

(4) Toxicological Characteristics. Drinking water limits are available for nitrates and fluoride.

d. Migration Pathways. Ground water, surface water (if covered by the Duck Ponds).

e. Evidence of Release. None observed.

f. Exposure Potential. Low.

g. Recommendations for Sampling. None.

h. References. 5, 9, 10.

14. MAP LOCATION/SITE NUMBER. SEAD-14.

a. Unit Name. Refuse Burning Pits.

b. Unit Characteristics.

(1) Unit Type. Solid waste burning pits.

(2) General Dimensions. Two pits, 40 feet by 80 feet each.

(3) Approximate Dates of Usage. 1941 to 1974.

(4) Operating Practices. Refuse was dumped into the pits, and burned at least once per week. Metal was removed for recycling, and the ash was pushed into the adjacent ash landfill.

(5) Present Condition and Status. Abandoned. The incinerator replaced the pits in 1974 in the same area.

c. Waste Characteristics.

(1) Specific Wastes Disposed. All wastes generated on the depot including domestic wastes from the housing area, wastes from the administrative area, and oils and solvent sludges from the shops.

(2) Physical and Chemical Characteristics. Heavy metals, oils, and solvents are the primary constituents of concern.

(3) Migration and Dispersal Characteristics. Of the three constituents of concern, the solvent compounds are the most mobile in the ground-water environment. The oil breakdown products and the heavy metals may also migrate, but probably at a slower rate due to the clays in the area.

(4) Toxicological Characteristics. Drinking water standards and recommended maximum contaminant levels are available for many of the constituents of concern.

d. Migration Pathways. Ground water.

e. Evidence of Release. Same as ash landfill (SEAD-6).

f. Exposure Potential. Very high.

g. Recommendation. Same as ash landfill (SEAD-6).

h. References. 6, 9, 14, 23.

15. MAP LOCATION/SITE NUMBER. SEAD-15.

a. Unit Name. Bldg 2207 - Abandoned Solid Waste Incinerator.

b. Unit Characteristics.

(1) Unit Type. Solid waste incinerator.

(2) Design Features. The incinerator was a multiple chamber, batch-fed 2,000 lb/hr capacity unit designed to burn a mixture of rubbish and garbage. Features on the unit included an automatic ram-type feeder, a refractory-lined furnace with secondary combustion and settling chamber, a reciprocating stoker, a residue conveyor for ash removal, combustion air fans, a wet gas scrubber, an induced draft fan, and a refractory-lined stack.

(3) Approximate Dates of Usage. 1974 to 1979.

(4) Operating Practices. Depot refuse was incinerated once per week. Approximately 18 tons of refuse per week were generated, but some was not incinerated (large items went to the noncombustible fill area). There was a frequent problem with unburned items due to the receipt of wet garbage and bulky items. The operator had to hand-sort the refuse to remove items which would not burn.

(5) Present Condition and Status. Abandoned after being destroyed by fire on 8 May 1979.

c. Waste Characteristics.

(1) Specific Wastes Disposed. Domestic waste from depot activities and family housing. Some small munitions and asbestos were occasionally burned.

d. Migration Pathways. Air.

e. Evidence of Release. Permitted emissions.

f. Exposure Potential. None at present.

g. Recommendations for Sampling. None.

h. References. 6, 8, 9, 10, 16, 22.

Interim Final Rpt, Ground-Water Contamination Surv No. 38-26-0868-88, 27-31 Jul 87

16. MAP LOCATION/SITE NUMBER. SEAD-16.

a. Unit Name. Bldg S-311 - Abandoned Deactivation Furnace.

b. Unit Characteristics.

(1) Unit Type. Munitions deactivation furnace.

(2) Design Features. Unknown.

(3) Approximate Dates of Usage. 1945 to the mid-1960's.

(4) Operating Practices. Small arms munitions were destroyed by incineration. No air pollution or dust collection devices were installed.

(5) Present Condition and Status. Abandoned. The furnace area was flooded with rainwater entering from the lower ramp door.

c. Waste Characteristics.

(1) Specific Wastes Disposed. Obsolete and unserviceable small arms munitions.

(2) Physical and Chemical Characteristics. Explosives and heavy metals (primarily lead).

(3) Migration and Dispersal Characteristics. The explosives should have been completely destroyed in the furnace. Heavy metals probably exited in the ash and dust.

d. Migration Pathways. Air, soil, ground water.

e. Evidence of Release. None observed.

f. Exposure Potential. Moderate.

g. Recommendations for Sampling. Soils samples. Sample the standing water in the furnace area.

h. References. 9, 10.

17. MAP LOCATION/SITE NUMBER. SEAD-17.

a. Unit Name. Bldg 367 - Present Deactivation Furnace.

b. Unit Characteristics.

(1) Unit Type. Munitions deactivation furnace.

(2) Design Features. Rotating kiln incinerator with a cyclone and a baghouse for air pollution control.

(3) Approximate Dates of Usage. 1962 to present. Dust collection system added in 1978.

(4) Operating Practices. Unpacked ammunition is placed on an endless conveyor for transfer to the deactivation furnace at prescribed intervals. The ammunition is burned and exploded by the heat in the furnace. The residue from the furnace is transferred by endless conveyor to metal containers and allowed to cool. When cooled, the scrap metal is placed in wooden boxes for transfer to the DRMO.

(5) Present Condition and Status. The process control system was recently upgraded, but the furnace is presently down awaiting a trial burn to be conducted by Fall of 1988. The site is included in the Part B permit application.

c. Waste Characteristics.

(1) Specific Wastes Disposed. Obsolete and unserviceable small arms munitions (20 mm or less in size), fuzes, boosters, firing devices.

(2) Physical and Chemical Characteristics. Explosives and heavy metals (primarily lead).

(3) Migration and Dispersal Characteristics. The explosives should be completely destroyed in the furnace. Heavy metals probably exit in the ash and in the dust.

d. Migration Pathways. Air, soil, ground water.

e. Evidence of Release. Permitted air emissions for particulates (0.05 grains per square foot), carbon monoxide (183 lb/hr), and carbon monoxide (730 lb/hr). During an inspection by the EPA in July 1985, SEAD was cited for a violation of opacity limitation (exceeded 20 percent). The SEAD revised the feed rate and altered mix proportions to alleviate the problem. Prior to the upgrade, a small pit below the molten metal exit used to hold rainwater and drained into the ground probably via a pipe. It is possible that heavy metals could have leached from the dust into the water.

Interim Final Rpt, Ground-Water Contamination Surv No. 38-26-0868-88, 27-31 Jul 87

f. Exposure Potential. Moderate.

g. Recommendations for Sampling. Soil samples. Samples from the stack and the dust collection system will be collected during the trial burn study.

h. References. 9, 10, 12, 15, 20, 22.

Interim Final Rpt, Ground-Water Contamination Surv No. 38-26-0868-88, 27-31 Jul 87

18. MAP LOCATION/SITE NUMBER. SEAD-18 and SEAD-19.

a. Unit Name. Classified Document Incinerators - Bldg 709 and Bldg 801.

b. Unit Characteristics.

(1) Unit Type. Incinerator.

(2) Design Features. Both incinerators are the single chamber, propane-fired Washburn and Granger model S-200. They are rated at 96 lb/hr with normal chargings of 30-40 lb/day of classified documents. Neither of the incinerators are equipped with air pollution control devices.

(3) Approximate Dates of Usage. 1956 to present.

(4) Operating Practices. Classified documents are incinerated as required. The ash is disposed offpost in a sanitary landfill. Before SEAD had a solid waste disposal contract, the ash was buried in the ash landfill.

(5) Present Condition and Status. Operational.

c. Waste Characteristics.

(1) Specific Wastes Disposed. Classified documents and occasional infectious wastes (not within the recent past).

(2) Physical and Chemical Characteristics. Primarily paper with some plastic and possibly glass.

(3) Migration and Dispersal Characteristics. Ash from the paper may disperse through the stack.

d. Migration Pathways. Air.

e. Evidence of Release. Permitted emissions.

f. Exposure Potential. Moderate.

g. Recommendations for Sampling. Sample the ash for EP Toxic metals.

h. References. 10, 16, 22.

19. MAP LOCATION/SITE NUMBER. SEAD-20.

a. Unit Name. STP No. 4.

b. Unit Characteristics.

(1) Unit Type. Sewage treatment plant.

(2) Design Features. STP No. 4 was designed for a maximum flow of 250,000 gallons per day. The plant equipment includes a bar screen, a wet well, a dual-chambered Imhoff tank, a covered fast-rate trickling filter with plastic media, a secondary clarifier, and two sludge drying beds (35 feet by 35 feet each). The wetlands are used for tertiary treatment.

(3) Approximate Dates of Usage. 1942 to present.

(4) Operating Practices. Flow is received from the administration area and from the warehouse area and processed through the plant. Sludges are periodically removed and stored in the sewage sludge waste pile.

(5) Present Condition and Status. Operational. A new Imhoff tank and a sludge storage facility are to be constructed in the future, and the sludge bed tiles are to be repaired.

c. Specific Wastes Disposed. Domestic sewage waste from the administration and warehouse areas. Very small industrial discharges enter the system from boiler plant blowdown.

d. Migration Pathways. Surface water, ground water.

e. Evidence of Release. National Pollutant Discharge Elimination System (NPDES) permit violations for suspended and settleable solids. Leaking Imhoff tank.

f. Exposure Potential. Moderate.

g. Recommendations for Sampling. None.

h. References. 6, 7, 8, 9, 10, 11, 13, 17, 18, 22.

20. MAP LOCATION/SITE NUMBER. SEAD-21.

a. Unit Name. STP No. 715.

b. Unit Characteristics.

(1) Unit Type. Sewage treatment plant.

(2) Design Features. The design capacity is 300,000 gallons per day. The plant equipment consists of a grinder pump and comminuter, a primary settling chamber, two rotating biological contactors (RBC's), a secondary clarifier, sand filters, sludge holding tank, sludge digestion tank (old Imhoff tank), and two concrete-lined sludge drying beds with gravel and sand floors (40 feet by 15 feet each).

(3) Approximate Dates of Usage. 1956 to present.

(4) Operating Practices. Flow is received from the troop area. Sludges are periodically removed and stored in the sewage sludge waste pile.

(5) Present Condition and Status. Operational. The sludge beds are scheduled to be enlarged to 3,400 square feet.

c. Specific Wastes Disposed. Domestic wastewater from the troop area at the north end of the depot.

d. Migration Pathways. Surface water, ground water.

e. Evidence of Release. The NPDES permit violations for biochemical oxygen demand and suspended solids in 1986 (due to high flow rate due to rain and sloughing of microbial solids from the RBC's).

f. Exposure Potential. Moderate.

g. Recommendations for Sampling. None.

h. References. 6, 7, 8, 9, 10, 11, 15, 19, 22.

