104-39

SLUDGE PILES
SEAD 5,59,71

PRESENTED BY
RANDY BATTAGLIA

Sludge Piles Presentation

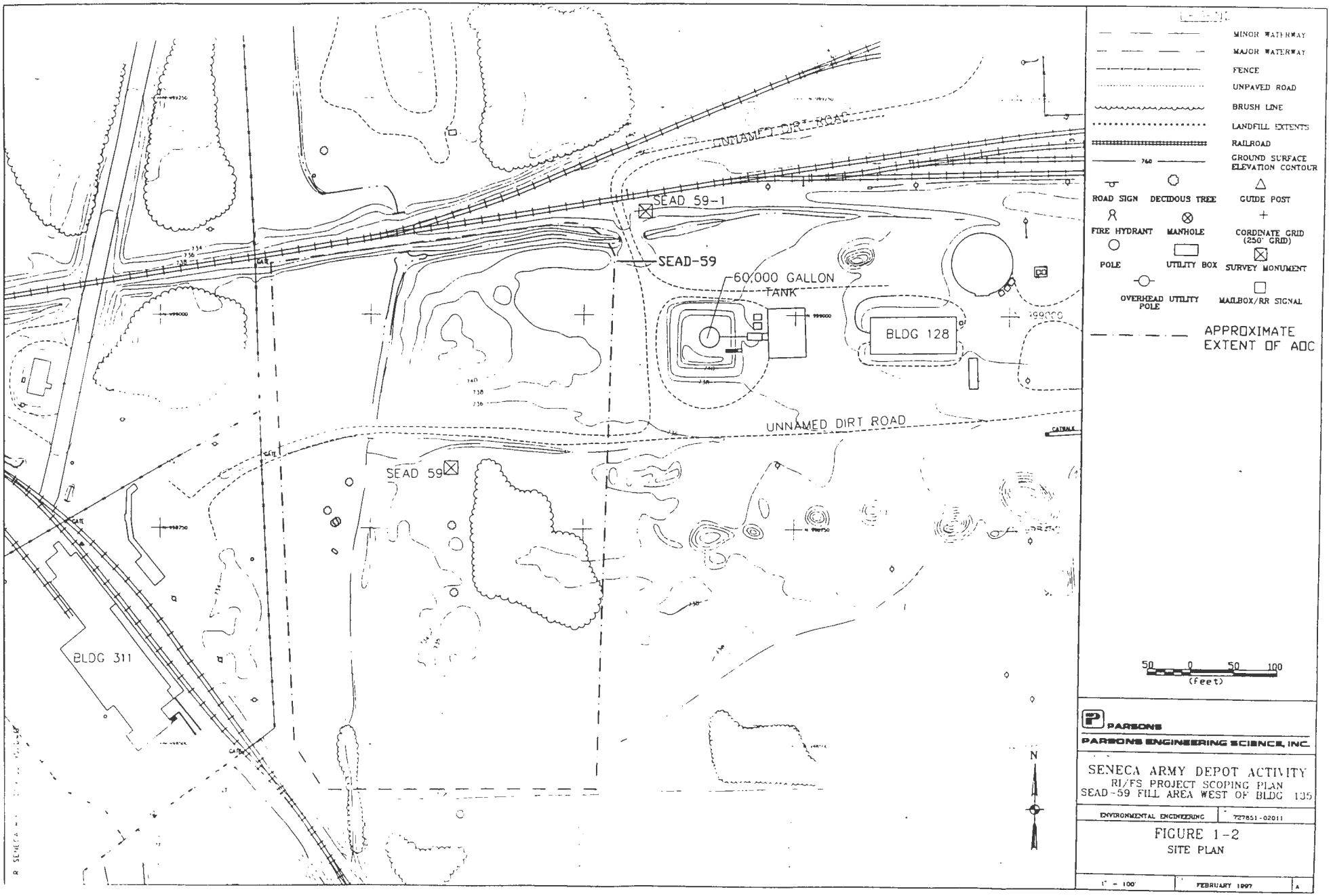
- Site Background
- Project Schedule
- Site Characterization
- Reuse Implications
- Risk Assessment
- Technology Selection
- Cost
- Initiatives to Reduce Cost
- Summary

Site Background
Sludge Piles

Site Background
Sludge Piles

- Various Disposal Activities from Depot Maintenance Activities
- High Metals- Sewage Treatment Sludge
- Paint/Solvent Disposal Pit
- Unknown Buried Drums Found
- Located in PID Area

Sludge Piles, Seneca Army Depot



PARSONS

PARSONS ENGINEERING SCIENCE, INC.