21. MAP LOCATION/SITE NUMBER. SEAD-22.

a. Unit Name. STP No. 314.

b. Unit Characteristics.

(1) Unit Type. Abandoned sewage treatment plant.

(2) Design Features. Old plant 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 plant was converted to a lift station for STP No. 4 in 1978. The design flow capacity was 100,000 gallons per day.

(3) Approximate Dates of Usage. 1941 to October 1978 when converted to a lift station.

(4) Operating Practices. Received flow from the warehouse area and discharged to Kendaia Creek.

(5) Present Condition and Status. Presently a lift station for STP No. 4. All parts of the original operation have been removed or filled and covered with shale and soil. The area is grassy, but several parts of the foundation can be seen.

c. Specific Wastes Disposed. Domestic wastewater from the warehouse area.

d. Migration Pathways. Surface water, ground water.

e. Evidence of Release. None.

f. Exposure Potential. Low.

g. Recommendations for Sampling. None.

h. References. 6, 7, 8, 9, 10.

Interim Final Rpt, Ground-Water Contamination Surv No. 38-26-0868-88, 27-31 Jul 87

22. MAP LOCATION/SITE NUMBER. SEAD-23.

a. Unit Name. Demolition Ground.

b. Unit Characteristics.

(1) Unit Type. Open burning (OB)/open detonation (OD) grounds.

(2) Design Features. The OB/OD grounds consist of a detonation hill and nine burning pads (A through J) on a 90-acre site. The pads are constructed of broken shale, and the hill is glacial material which is moved around for the detonation activities. Figure C-3 shows the area.

(3) Approximate Dates of Usage. The detonation area has been in use from 1941 to the present, and the burning pads have been used since the late 1950's.

(4) Operating Practices.

(a) Detonation Hill. Material to be detonated is placed in a bulldozed hole with demolition material to destroy the ammunition or components. Primer cord is attached to the demolition material, blasting caps are attached to the primer cord, and the primer cord is attached to the circuit wire. The hole is backfilled and a minimum of 8 feet of soil is placed over the material to be detonated. The operator detonates the material after returning to the dugout and taking the proper safety precautions.

(b) Burning Pads. Combustible beds of pallets and wooden boxes are prepared on the pads, and the ammunition or components to be destroyed are placed on the beds. A trail of propellant approximately 5-feet long, 6-inches wide, and 3-inches deep is placed on the ground leading to the combustible bed. Electric squib is placed in the propellant trail and connected to firing wires. The operator fires the circuits from the office after taking the proper safety precautions. All metal parts are recovered for recycling through the DRMO.

(5) Present Condition and Status. The detonation ground is active, but the burning ground pads are scheduled to be closed and replaced with burning in troughs. The site is included in the revised RCRA Part B permit application.

c. Waste Characteristics.

(1) Specific Wastes Disposed. Large obsolete and unserviceable ammunition and components are destroyed by detonation. Explosives-contaminated trash, fuzes containing lead compounds, and projectiles containing TNT, Comp B, and Amatol are burned on the pads.

(2) Physical and Chemical Characteristics. Heavy metals, nitrates, and explosives compounds are the constituents of concerns.

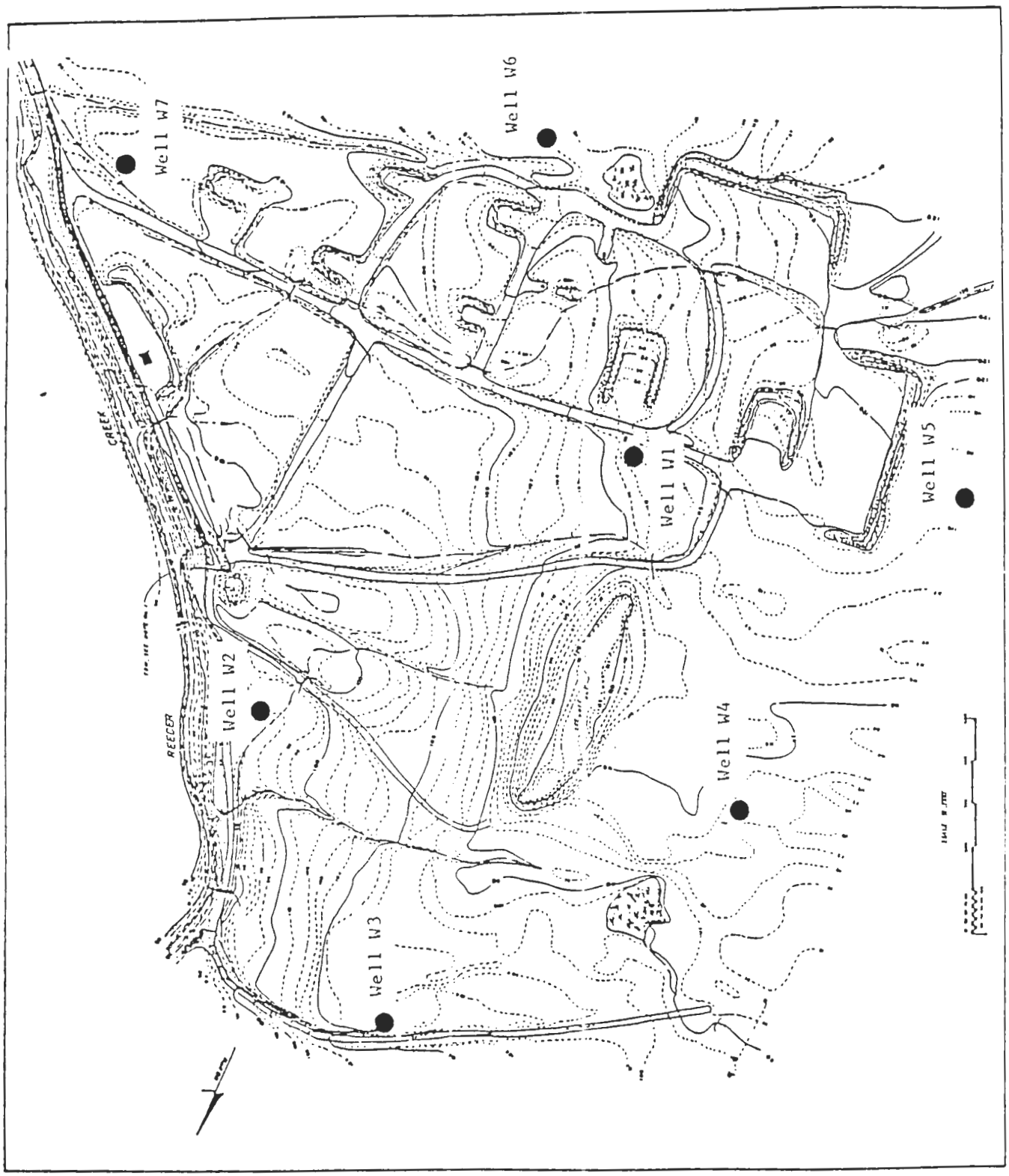


FIGURE C-3. Map of the Demolition Ground at Seneca Army Depot.

(3) Migration and Dispersal Characteristics. The metals, nitrates, and explosives can migrate in the ground water, but can also be adsorbed onto the soil (particularly the clay particles).

(4) Toxicological Characteristics. Army-suggested drinking water limits are available for 2,4,6-TNT and for RDX. The explosive compound 2,4-DNT is a suspected carcinogen. Drinking water limits are available for many of the heavy metals.

d. Migration Pathways. Air, soil, ground water, surface water.

e. Evidence of Release. Table C-2 lists the ground-water level and quality data available for the demolition grounds. Ground-water contamination by metals and explosive compounds may be present in the active section of the burning pad area, but the perimeter ground-water monitoring wells remain clean.

f. Exposure Potential. Moderate.

g. Recommendations for Sampling. No additional sampling is recommended. Continue to monitor the perimeter wells.

h. References. 6, 9, 10, 12, 16, 18, 21, 22.

Table 3-1. List of GSA-Owned Ores and Minerals Stored at Seneca Army Depot

Location (See Fig. 3-1)	Ore/Mineral
1	Silicon Carbide
2	Chromite Ore
	Chromium Ore
3	Aluminum Oxide
4	Ferrochromium Ore
5	Ferro Manganese
6	Zinc (metallic)
7	Rutile (Titanium)
8	Asbestos
9	Antimony
10	Chrome Metal, Electrolyte (ore) (Bldg. 356)
	Chrome Metal, Exothermic (ore) (Bldg. 356)
	Columbite Ore (Bldg. 356)
	Columbium (Bldg. 356)
	Ferrocolombium Ore (Bldg. 356)
	Graphite Powder (Bldg. 356)
	Nickel Ore (Bldg. 356)
	Tantalum Ore (Bldg. 356)
11	Cadmium Ore (Bldg. 357)
	Tannin (Bldg. 357)

Source: ESE, 1987.

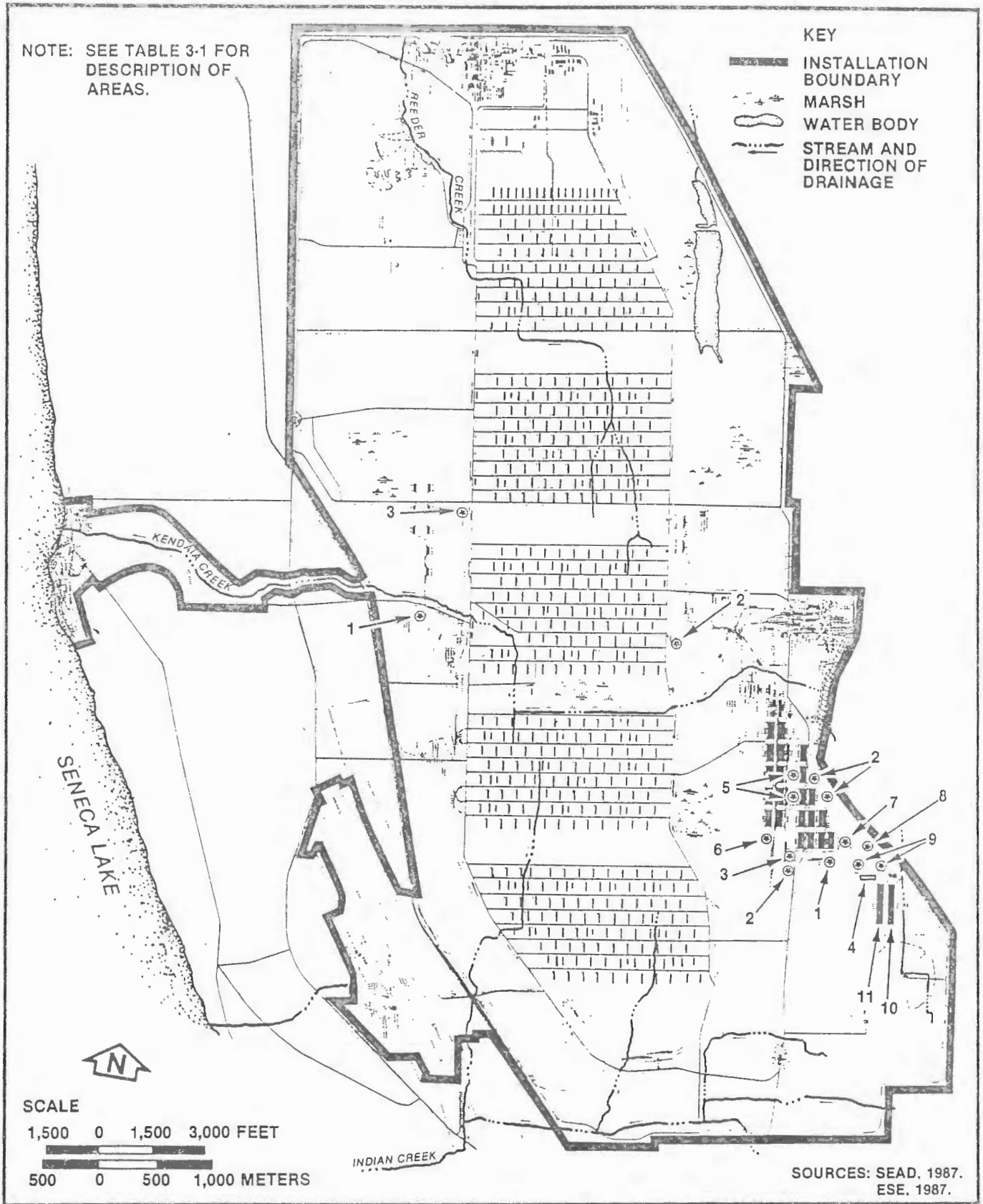


Figure 3-1
LOCATIONS AND TYPES OF MINERALS AND ORE STOCKPILES ON SENECA ARMY DEPOT

Prepared for:
U.S. Army Toxic and Hazardous Materials Agency
Aberdeen Proving Ground, Maryland

TABLE C-2.

SAMPLING SITES RESULTS

TABLE C-2. Sampling Sites Results

RUN DATE: 19 AUG 87

INSTALLATION: SENECA AD, NY

SITE: DEMOLITION GROUNDS

PARAMETER	SAMPLING DATE	DETECTION LIMIT	UNITS	SAMPLING SITES RESULTS B W5	W4	W6	W1	W3	W2	W7
WATER										
LEVELS (A)	04 JAN 82		FT	118.5	109.7	110.8	111.3	105.3	95.4	98.4
LEVELS (A)	13 APR 82		FT	118.2	109.4	110.9	111.6	105.4	94.7	103.3
LEVELS (A)	28 JUN 82		FT	116.3	108.2	108.7	108.2	102.6	93.4	99.9
LEVELS (A)	27 SEP 82		FT	112.9	107.2	105.2	108.6	99.7	92.6	
LEVELS (A)	07 FEB 83		FT	118.2	109.8	110.5	110.9	105.2	94.6	103.0
LEVELS (A)	08 AUG 83		FT	112.9	106.1	105.0		99.9	92.3	
LEVELS (A)	14 FEB 84		FT	118.3	108.9	109.7	109.3	105.5	94.9	103.1
LEVELS (A)	26 JUN 84		FT	109.4		109.6	109.3	104.6	94.8	99.3
LEVELS (A)	27 JUN 84		FT		109.0					
LEVELS (A)	17 SEP 84		FT	115.8	107.9	108.6	109.3	103.6	93.7	100.7
LEVELS (A)	19 MAR 85		FT	D	110.2	110.3	110.5	105.3	93.7	103.6
LEVELS (A)	12 SEP 85		FT	113.1		104.3	106.3	99.4	92.3	
LEVELS (A)	17 MAR 86		FT	118.5	110.8	110.0	112.9	105.5	95.7	104.0
LEVELS (A)	16 SEP 86		FT	115.7	108.3	107.7	107.5	102.5	93.1	99.8
LEVELS (A)	16 MAR 87		FT	118.5	109.8	111.0	110.5	104.9	94.1	102.8

RUN DATE: 19 AUG 87

INSTALLATION: SENECA AD, NY

SITE: DEMOLITION GROUNDS

PARAMETER	SAMPLING DATE	DETECTION LIMIT	UNITS	SAMPLING SITES RESULTS B						
				W5	W4	W6	W1	W3	W2	W7
ARSENIC	05 JAN 82	.010	MGL	ND	ND	ND	ND	ND	ND	ND
ARSENIC	13 APR 82	.010	MGL	ND	ND	ND	ND	ND	ND	ND
ARSENIC	29 JUN 82	.010	MGL	ND	ND	ND	ND	ND	ND	ND
ARSENIC	28 SEP 82	.010	MGL	ND		ND	ND	ND	ND	
BARIUM	05 JAN 82	.10	MGL	ND	ND	ND	ND	ND	ND	ND
BARIUM	13 APR 82	.10	MGL	ND	ND	ND	ND	ND	ND	ND
BARIUM	29 JUN 82	.10	MGL	ND	ND	ND	ND	ND	ND	ND
BARIUM	28 SEP 82	.10	MGL	ND		ND	ND	ND	ND	
CADMIUM	05 JAN 82	5.000	UGL	ND	ND	ND	ND	ND	ND	ND
CADMIUM	13 APR 82	5.000	UGL	ND	ND	ND	ND	ND	ND	ND
CADMIUM	29 JUN 82	5.000	UGL	ND	ND	ND	ND	ND	ND	ND
CADMIUM	28 SEP 82	5.000	UGL	ND		ND	ND	ND	ND	
CHROMIUM	05 JAN 82	.010	MGL	ND	ND	ND	ND	ND	ND	ND
CHROMIUM	13 APR 82	.010	MGL	ND	ND	ND	ND	ND	ND	ND
CHROMIUM	29 JUN 82	.010	MGL	ND	ND	ND	ND	ND	ND	ND
CHROMIUM	28 SEP 82	.010	MGL	ND		ND	ND	ND	ND	
FLUORIDE	05 JAN 82	.1	MGL	.3	.2	.3	.1	.2	.1	.3
FLUORIDE	13 APR 82	.1	MGL	.3	.2	.2	.2	.2	.1	.2
FLUORIDE	29 JUN 82	.1	MGL	.4	.2	.2	.2	.2	.2	.3
FLUORIDE	28 SEP 82	.1	MGL	.3	.2	.2	.2	.2	.2	
LEAD	05 JAN 82	.010	MGL	ND	ND	ND	ND	ND	ND	ND
LEAD	13 APR 82	.010	MGL	ND	ND	ND	ND	ND	ND	ND
LEAD	29 JUN 82	.010	MGL	ND	ND	ND	ND	ND	ND	ND
LEAD	28 SEP 82	.010	MGL	ND		ND	ND	ND	ND	
MERCURY	05 JAN 82	.2	UGL	ND	ND	ND	ND	ND	ND	ND
MERCURY	13 APR 82	.2	UGL	ND	ND	ND	ND	ND	ND	ND
MERCURY	29 JUN 82	.2	UGL	ND	ND	ND	ND	ND	ND	ND
MERCURY	28 SEP 82	.2	UGL	ND	ND	ND	ND	ND	ND	
NO2+NO3 AS N	05 JAN 82	.05	MGL	6.70	.71	1.20	1.60	.08	ND	.22
NO2+NO3 AS N	13 APR 82	.05	MGL	5.00	.49	1.00	1.00	.13	ND	.38
NO2+NO3 AS N	29 JUN 82	.05	MGL	6.00	.52	2.00	2.00	.06	ND	.30
NO2+NO3 AS N	28 SEP 82	.05	MGL	10.00	.12	3.00	2.00	.08	ND	
SELENIUM	05 JAN 82	.005	MGL	ND	ND	ND	ND	ND	ND	ND
SELENIUM	13 APR 82	.005	MGL	ND	ND	ND	ND	ND	ND	ND
SELENIUM	29 JUN 82	.005	MGL	ND	ND	ND	ND	ND	ND	ND
SELENIUM	28 SEP 82	.005	MGL	ND		ND	ND	ND	ND	
SILVER	05 JAN 82	.010	MGL	ND	ND	ND	ND	ND	ND	ND
SILVER	13 APR 82	.010	MGL	ND	ND	ND	ND	ND	ND	ND
SILVER	29 JUN 82	.010	MGL	ND	ND	ND	ND	ND	ND	ND
SILVER	28 SEP 82	.010	MGL	ND		ND	ND	ND	ND	
ENDRIN	05 JAN 82	.04	UGL	ND	ND	ND	ND	ND	ND	ND