SENECA ARMY DEPOT ACTIVITY

RI/FS PROJECT SCOPING PLAN

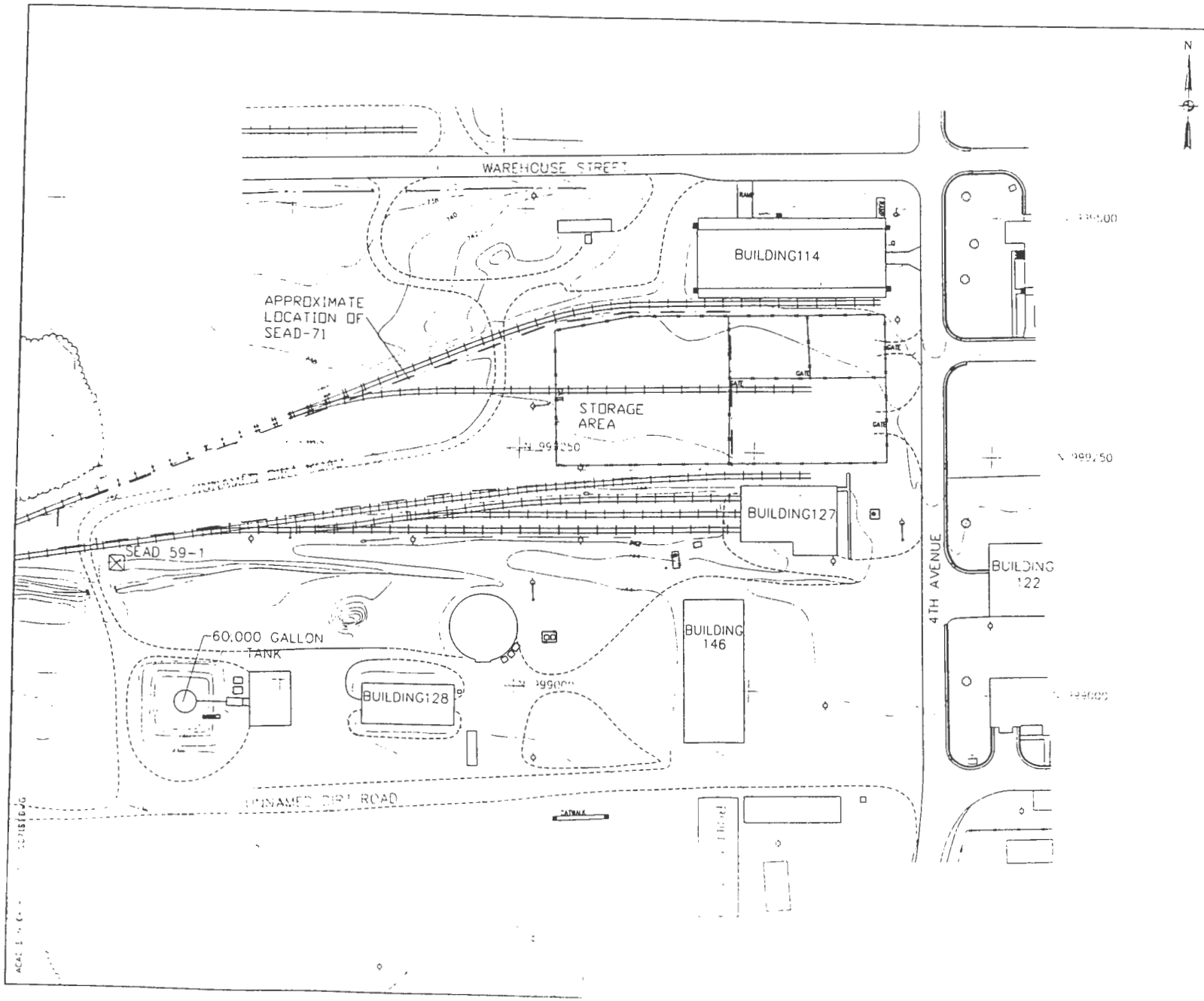
SEAD-59 FILL AREA WEST OF BLDG 135

ENVIRONMENTAL ENGINEERING	727851-02011

FIGURE 1-2

SITE PLAN

1" = 100'	FEBRUARY 1997	A



PARSONS

PARSONS ENGINEERING SCIENCE, INC.

SENECA ARMY DEPOT ACTIVITY

RI/FS PROJECT SCOPING PLAN

SEAD-71 ALLEGED PAINT DISPOSAL AREA

ENVIRONMENTAL ENGINEERING	727851-02011

FIGURE 1-3

SEAD-71

SITE PLAN

Project Schedule
Sludge Piles

Project Schedule
Sludge Piles

● RI Submission	25 Jan 98
● FS Submission	08 Aug 98
● PRAP Submission	20 Jan 99
● ROD	04 Jul 99
● RD Start	FY 99
● RD Completed	FY 00
● RA Start	FY 00

SEAD-59, Fill Area West of Building 135 Milestones

- Listed as a SWMU, SWMU Classification Report September, 1994
- Combined as 15 SWMU ESI Workplan, Final Issued January, 1995
- ESI Report for 7 Low Priority SWMUs, Jan. 1996
- RI/FS Recommended (Combined with SEAD-71)
- Draft-final Scoping Plan for RI/FS Issued, February 24, 1997
- Final Regulatory Comments Pending
- RI Fieldwork Anticipated Summer 1997