RUN DATE: 19 AUG 87

INSTALLATION: SENECA AD, NY

SITE: DEMOLITION GROUNDS

PARAMETER	SAMPLING DATE	DETECTION LIMIT	UNITS	SAMPLING SITES RESULTS B W5	W4	W6	W1	W3	W2	W7
ENDRIN	13 APR 82	40.00	UGL	ND	ND	ND	ND	ND	ND	ND
ENDRIN	29 JUN 82	.04	UGL	ND	ND	ND	ND	ND	ND	ND
ENDRIN	28 SEP 82	.04	UGL	ND		ND	ND	ND	ND	
LINDANE	05 JAN 82	.08	UGL	ND	ND	ND	ND	ND	ND	ND
LINDANE	13 APR 82	.08	UGL	ND	ND	ND	ND	ND	ND	ND
LINDANE	29 JUN 82	.08	UGL	ND	ND	ND	ND	ND	ND	ND
LINDANE	28 SEP 82	.08	UGL	ND		ND	ND	ND	ND	
TOXAPHENE	05 JAN 82	1.6	UGL	ND	ND	ND	ND	ND	ND	ND
TOXAPHENE	13 APR 82	1.6	UGL	ND	ND	ND	ND	ND	ND	ND
TOXAPHENE	29 JUN 82	1.6	UGL	ND	ND	ND	ND	ND	ND	ND
TOXAPHENE	28 SEP 82	1.6	UGL	ND		ND	ND	ND	ND	
METHOXYCHLOR	05 JAN 82	1.6	UGL	ND	ND	ND	ND	ND	ND	ND
METHOXYCHLOR	13 APR 82	1.6	UGL	ND	ND	ND	ND	ND	ND	ND
METHOXYCHLOR	29 JUN 82	1.6	UGL	ND	ND	ND	ND	ND	ND	ND
METHOXYCHLOR	28 SEP 82	1.6	UGL	ND		ND	ND	ND	ND	
2,4-D	05 JAN 82	3.8	UGL	ND	ND	ND	ND	ND	ND	ND
2,4-D	13 APR 82	3.8	UGL	ND	ND	ND	ND	ND	ND	ND
2,4-D	29 JUN 82	3.8	UGL	ND	ND	ND	ND	ND	ND	ND
2,4-D	28 SEP 82	3.8	UGL	ND		ND	ND	ND	ND	
SILVEX	05 JAN 82	.5	UGL	ND	ND	ND	ND	ND	ND	ND
SILVEX	13 APR 82	.5	UGL	ND	ND	ND	ND	ND	ND	ND
SILVEX	29 JUN 82	.5	UGL	ND	ND	ND	ND	ND	ND	ND
SILVEX	28 SEP 82	.5	UGL	ND		ND	ND	ND	ND	
GROSS ALPHA	05 JAN 82	4.61	PCL	ND	ND	ND	ND	ND	4.14	ND
GROSS ALPHA	13 APR 82	3.37	PCL	3.33	ND	2.63	2.30	3.64	3.39	ND
GROSS ALPHA	29 JUN 82	6.49	PCL	4.81	4.26	5.99	ND	12.60	9.04	3.87
GROSS ALPHA	28 SEP 82	5.20	PCL	ND		ND	ND	ND		
RADIUM-226	28 JUN 82	.24	PCL			ND	.27	ND	ND	
RADIUM-226	28 SEP 82	.18	PCL	ND						
GROSS BETA	05 JAN 82	1.52	PCL	2.02	3.01	2.06	2.31	2.91	2.12	ND
GROSS BETA	13 APR 82	1.64	PCL	ND	1.60	ND	2.05	2.08	ND	ND
GROSS BETA	29 JUN 82	1.86	PCL	1.59	3.34	ND	1.62	1.96	1.99	ND
GROSS BETA	28 SEP 82	1.76	PCL	ND		1.22	1.85	3.14		
CHLORIDE	05 JAN 82	1.0	MGL	4.6	10.0	17.6	7.9	28.5	5.8	3.5
CHLORIDE	13 APR 82	1.0	MGL	4.0	9.0	3.0	7.0	46.0	4.9	2.0
CHLORIDE	29 JUN 82	1.0	MGL	9.0	9.0	11.0	12.0	51.0	10.0	7.0
CHLORIDE	28 SEP 82	1.0	MGL	1.0	ND	ND	3.0	11.2	6.0	
CHLORIDE	08 FEB 83	1.0	MGL	2.0	6.0	7.0	6.0	9.0	3.0	2.0
CHLORIDE	09 AUG 83	1.0	MGL	3.0	5.0	3.0		15.0	4.0	
CHLORIDE	14 FEB 84	2.0	MGL	ND	8.7	20.0	2.3	4.0	ND	ND
CHLORIDE	20 MAR 85	1.0	MGL		6.0	12.0	7.0	15.0	4.0	3.0

RUN DATE: 19 AUG 87

INSTALLATION: SENECA AD. NY

SITE: DEMOLITION GROUNDS

PARAMETER	SAMPLING DATE	DETECTION LIMIT	UNITS	SAMPLING SITES RESULTS B W5	W4	W6	W1	W3	W2	W7
CHLORIDE	18 MAR 86	1.0	MGL	3.0	5.0	4.0	5.0	6.0	3.0	2.0
CHLORIDE	17 MAR 87	1.0	MGL	2.0	4.0	4.0	6.0	5.0	3.0	1.0
IRON	05 JAN 82	.02	MGL	.13	.15	.27	.15	.19	.10	.14
IRON	13 APR 82	.03	MGL	ND	.08	.09	.10	.10	.02	.10
IRON	29 JUN 82	.03	MGL	ND	.24	.26	.44#	.06	.09	.70#
IRON	28 SEP 82	.02	MGL	.12		.24	.19	.23	.09	
IRON	08 FEB 83	.02	MGL	.13	.10	.15	.09	.07	.06	.08
IRON	09 AUG 83	.02	MGL	.09	.16	.25		.07	.12	
IRON	14 FEB 84	.10	MGL	.15	.11	ND	ND	ND	ND	1.02#
IRON	20 MAR 85	.10	MGL		ND	ND	ND	ND	ND	ND
IRON	18 MAR 86	.03	MGL	ND	ND	.03	ND	ND	ND	ND
IRON	17 MAR 87	.10	MGL	ND	ND	ND	ND	ND	ND	ND
MANGANESE	05 JAN 82	.010	MGL	.270#	.040	.300#	ND	ND	.070#	.090#
MANGANESE	13 APR 82	.010	MGL	.100#	.060#	.040	.020	ND	.050	.030
MANGANESE	29 JUN 82	.001	MGL	.210#	.050	.020	.020	.030	.130#	.010
MANGANESE	28 SEP 82	.010	MGL	ND		ND	ND	.040	.160#	
MANGANESE	08 FEB 83	.010	MGL	.020	.120#	.020	ND	ND	.010	.010
MANGANESE	09 AUG 83	.001	MGL	.120#	.320#	.010		.020	.210#	
MANGANESE	14 FEB 84	.030	MGL	ND	ND	.035	ND	ND	ND	ND
MANGANESE	20 MAR 85	.030	MGL		.085#	.045	ND	ND	.038	ND
MANGANESE	18 MAR 86	.010	MGL	ND	.120#	ND	ND	ND	ND	ND
MANGANESE	17 MAR 87	.030	MGL	.078#	.275#	ND	ND	ND	ND	ND
PHENOL	05 JAN 82	.01	MGL	ND	ND	ND	ND	ND	ND	ND
PHENOL	13 APR 82	.01	MGL	ND	ND	ND	ND	ND	ND	ND
PHENOL	29 JUN 82	.01	MGL	ND	ND	ND	.01&	ND	ND	ND
PHENOL	28 SEP 82	.01	MGL	.01&	.01&	ND	.02&	ND	.01&	
PHENOL	08 FEB 83	.01	MGL	ND	ND	ND	ND	ND	ND	ND
PHENOL	09 AUG 83	.01	MGL	ND	ND	ND		ND	ND	
PHENOL	14 FEB 84	.01	MGL	ND	ND	ND	ND	ND	ND	ND
PHENOL	20 MAR 85	.01	MGL		ND	ND	ND	ND	ND	ND
PHENOL	18 MAR 86	.01	MGL	ND	ND	ND	ND	ND	ND	ND
PHENOL	17 MAR 87	.01	MGL	ND	ND	ND	ND	ND	ND	ND
SODIUM	05 JAN 82	1.	MGL	15.	28.	20.	15.	14.	22.	12.
SODIUM	13 APR 82	1.	MGL	10.	37.	8.	11.	15.	21.	10.
SODIUM	29 JUN 82	1.	MGL	12.	11.	9.	15.	20.	24.	8.
SODIUM	28 SEP 82	1.	MGL	12.		9.	8.	10.	16.	
SODIUM	08 FEB 83	1.	MGL	21.	37.	11.	12.	8.	15.	7.
SODIUM	09 AUG 83	1.	MGL	16.	36.	11.		9.	15.	
SODIUM	14 FEB 84	1.	MGL	7.	7.	16.	5.	4.	14.	3.
SODIUM	20 MAR 85	1.	MGL		23.	24.	9.	7.	9.	2.
SODIUM	18 MAR 86	1.	MGL	8.	20.	30.	7.	5.	6.	4.

RUN DATE: 19 AUG 87

INSTALLATION: SENECA AD, NY

SITE: DEMOLITION GROUNDS

PARAMETER	SAMPLING DATE	DETECTION LIMIT	UNITS	SAMPLING SITES RESULTS B W5	W4	W6	W1	W3	W2	W7
SODIUM	17 MAR 87	1.	MGL	8.	30.	14.	11.	6.	9.	4.
SULFATE	05 JAN 82	2.0	MGL	57.5	327.0&	38.8	233.0	147.0	225.0	77.0
SULFATE	13 APR 82	2.0	MGL	110.0	330.0&	100.0	220.0	210.0	263.0&	84.0
SULFATE	29 JUN 82	2.0	MGL	110.0	150.0	100.0	260.0&	220.0	293.0&	70.0
SULFATE	28 SEP 82	2.0	MGL	130.0	81.0	88.0	180.0	194.0	280.0&	
SULFATE	08 FEB 83	2.0	MGL	93.0	600.0&	110.0	210.0	180.0	200.0	74.0
SULFATE	09 AUG 83	2.0	MGL	129.0	333.0&	106.0		215.0	203.0	
SULFATE	14 FEB 84	2.0	MGL	51.0	117.0	130.0	119.0	148.0	108.0	7.3
SULFATE	20 MAR 85	2.0	MGL		306.0&	231.0	231.0	194.0	180.0	47.0
SULFATE	18 MAR 86	2.0	MGL	77.0	283.0&	63.0	248.0	148.0	117.0	57.0
SULFATE	17 MAR 87	2.0	MGL	24.0	255.0&	67.0	160.0	56.0	6.0	27.0
COND(FIELD)	20 MAR 85	1.	UMC		680.	440.	540.	550.	490.	270.
COND(FIELD)	18 MAR 86	1.	UMC	415.	650.	315.	460.	440.	340.	240.
COND(FIELD)	18 MAR 86	1.	UMC	415.	645.	320.	460.	440.	335.	240.
COND(FIELD)	18 MAR 86	1.	UMC	415.	650.	315.	460.	450.	335.	240.
COND(FIELD)	18 MAR 86	1.	UMC	415.	645.	310.	460.	445.	335.	235.
COND(FIELD)	17 MAR 87	1.	UMC	380.	700.	400.	500.	445.	450.	310.
COND(FIELD)	17 MAR 87	1.	UMC	375.	705.	400.	495.	440.	445.	315.
COND(FIELD)	17 MAR 87	1.	UMC	370.	700.	405.	500.	445.	450.	315.
COND(FIELD)	17 MAR 87	1.	UMC	375.	695.	405.	500.	440.	440.	315.
PH(FIELD)	05 JAN 82		PH	7.3	7.2	7.5	7.2	7.4	7.3	7.1
PH(FIELD)	05 JAN 82		PH	7.3	7.2	7.5	7.2	7.4	7.3	7.1
PH(FIELD)	05 JAN 82		PH	7.3	7.2	7.5	7.2	7.4	7.3	7.1
PH(FIELD)	05 JAN 82		PH	7.3	7.2	7.5	7.2	7.4	7.3	7.1
PH(FIELD)	13 APR 82		PH	7.6	7.2	7.6	7.6	7.4	7.4	7.4
PH(FIELD)	13 APR 82		PH	7.6	7.2	7.6	7.6	7.4	7.4	7.4
PH(FIELD)	13 APR 82		PH	7.6	7.2	7.6	7.6	7.4	7.4	7.4
PH(FIELD)	13 APR 82		PH	7.6	7.2	7.6	7.6	7.4	7.4	7.4
PH(FIELD)	29 JUN 82		PH	7.8	7.8	7.8	8.1	7.7	7.8	7.8
PH(FIELD)	29 JUN 82		PH	7.8	7.8	7.8	8.1	7.7	7.8	7.8
PH(FIELD)	29 JUN 82		PH	7.8	7.8	7.8	8.1	7.7	7.8	7.8
PH(FIELD)	29 JUN 82		PH	7.8	7.8	7.8	8.1	7.7	7.8	7.8
PH(FIELD)	27 SEP 82		PH	7.6	7.9	7.7	7.5	7.5	7.6	
PH(FIELD)	27 SEP 82		PH	7.6	7.9	7.7	7.5	7.5	7.6	
PH(FIELD)	27 SEP 82		PH	7.6	7.9	7.7	7.5	7.5	7.6	
PH(FIELD)	27 SEP 82		PH	7.6	7.9	7.7	7.5	7.5	7.6	
PH(FIELD)	08 FEB 83		PH	7.8	7.3	7.8	7.5	7.5	7.7	7.6
PH(FIELD)	08 FEB 83		PH	7.8	7.3	7.8	7.5	7.5	7.7	7.6
PH(FIELD)	08 FEB 83		PH	7.8	7.3	7.8	7.5	7.5	7.7	7.6
PH(FIELD)	08 FEB 83		PH	7.8	7.3	7.8	7.5	7.5	7.7	7.6
PH(FIELD)	09 AUG 83		PH	7.1	6.9	6.9		7.0	7.1	

RUN DATE: 19 AUG 87

INSTALLATION: SENECA AD, NY

SITE: DEMOLITION GROUNDS

PARAMETER	SAMPLING DATE	DETECTION LIMIT	UNITS	SAMPLING SITES RESULTS B						
				W5	W4	W6	W1	W3	W2	W7
PH(FIELD)	09 AUG 83		PH	7.1	6.9	6.9		7.0	7.1	
PH(FIELD)	09 AUG 83		PH	7.1	6.9	6.9		7.0	7.1	
PH(FIELD)	09 AUG 83		PH	7.1	6.9	6.9		7.0	7.1	
PH(FIELD)	14 FEB 84		PH	7.3	6.8	7.2	7.3	7.4	7.4	7.5
PH(FIELD)	14 FEB 84		PH	7.3	6.9	7.2	7.3	7.4	7.5	7.5
PH(FIELD)	14 FEB 84		PH	7.4	6.8	7.3	7.3	7.4	7.4	7.6
PH(FIELD)	14 FEB 84		PH	7.3	6.9	7.3	7.3	7.5	7.4	7.6
PH(FIELD)	27 JUN 84		PH	7.0	6.8	7.1	7.1	7.0	7.1	7.1
PH(FIELD)	18 SEP 84		PH	8.4	7.5	7.6	7.6	7.5	7.1	7.6
PH(FIELD)	18 SEP 84		PH	8.3	7.6	7.5	7.7	7.4	7.1	7.5
PH(FIELD)	18 SEP 84		PH	8.4	7.6	7.5	7.7	7.4	7.1	7.5
PH(FIELD)	18 SEP 84		PH	8.3	7.5	7.6	7.6	7.4	7.2	7.5
PH(FIELD)	20 MAR 85		PH		6.8	6.9	6.7	6.8	7.0	7.0
PH(FIELD)	13 SEP 85		PH	7.1		7.1	7.1	7.1	7.0	
PH(FIELD)	18 MAR 86		PH	7.1	6.8	7.4	7.2	7.0	7.2	7.3
PH(FIELD)	18 MAR 86		PH	7.1	6.9	7.4	7.3	7.1	7.3	7.3
PH(FIELD)	18 MAR 86		PH	7.1	6.8	7.4	7.2	7.0	7.3	7.3
PH(FIELD)	18 MAR 86		PH	7.1	6.8	7.4	7.1	7.0	7.2	7.3
PH(FIELD)	16 SEP 86		PH	7.1	7.0	7.4	6.9	7.0	7.0	7.2
PH(FIELD)	17 MAR 87		PH	6.9	7.3	7.4	6.9	7.2	7.1	6.9
PH(FIELD)	17 MAR 87		PH	7.0	7.2	7.4	6.8	7.1	7.0	7.0
PH(FIELD)	17 MAR 87		PH	6.8	7.1	7.5	6.9	7.1	6.9	6.8
PH(FIELD)	17 MAR 87		PH	6.9	7.2	7.4	6.9	7.1	6.9	6.9
PH(LAB)	14 FEB 84		PH	7.9	7.7	7.8	7.7	7.8	7.9	7.5
SPEC COND	05 JAN 82	1.	UMC	730.	1130.	720.	850.	860.	930.	640.
SPEC COND	05 JAN 82	1.	UMC	730.	1120.	722.	850.	860.	930.	640.
SPEC COND	05 JAN 82	1.	UMC	730.	1130.	720.	850.	850.	930.	640.
SPEC COND	05 JAN 82	1.	UMC	730.	1130.	720.	850.	850.	920.	640.
SPEC COND	13 APR 82	1.	UMC	719.	1300.	699.	810.	1000.	975.	639.
SPEC COND	13 APR 82	1.	UMC	718.	1302.	699.	810.	1000.	972.	639.
SPEC COND	13 APR 82	1.	UMC	719.	1301.	699.	810.	1000.	974.	640.
SPEC COND	13 APR 82	1.	UMC	720.	1300.	699.	810.	1000.	973.	638.
SPEC COND	29 JUN 82	1.	UMC	620.	590.	580.	750.	1040.	890.	490.
SPEC COND	29 JUN 82	1.	UMC	620.	590.	580.	760.	1030.	890.	490.
SPEC COND	29 JUN 82	1.	UMC	620.	600.	585.	760.	1030.	890.	490.
SPEC COND	29 JUN 82	1.	UMC	620.	600.	580.	750.	1030.	890.	490.
SPEC COND	28 SEP 82	1.	UMC	795.		665.	700.	925.	980.	
SPEC COND	28 SEP 82	1.	UMC	790.		665.	700.	920.	980.	
SPEC COND	28 SEP 82	1.	UMC	795.		665.	700.	920.	980.	
SPEC COND	28 SEP 82	1.	UMC	795.		665.	700.	920.	980.	
SPEC COND	08 FEB 83	1.	UMC	580.	1160.	685.	760.	680.	755.	605.

RUN DATE: 19 AUG 87

INSTALLATION: SENECA AD, NY

SITE: DEMOLITION GROUNDS

PARAMETER	SAMPLING DATE	DETECTION LIMIT	UNITS	SAMPLING SITES RESULTS B W5	W4	W6	W1	W3	W2	W7
SPEC COND	08 FEB 83	1.	UMC	580.	1160.	690.	755.	680.	755.	605.
SPEC COND	08 FEB 83	1.	UMC	585.	1160.	680.	755.	680.	760.	600.
SPEC COND	08 FEB 83	1.	UMC	580.	1160.	685.	760.	685.	760.	600.
SPEC COND	09 AUG 83	1.	UMC	900.	1190.	1020.		1050.	930.	
SPEC COND	09 AUG 83	1.	UMC	890.	1200.	1020.		1050.	940.	
SPEC COND	09 AUG 83	1.	UMC	890.	1190.	1020.		1040.	940.	
SPEC COND	09 AUG 83	1.	UMC	900.	1200.	1020.		1040.	940.	
SPEC COND	14 FEB 84	1.	UMC	360.	430.	620.	400.	500.	570.	88.
SPEC COND	14 FEB 84	1.	UMC	360.	420.	620.	410.	510.	580.	87.
SPEC COND	14 FEB 84	1.	UMC	360.	430.	620.	400.	510.	580.	88.
SPEC COND	14 FEB 84	1.	UMC	360.	430.	630.	400.	510.	570.	88.
SPEC COND	18 SEP 84	1.	UMC	710.	1000.	620.	670.	760.	860.	500.
SPEC COND	18 SEP 84	1.	UMC	720.	990.	620.	680.	760.	860.	500.
SPEC COND	18 SEP 84	1.	UMC	720.	1000.	620.	680.	760.	860.	490.
SPEC COND	18 SEP 84	1.	UMC	720.	1000.	620.	680.	760.	860.	510.
SPEC COND	20 MAR 85	1.	UMC		990.	700.	750.	760.	750.	390.
SPEC COND	20 MAR 85	1.	UMC		1000.	700.	750.	760.	740.	400.
SPEC COND	20 MAR 85	1.	UMC		1000.	700.	750.	760.	740.	390.
SPEC COND	20 MAR 85	1.	UMC		990.	700.	760.	760.	740.	390.
SPEC COND	13 SEP 85	1.	UMC	720.		610.	880.	830.	840.	
SPEC COND	13 SEP 85	1.	UMC	720.		600.	880.	840.	840.	
SPEC COND	13 SEP 85	1.	UMC	730.		600.	870.	840.	840.	
SPEC COND	13 SEP 85	1.	UMC	730.		600.	880.	830.	830.	
SPEC COND	18 MAR 86	1.	UMC	590.	960.	490.	670.	620.	520.	3600.
SPEC COND	18 MAR 86	1.	UMC	590.	960.	500.	660.	620.	520.	3600.
SPEC COND	18 MAR 86	1.	UMC	590.	950.	500.	670.	620.	520.	3600.
SPEC COND	18 MAR 86	1.	UMC	590.	950.	490.	660.	610.	520.	3600.
SPEC COND	16 SEP 86	1.	UMC	710.	1160.	690.	870.	950.	820.	600.
SPEC COND	16 SEP 86	1.	UMC	720.	1150.	690.	880.	950.	810.	600.
SPEC COND	16 SEP 86	1.	UMC	710.	1150.	690.	880.	950.	820.	600.
SPEC COND	16 SEP 86	1.	UMC	720.	1160.	690.	880.	960.	820.	610.
SPEC COND	17 MAR 87	1.	UMC	640.	990.	670.	820.	710.	730.	530.
SPEC COND	17 MAR 87	1.	UMC	630.	1000.	680.	810.	710.	730.	530.
SPEC COND	17 MAR 87	1.	UMC	630.	1000.	680.	820.	720.	730.	530.
SPEC COND	17 MAR 87	1.	UMC	640.	1000.	690.	820.	710.	740.	530.
TOC	05 JAN 82	.1	MGL	1.0	1.0	1.0	1.0	4.0	1.0	1.0
TOC	05 JAN 82	.1	MGL	1.0	1.0	1.0	1.0	4.0	1.0	1.0
TOC	05 JAN 82	.1	MGL	1.0	1.0	1.0	1.0	4.0	1.0	1.0
TOC	05 JAN 82	.1	MGL	1.0	1.0	1.0	1.0	4.0	1.0	1.0
TOC	13 APR 82	.1	MGL	39.0	54.0	40.0	37.0	48.0	44.0	40.0
TOC	13 APR 82	.1	MGL	39.0	54.0	40.0	37.0	47.0	44.0	40.0

RUN DATE: 19 AUG 87

INSTALLATION: SENECA AD, NY

SITE: DEMOLITION GROUNDS

PARAMETER	SAMPLING DATE	DETECTION LIMIT	UNITS	SAMPLING SITES RESULTS B W5	W4	W6	W1	W3	W2	W7
TOC	13 APR 82	.1	MGL	40.0	54.0	42.0	37.0	47.0	44.0	40.0
TOC	13 APR 82	.1	MGL	39.0	55.0	43.0	37.0	48.0	44.0	40.0
TOC	29 JUN 82	.1	MGL	43.0	30.0	43.0	42.0	53.0	42.0	38.0
TOC	29 JUN 82	.1	MGL	42.0	30.0	41.0	40.0	53.0	42.0	39.0
TOC	29 JUN 82	.1	MGL	42.0	30.0	43.0	40.0	54.0	41.0	40.0
TOC	29 JUN 82	.1	MGL	42.0	30.0	43.0	42.0	54.0	43.0	38.0
TOC	28 SEP 82	.1	MGL	37.0	28.0	39.0	21.0	44.0	4.0	
TOC	28 SEP 82	.1	MGL	38.0	29.0	39.0	23.0	43.0	4.0	
TOC	28 SEP 82	.1	MGL	37.0	27.0	39.0	22.0	43.0	4.0	
TOC	28 SEP 82	.1	MGL	38.0	28.0	39.0	22.0	43.0	4.0	
TOC	08 FEB 83	.1	MGL	23.0	32.0	26.0	22.0	27.0	25.0	26.0
TOC	08 FEB 83	.1	MGL	23.0	33.0	27.0	22.0	26.0	25.0	26.0
TOC	08 FEB 83	.1	MGL	24.0	32.0	27.0	22.0	27.0	25.0	26.0
TOC	08 FEB 83	.1	MGL	23.0	33.0	27.0	22.0	27.0	25.0	26.0
TOC	09 AUG 83	.1	MGL	53.0	47.0	46.0		74.0	23.0	
TOC	09 AUG 83	.1	MGL	53.0	47.0	47.0		74.0	22.0	
TOC	09 AUG 83	.1	MGL	54.0	46.0	45.0		74.0	21.0	
TOC	09 AUG 83	.1	MGL	53.0	46.0	46.0		74.0	22.0	
TOC	14 FEB 84	.1	MGL	24.0	35.0	32.0	24.0	29.0	29.0	12.0
TOC	14 FEB 84	.1	MGL	23.0	36.0	33.0	24.0	29.0	29.0	11.0
TOC	14 FEB 84	.1	MGL	23.0	36.0	33.0	24.0	29.0	30.0	11.0
TOC	14 FEB 84	.1	MGL	24.0	35.0	32.0	24.0	29.0	29.0	11.0
TOC	18 SEP 84	.1	MGL	3.0	3.0	3.0	3.0	4.0	3.0	3.0
TOC	18 SEP 84	.1	MGL	3.0	4.0	3.0	3.0	4.0	3.0	4.0
TOC	18 SEP 84	.1	MGL	3.0	4.0	3.0	3.0	4.0	3.0	2.0
TOC	18 SEP 84	.1	MGL	3.0	4.0	3.0	3.0	5.0	4.0	3.0
TOC	20 MAR 85	.1	MGL		5.9	8.8	5.9	6.0	4.1	9.5
TOC	20 MAR 85	.1	MGL		5.7	8.8	6.1	6.0	4.0	9.6
TOC	20 MAR 85	.1	MGL		5.8	8.7	5.8	6.0	4.1	9.4
TOC	20 MAR 85	.1	MGL		5.7	8.8	5.9	6.0	4.1	9.5
TOC	13 SEP 85	.1	MGL	3.4		3.0	2.7	3.3	3.1	
TOC	13 SEP 85	.1	MGL	3.4		2.7	2.5	3.2	3.3	
TOC	13 SEP 85	.1	MGL	3.4		2.8	2.6	3.3	3.1	
TOC	13 SEP 85	.1	MGL	3.4		2.9	2.5	3.3	3.5	
TOC	18 MAR 86	.1	MGL	3.4	3.6	6.3	5.0	5.4	3.5	4.2
TOC	18 MAR 86	.1	MGL	3.4	3.5	6.3	5.0	5.1	3.5	4.2
TOC	18 MAR 86	.1	MGL	3.4	3.5	6.4	5.0	5.1	3.4	4.2
TOC	18 MAR 86	.1	MGL	3.4	3.5	6.2	5.2	5.2	3.6	4.2
TOC	16 SEP 86	.1	MGL	5.1	4.7	5.3	5.2	6.2	4.7	5.2
TOC	16 SEP 86	.1	MGL	5.0	4.7	5.4	5.4	6.2	4.9	5.1
TOC	16 SEP 86	.1	MGL	5.0	4.8	5.4	5.4	6.3	4.7	5.1

RUN DATE: 19 AUG 87

INSTALLATION: SENECA AD, NY

SITE: DEMOLITION GROUNDS

PARAMETER	SAMPLING DATE	DETECTION LIMIT	UNITS	SAMPLING SITES RESULTS B W5	W4	W6	W1	W3	W2	W7
TOC	16 SEP 86	.1	MGL	4.9	4.8	5.5	5.4	6.2	4.8	5.2
TOC	17 MAR 87	.1	MGL	5.0	3.8	3.7	2.3	5.6	4.0	3.6
TOC	17 MAR 87	.1	MGL	5.0	3.7	3.8	2.2	5.5	4.0	3.6
TOC	17 MAR 87	.1	MGL	4.9	3.6	3.7	2.2	5.5	3.9	3.5
TOC	17 MAR 87	.1	MGL	5.0	3.7	3.8	2.1	5.6	4.0	3.5
TOX	05 JAN 82	.010	MGL	ND	.060	.033	.016	.063	.048	.021
TOX	05 JAN 82	.010	MGL	ND	.050	.025	ND	.038	.059	.039
TOX	05 JAN 82	.010	MGL	ND	.050	.014	.019	.048	.016	.034
TOX	05 JAN 82	.010	MGL	.016	.052	.013	.016	.046	.056	.020
TOX	13 APR 82	.010	MGL	ND	ND	ND	ND	ND	ND	.014
TOX	13 APR 82	.010	MGL	ND	ND	ND	ND	ND	ND	ND
TOX	13 APR 82	.010	MGL	ND	ND	ND	ND	ND	ND	ND
TOX	13 APR 82	.010	MGL	ND	ND	.012	ND	.011	ND	.010
TOX	29 JUN 82	.010	MGL	ND	ND	ND	.017	.063	.068	.026
TOX	29 JUN 82	.010	MGL	.064	ND	ND	.076	ND	.039	.028
TOX	29 JUN 82	.010	MGL	.098	ND	.015	.070	.051	.026	.031
TOX	29 JUN 82	.010	MGL	.045	ND	ND	.066	ND	.082	.020
TOX	28 SEP 82	.010	MGL	.041		.130	.067	.096		
TOX	28 SEP 82	.010	MGL	ND		.080	ND	.069		
TOX	28 SEP 82	.010	MGL	ND		.095	.077	ND		
TOX	28 SEP 82	.010	MGL	ND		.095	.040	.062		
TOX	08 FEB 83	.010	MGL	.043	.030	.040	.039	.046	.017	.030
TOX	08 FEB 83	.010	MGL	.042	.047	.047	.028	.046	.033	.038
TOX	08 FEB 83	.010	MGL	.042	.041	.040	.044	.031	.039	.047
TOX	08 FEB 83	.010	MGL	.036	.041	.043	.041	.056	.038	.036
TOX	09 AUG 83	.010	MGL	.041	.040	.041		ND	ND	
TOX	09 AUG 83	.010	MGL	.036	.041	.036		ND	ND	
TOX	09 AUG 83	.010	MGL	.042	.038	.039		ND	ND	
TOX	09 AUG 83	.010	MGL	.040	.040	.036		ND	ND	
TOX	14 FEB 84	.010	MGL	.070	.064	ND	.037	.055	.064	ND
TOX	14 FEB 84	.010	MGL	.060	.074	ND	.035	.055	.030	.014
TOX	14 FEB 84	.010	MGL	.077	.041	ND	.036	.049	.044	.014
TOX	14 FEB 84	.010	MGL	.032	.062	ND	.039	.064	.041	.012
TOX	18 SEP 84	.010	MGL	.022	.016	ND	.015	.013	ND	.027
TOX	18 SEP 84	.010	MGL	.022	.018	.011	.025	.012	ND	.034
TOX	18 SEP 84	.010	MGL	.020	.016	ND	.013	ND	ND	.045
TOX	18 SEP 84	.010	MGL	.021	.026	.012	.013		ND	.045
TOX	20 MAR 85	.010	MGL		ND	ND	ND	ND	ND	.012
TOX	20 MAR 85	.010	MGL		ND	ND	ND	ND	ND	.013
TOX	20 MAR 85	.010	MGL		ND	ND	ND	ND	ND	.014
TOX	20 MAR 85	.010	MGL		ND	ND	ND	ND	ND	.014

RUN DATE: 19 AUG 87

INSTALLATION: SENECA AD, NY

SITE: DEMOLITION GROUNDS

PARAMETER	SAMPLING DATE	DETECTION LIMIT	UNITS	SAMPLING SITES RESULTS B						
				W5	W4	W6	W1	W3	W2	W7
TOX	13 SEP 85	.010	MGL	ND		ND	ND	ND	ND	
TOX	13 SEP 85	.010	MGL	ND		ND	ND	ND	ND	
TOX	13 SEP 85	.010	MGL	ND		ND	ND	ND	ND	
TOX	13 SEP 85	.010	MGL	ND		ND	ND	ND	ND	
TOX	18 MAR 86	.010	MGL	ND	ND	.010	ND	ND	ND	ND
TOX	18 MAR 86	.010	MGL	ND	ND	ND	ND	ND	ND	ND
TOX	18 MAR 86	.010	MGL	ND	ND	ND	ND	ND	ND	ND
TOX	18 MAR 86	.010	MGL	ND	ND	ND	ND	ND	ND	ND
TOX	16 SEP 86	.010	MGL	ND	ND	ND	ND	ND	ND	ND
TOX	16 SEP 86	.010	MGL	ND	ND	ND	ND	ND	ND	ND
TOX	16 SEP 86	.010	MGL	ND	ND	ND	ND	ND	ND	ND
TOX	16 SEP 86	.010	MGL	ND	ND	ND	ND	ND	ND	ND
TOX	17 MAR 87	.010	MGL	ND	ND	ND	ND	ND	ND	ND
TOX	17 MAR 87	.010	MGL	ND	ND	ND	ND	ND	ND	ND
TOX	17 MAR 87	.010	MGL	ND	ND	ND	ND	ND	ND	ND
TOX	17 MAR 87	.010	MGL	ND	ND	ND	ND	ND	ND	ND
TDS	29 JUN 82	1.	MGL	465.	431.	406.	672.#	704.#	698.#	382.
2,4,6-TNT	27 JUN 84	.001	MGL	ND	ND	ND	ND	ND	ND	ND
2,4,6-TNT	18 SEP 84	.001	MGL	ND	ND	ND	ND	ND	ND	ND
2,4,6-TNT	20 MAR 85	.001	MGL		ND	ND	ND	ND	ND	ND
2,4,6-TNT	13 SEP 85	.001	MGL	ND		ND	ND	ND	ND	
2,4,6-TNT	18 MAR 86	.001	MGL	ND	ND	ND	ND	ND	ND	ND
2,4,6-TNT	16 SEP 86	.001	MGL	ND	ND	ND	ND	ND	ND	ND
2,4,6-TNT	17 MAR 87	.001	MGL	ND	ND	ND	ND	ND	ND	ND
2,4-DNT	27 JUN 84	.001	MGL	ND	ND	ND	ND	ND	ND	ND
2,4-DNT	18 SEP 84	.001	MGL	ND	ND	ND	ND	ND	ND	ND
2,4-DNT	20 MAR 85	.001	MGL		ND	ND	ND	ND	ND	ND
2,4-DNT	13 SEP 85	.001	MGL	ND		ND	ND	ND	ND	
2,4-DNT	18 MAR 86	.001	MGL	ND	ND	ND	ND	ND	ND	ND
2,4-DNT	16 SEP 86	.001	MGL	ND	ND	ND	ND	ND	ND	ND
2,4-DNT	17 MAR 87	.001	MGL	ND	ND	ND	ND	ND	ND	ND
2,6-DNT	27 JUN 84	.001	MGL	ND	ND	ND	ND	ND	ND	ND
2,6-DNT	18 SEP 84	.001	MGL	ND	ND	ND	ND	ND	ND	ND
2,6-DNT	20 MAR 85	.001	MGL		ND	ND	ND	ND	ND	ND
2,6-DNT	13 SEP 85	.001	MGL	ND		ND	ND	ND	ND	
2,6-DNT	18 MAR 86	.001	MGL	ND	ND	ND	ND	ND	ND	ND
2,6-DNT	16 SEP 86	.001	MGL	ND	ND	ND	ND	ND	ND	ND
2,6-DNT	17 MAR 87	.001	MGL	ND	ND	ND	ND	ND	ND	ND
RDX	27 JUN 84	.030	MGL	ND	ND	ND	ND	ND	ND	ND
RDX	18 SEP 84	.030	MGL	ND	ND	ND	ND	ND	ND	ND
RDX	20 MAR 85	.030	MGL		ND	ND	ND	ND	ND	ND

RUN DATE: 19 AUG 87

INSTALLATION: SENECA AD, NY

SITE: DEMOLITION GROUNDS

PARAMETER	SAMPLING DATE	DETECTION LIMIT	UNITS	SAMPLING SITES RESULTS B						
				W5	W4	W6	W1	W3	W2	W7
RDX	13 SEP 85	.030	MGL	ND		ND	ND	ND	ND	
RDX	18 MAR 86	.030	MGL	ND	ND	ND	ND	ND	ND	ND
RDX	16 SEP 86	.030	MGL	ND	ND	ND	ND	ND	ND	ND
RDX	17 MAR 87	.030	MGL	ND	ND	ND	ND	ND	ND	ND
HMX	27 JUN 84	.100	MGL	ND	ND	ND	ND	ND	ND	ND
HMX	18 SEP 84	.100	MGL	ND	ND	ND	ND	ND	ND	ND
HMX	20 MAR 85	.100	MGL		ND	ND	ND	ND	ND	ND
HMX	13 SEP 85	.100	MGL	ND		ND	ND	ND	ND	
HMX	18 MAR 86	.100	MGL	ND	ND	ND	ND	ND	ND	ND
HMX	16 SEP 86	.100	MGL	ND.	ND	ND	ND	ND	ND	ND
HMX	17 MAR 87	.100	MGL	ND	ND	ND	ND	ND	ND	ND
TETRYL	27 JUN 84	.010	MGL	ND	ND	ND	ND	ND	ND	ND
TETRYL	18 SEP 84	.010	MGL	ND	ND	ND	ND	ND	ND	ND
TETRYL	20 MAR 85	.010	MGL		ND	ND	ND	ND	ND	ND
TETRYL	13 SEP 85	.010	MGL	ND		ND	ND	ND	ND	
TETRYL	18 MAR 86	.005	MGL	ND	ND	ND	ND	ND	ND	ND
TETRYL	16 SEP 86	.010	MGL	ND	ND	ND	ND	ND	ND	ND
TETRYL	17 MAR 87	.010	MGL	ND	ND	ND	ND	ND	ND	ND

RUN DATE: 19 AUG 87

INSTALLATION: SENECA AD, NY SITE: DEMOLITION GROUNDS

LEGEND
NOTES: ALL METALS AND OTHER PARAMETERS WHERE APPROPRIATE ARE ON A DISSOLVED (FILTERED) BASIS UNLESS OTHERWISE NOTED. DETECTION LIMITS SHOWN ARE NORMAL LEVELS; ACTUAL LIMITS MAY VARY IN ENVIRONMENTAL SAMPLES. ANALYTICAL RESULTS ARE ACCURATE TO EITHER 2 OR 3 SIGNIFICANT FIGURES.
B UPGRADIENT SITE
VALUE EXCEEDS A NATIONAL SECONDARY DRINKING WATER REGULATION CRITERIA
& VALUE EXCEEDS A STATE WATER QUALITY STANDARD OR CRITERIA

MGL - MILLIGRAMS/LITER
UGL - MICROGRAMS/LITER
PCL - PICOCURIES/LITER
UMC - MICROMHOS/CENTIMETER
NTU - NEPHELOMETRIC TURBIDITY UNITS
TON - THRESHOLD ODOR NUMBER
TDN - TASTE DILUTION INDEX NUMBER
CU - COLOR UNITS
PHM - PER 100 MILLILITERS

Interim Final Rpt, Ground-Water Contamination Surv No. 38-26-0868-88, 27-31 Jul 87

23. MAP LOCATION/SITE NUMBER. SEAD-24.

a. Unit Name. Abandoned Powder Burning Pit.

b. Unit Characteristics.

(1) Unit Type. Powder burning area.

(2) General Dimensions. U-shaped 4-foot high berm approximately 150-feet across and 325-feet long. An adjacent shale covered area which supports an aspen stand may also have been used.

(3) Approximate Dates of Usage. 1940's to 1950's.

(4) Operating Practices. Unknown.

(5) Present Condition and Status. Abandoned. Grasses growing in area inside berm.

c. Waste Characteristics.

(1) Specific Wastes Disposed. Black powder, M10 and M6 solid propellants, probably explosives-contaminated trash.

(2) Physical and Chemical Characteristics. Explosives compounds are the primary constituents of concern.

(3) Migration and Dispersal Characteristics. Explosives compounds may migrate in the ground water.

(4) Toxicological Characteristics. Army-suggested drinking water limits are available for 2,4,6-TNT and RDX.

d. Migration Pathways. Soil, ground water.

e. Evidence of Release. None observed.

f. Exposure Potential. Moderate.

g. Recommendations for Sampling. Soils samples and ground-water monitoring wells.

h. References. 6, 9.

Interim Final Rpt, Ground-Water Contamination Surv No. 38-26-0868-88, 27-31 Jul 87

24. MAP LOCATION/SITE NUMBER. SEAD-25.

a. Unit Name. Fire Training and Demonstration Pad.

b. Unit Characteristics.

(1) Unit Type. Fire training pad.

(2) General Dimensions. 20 feet in diameter.

(3) Approximate Dates of Usage. Since late 1960's.

(4) Operating Practices. At one time, the pad was used for fire training, but it is now used once or twice a year for fire fighting demonstrations.

(5) Present Condition and Status. Grass-covered.

c. Waste Characteristics.

(1) Specific Wastes Disposed. Water-contaminated fuels and occasionally used oil.

(2) Physical and Chemical Characteristics. Breakdown products of petroleum products include benzene, xylene, and toluene. Lead may also be a constituent of concern if leaded fuels were used (very likely).

(3) Migration and Dispersal Characteristics. The petroleum breakdown products and heavy metals may migrate in the ground water.

(4) Toxicological Characteristics. Drinking water standards and recommended maximum contaminant levels are available for the constituents of concern.

d. Migration Pathways. Air, soil, ground water.

e. Evidence of Release. None observed.

f. Exposure Potential. Low.

g. Recommendations for Sampling. Soil samples.

h. References. 9, 11.

25. MAP LOCATION/SITE NUMBER. SEAD-26.

a. Unit Name. Fire Training Pit.

b. Unit Characteristics.

(1) Unit Type. Fire training pit.

(2) Design Features. The pit is approximately 40 feet in diameter, and is lined with bentonite.

(3) Approximate Dates of Usage. 1977 to present. The bentonite liner was installed in 1982 or 1983.

(4) Operating Practices. Various flammable materials are floated on water, ignited, and extinguished.

(5) Present Condition and Status. Active.

c. Waste Characteristics.

(1) Specific Wastes Disposed. Water-contaminated fuels and occasionally used oil.

(2) Physical and Chemical Characteristics. Breakdown products of petroleum products include benzene, xylene, and toluene. Lead may also be a constituent of concern if leaded fuels were used (very likely).

(3) Migration and Dispersal Characteristics. The petroleum breakdown products and heavy metals may migrate in the ground water.

(4) Toxicological Characteristics. Drinking water standards and recommended maximum contaminant levels are available for the constituents of concern.

d. Migration Pathways. Air, soil, ground water.

e. Evidence of Release. None observed.

f. Exposure Potential. Low.

g. Recommendations for Sampling. Soil samples.

h. References. 9, 11.

26. MAP LOCATION/SITE NUMBER. SEAD-27.

a. Unit Name. Bldg 360 - Steam Cleaning Waste Tank.

b. Unit Characteristics.

(1) Unit Type. Open top in-building tank.

(2) Design Features. Open top concrete tank with a grate over the top. The dimensions are 35-feet long by 12-feet wide, and the deepest part is 4 feet. The capacity is 4,500 gallons when filled to near the top or 1,100 gallons to the 2-foot freeboard mark.

(3) Approximate Dates of Usage. 1976 to present.

(4) Operating Practices. When a piece of industrial plant equipment positioned over the grate is steam cleaned, the wastewater drains into the open tank. The waste is pumped out and disposed by a hazardous waste disposal contractor.

(5) Present Condition and Status. At the time of the visit, the tank was nearly filled. The tank is scheduled to be closed in July 1988. A machine-cleaning facility with hand-sprayed solvent units followed by bulk storage and reuse will replace the present operation. The used solvent will be periodically replaced with fresh solvent and recycled by an offpost contractor.

c. Waste Characteristics.

(1) Specific Wastes Disposed. Wastewater from steam cleaning industrial plant equipment.

(2) Physical and Chemical Characteristics. The wastewater has been tested, and is high in lead.

(3) Migration and Dispersal Characteristics. Dissolved lead can migrate in the ground water.

(4) Toxicological Characteristics. The National Primary Drinking Water Regulations standard for lead is 0.05 mg/L.

d. Migration Pathways. If a leak developed in the tank, the soil and ground water would be affected.

e. Evidence of Release. None observed.

f. Exposure Potential. Very low, assuming that the tank is intact.

g. Recommendations for Sampling. None.

Interim Final Rpt, Ground-Water Contamination Surv No. 38-26-0868-88, 27-31 Jul 87

27. MAP LOCATION/SITE NUMBER. SEAD-28, SEAD-29, SEAD-30, SEAD-31, SEAD-32, SEAD-33, SEAD-34.

a. Unit Name. Waste Oil Tanks - Bldg 360, Bldg 732, Bldg 118, Bldg 117, Bldg 718, Bldg 121, Bldg 319.

b. Unit Characteristics.

(1) Unit Type. Underground waste oil storage tanks.

(2) Design Features.

TABLE C-3. Design Features of Underground Waste Oil Storage Tanks

SITE NUMBER	BLDG NUMBER	TANK ID	YEAR INSTALLED	CAPACITY (gallons)	TANK MATERIAL
SEAD-28	T-355	A	1981	2,130	fiberglass
		B	1981	2,130	fiberglass
SEAD-29	732		1981	550	fiberglass
SEAD-30	118		1981	550	fiberglass
SEAD-31	117		1981	2,130	fiberglass
SEAD-32	718	A	1956	40,000	steel
		B	1978	20,000	steel
SEAD-33	121		1943	30,000	steel
SEAD-34	319	A	1951	30,000	steel
		B	1951	20,000	steel

(3) Present Condition and Status. In use.

c. Waste Characteristics.

(1) Specific Wastes Disposed. Waste oil.

(2) Migration and Dispersal Characteristics. Leakage of any tank would result in the waste oil floating on top of the ground-water table.

d. Migration Pathways. Soil, ground water.

e. Evidence of Release. None observed.

f. Exposure Potential. Moderate.

g. Recommendations for Sampling. Test older steel tanks for leakage.

28. MAP LOCATION/SITE NUMBER. SEAD-35, SEAD-36, SEAD-37.

a. Unit Name. Waste Oil-Burning Boilers - Bldg 718, Bldg 121, Bldg 319.

b. Unit Characteristics.

(1) Unit Type. Waste oil-burning boilers.

(2) Design Features.

TABLE C-4. Design Features of Waste Oil-burning Boilers

SITE NUMBER	BLDG NUMBER	BOILER NUMBER	CAPACITY RATING (MBtu/hr)	DATE INSTALLED	COMBUSTION RATE (gal/hr)
SEAD-35	718	A	10.0	1955	15.5
		B	10.0	1955	15.5
		C	10.0	1955	15.5
SEAD-36	121	A	6.6	1969	10.6
		B	6.6	1969	10.6
SEAD-37	319	A	12.0	1970	32.9
		B	16.1	1979	32.9

(3) Present Condition and Status. All boilers are functional except one at Bldg 121.

c. Waste Characteristics.

(1) Specific Wastes Disposed. Waste oil is burned as fuel for providing space heating and hot water production.

(2) Physical and Chemical Characteristics. The waste oil is sometimes high in lead content.

d. Migration Pathways. Air.

e. Evidence of Release. Permitted air emissions. No air pollution devices.

f. Exposure Potential. Moderate.

g. Recommendations for Sampling. None.

h. References. 10, 16, 22.

Interim Final Rpt, Ground-Water Contamination Surv No. 38-26-0868-88, 27-31 Jul 87

29. MAP LOCATION/SITE NUMBER. SEAD-38, SEAD-39, SEAD-40, SEAD-41.

a. Unit Name. Boiler Plant Blowdown Leach Pits - Bldg 2079, Bldg 121, Bldg 319, Bldg 718.

b. Unit Characteristics.

(1) Unit Type. Leach pits.

(2) Design Features. Unknown.

(3) Approximate Dates of Usage. From the time the boilers were used until the time when the blowdown points were linked to the sanitary sewer system (1979 or 1980).

(4) Operating Practices. The boilers discharged 400 to 800 gallons per day at the rate of three times every 24 hours. The flow drained partly in the ground and partly to nearby drainage ditches.

(5) Present Condition and Status. All blowdown points are currently connected to the sanitary sewer system. The old leaching areas were not visible.

c. Waste Characteristics.

(1) Specific Wastes Disposed. The boiler blowdown water probably contained tannins, caustic soda (sodium hydroxide), and sodium phosphate.

(2) Physical and Chemical Characteristics. Tannins are plant-derived phenolic compounds.

(3) Migration and Dispersal Characteristics. Any of the three constituents may migrate in the ground water.

(4) Toxicological Characteristics. Some tannins are carcinogenic by ingestion.

d. Migration Pathways. Soil, ground water.

e. Evidence of Release. None observed.

f. Exposure Potential. Low.

g. Recommendations for Sampling. None.

h. References. 6, 7, 11, 22.

APPENDIX D

REFERENCES

1. Public Law 94-580, 21 October 1976, Resource Conservation and Recovery Act, as amended by Public Law 98-616, 8 November 1984, Hazardous and Solid Waste Amendments (HSWA) of 1984.

2. Title 40, Code of Federal Regulations (CFR), 1987 rev, Section 264.101, Corrective Action for Solid Waste Management Units.

3. Proposed Rule, Contents of Part B: General Requirements, 52 Federal Register (FR) 45799, 1 December 1987.

4. Army Regulation 200-1, 15 June 1982, Environmental Protection and Enhancement.

5. Letter, U.S. Army Environmental Health Laboratory, MEDEI-E, 16 August 1960, subject: Disposal of IRFNA by Soil Absorption, Seneca Ordnance Depot (transmittal letter for Report of Sanitary Engineering Study No. 3642E4-60).

6. Letter, USAEHA, USAEHA-ES, 23 August 1971, subject: Water Quality Engineering Survey No. 24-023-71, Seneca Army Depot, Romulus, New York, 26-30 April 1971.

7. Letter, USAEHA, USAEHA-EW, 22 February 1974, subject: Water Quality Monitoring Consultation No. 24-024-74, Seneca Army Depot, Romulus, New York, 11-14 November 1973.

8. Letter, USAEHA, HSE-ES, 8 December 1975, subject: Solid Waste Survey No. 26-006-76, Seneca Army Depot, Romulus, New York, 29 September - 1 October 1975.

9. Installation Assessment of Seneca Army Depot, Report No. 157, U.S. Army Toxic and Hazardous Materials Agency (USATHAMA), January 1980.

10. Installation Environmental Assessment for Seneca Army Depot, prepared by Seneca Army Depot, 1 May 1980.

11. Letter, USAEHA, HSE-EW-S/WP, 14 October 1980, subject: Potable/ Recreational Water Quality Survey No. 31-24-0225-81 and Wastewater Engineering Survey No. 32-24-0226-81, Seneca Army Depot, Romulus, NY, 28 April - 2 May 1980.

12. Letter, Seneca Army Depot, SDSSE-AD, 13 November 1980, subject: Submittal of EPA Forms 3510-1 and 3510-3 for interim status to treat, store, or dispose of hazardous wastes.

Interim Final Rpt, Ground-Water Contamination Surv No. 38-26-0868-88, 27-31 Jul 87

13. Letter, USAEHA, HSE-EW-A/WP, 14 July 1981, subject: Army Pollution Abatement Program Study No. D1671-W, Water Quality Engineering Special Study, Innovative Wetlands Wastewater Treatment Project, Seneca Army Depot, Romulus, NY, 21 July -1 August 1980 (USAEHA Control No. 81-24-8823-81).

14. Letter, USAEHA, HSE-ES/WP, 13 August 1981, subject: Final Report, Army Pollution Abatement Program Study No. D-1031-W, Landfill Leachate Study, Seneca Army Depot, Romulus, New York, 23 July - 3 August 1979 (USAEHA Control No. 81-26-8020-81).

15. Letter, USAEHA, HSE-EW/WP, 12 February 1982, subject: Phase 1, Water Quality Engineering Special Study No. 32-24-8832-82, APAP Compliance Test for MCA Project No. 60, Upgrade of Sewage Treatment Plant No. 715, Seneca Army Depot, Romulus, NY, 26-28 October 1981.

16. Letter, USAEHA, HSHB-MN-E, 5 November 1982, subject: Air Pollution Status and Evaluation Survey No. 44-61-0104-83, Seneca Army Depot, Romulus, New York, 23-26 August 1982.

17. Letter, USAEHA, HSHB-EW-A/WP, 3 December 1982, subject: Water Quality Engineering Special Study No. 32-24-8861-83, Innovative Wetlands Wastewater Treatment Project, Two-Year Evaluation, Seneca Army Depot, Romulus, NY, 19-30 July 1982.

18. Letter, USATHAMA, DRXTH-AS, 3 March 1983, subject: Installation Assessment of Seneca Army Depot, NY, Report No. 157.

19. Letter, USAEHA, HSHB-EW-M/WP, 12 July 1983, subject: Final Phase, Water Quality Engineering Special Study No. 32-24-8832-83, Compliance Test for MCA Project No. 60, Upgrade of Sewage Treatment Plant No. 715, Seneca Army Depot, Romulus, New York, 8-17 March 1983.

20. Draft Resource Conservation and Recovery Act Part B Permit Application, U.S. Army Seneca Army Depot, Romulus, New York, prepared for US Army Engineers Division, Huntsville by Fred C. Hart Associates, Inc., May 1984.

21. Letter, USAEHA, HSHB-ES-G, 28 October 1985, subject: Ground-Water Monitoring Study No. 38-26-0457-86, AMC Open Burning/Open Detonation Facilities, February 1984 - March 1985.

22. Audit Report, Seneca Army Depot (SEAD), Romulus, New York, Document No. HNDSP 86-166-ED-PM, prepared by PRC Engineering for U.S. Army Corps of Engineers, Huntsville Division, February 1987.

23. Memorandum, USAEHA, HSHB-ME-SE, 25 April 1988, subject: Geohydrologic Study No. 38-26-0313-88, Seneca Army Depot, Romulus, New York, 13-21 October 1987.