Site Characterization
Sludge Piles

Sludge Piles, Seneca Army Depot

Site Characterization
Sludge Piles

- ESI's Determined:
  Phenol, TPH's, Metals in GW
  Metals, Chlorinated Organics in Soils
- Contaminants Found in Soils, Groundwater
- Metals, Methylene Chloride, TCE in Soils
- Groundwater Impacted by Al, Fe, Mg, Tl, TPH's, BTEX, PAH's, Phenol
- Burial Pits Found

Summary Soil Statistics Data
SEAD-5 Sewage Sludge Piles

COMPOUND	MAX. (mg/Kg)	MEAN (mg/Kg)	NYSDEC SOIL TAGM CRITERIA (mg/Kg)	NUMBER OF TIMES DETECTED	NUMBER OF TIMES ABOVE TAGM
Volatiles					
None Exceeded the TAGM Criteria					
Semivolatiles					
4-Chloroanaline	0.53	0.224	0.220	4	2
Benzo(a)anthracene	2.2	1.02	0.224	5	3
Benzo(a)pyrene	2.5	0.98	0.061	6	5
Benzo(b)fluoranthene	2.3	0.93	1.1	6	2
Benzo(k)fluoranthene	2.3	0.98	1.1	5	2
Chrysene	2.6	2.6	0.4	6	3
Dibenz(a,h)anthracene	1.0	0.25	0.014	2	2
PCBs/Pesticides					
None Exceeded the TAGM Criteria					
Metals					
Antimony	9.1	5.0	3.6	5	3
Cadmuim	2	0.69	1	6	2
Copper	285	109	25	6	5
Lead	60	41	22	6	5
Mercury	1.6	0.61	0.1	6	4
Zinc	304	167	82	6	4

Site Geology at SEAD-59

- Soil Fill with Building Debris, Ranging from 2 to 10 feet Thick
- Glacial Till Thicknesses range from 3 feet to 7 feet
- Weathered Shale Thicknesses range from 0 to 3 feet
- Depth to Competent Shale ranges from 8 to 20 feet below ground surface

Expanded Site Investigation at SEAD-59, Field Tasks Summary

- Geophysical Survey
  - Seismic Refraction Lines (4-100 lf)
  - EM-31 Electromagnetic Survey (7000 lf)
  - GPR Survey (3000 lf)
- 5 Test Pits
- 6 Groundwater Monitoring Wells
  - 3 Groundwater Wells for SEAD-59 and 3 from SEAD-5, next to SEAD-59
- 5 Soil Borings

Surface and Subsurface Soil Sampling Summary at SEAD-59

- VOCs:
  - BTEX above TAGM Criteria
- Low Levels of PCBs/Pesticides & Herbicides
- Semi-VOCs :
  - 8 PAH Compounds above TAGM Criteria
- Metals:
  - Sb, Cd, Pb, Hg, Zn above TAGM Criteria

Summary Soil Statistics Data
SEAD-59 Fill Area West of Building 135

COMPOUND	MAX. (mg/Kg)	MEAN (mg/Kg)	NYSDEC SOIL TAGM CRITERIA (mg/Kg)	NUMBER OF TIMES DETECTED	NUMBER OF TIMES ABOVE TAGM
Volatiles					
1,1,1, Trichloroethane	3.00	0.151	0.800	24	1
1,1,2,2 Tetrachlorethane	3.00	0.151	0.600	24	1
1,1 Dichloroethane	3.00	0.151	0.200	24	2
1,1 Dichloroethene	3.00	0.151	0.400	24	1
1,2 Dichloroethane	3.00	0.151	0.100	24	3
Carbon Tetrachloride	3.00	0.151	0.600	24	1
Chlorobenzene	3.00	0.151	1.700	24	1
Chloroethane	3.00	0.151	1.900	24	1
Methylene Chloride	3.00	0.151	0.100	24	3
Tetrachloroethene	3.00	0.151	1.400	24	1
Trichloroethene	3.00	0.151	0.700	24	1
Carbon Disulfide	3.00	0.151	2.700	24	1
Benzene	0.59	0.045	0.060	24	3
Ethylbenzene	26.0	1.109	5.500	24	1
Toluene	83.0	3.46	1.500	24	1
Xylene (total)	100.0	4.18	1.200	24	1
Semivolatiles					
Phenol	0.53	0.224	0.030	24	22
1,3-Dichlorobenzene	9.8	1.14	1.6	24	3
2-Chlorophenol	9.8	1.14	0.800	24	5

PCBs/Pesticides

None Exceeded the TAGM Criteria

Metals

None Exceeded the TAGM Criteria

Groundwater Sampling Summary for SEAD-59

- One Round of Sampling
- No VOCs Detected
- Semi-VOCs :
  - Phenol detected twice once at or and once at 2ug/L; GA Criteria is 1 ug/L
- No PCBs or Pesticides
- Metals:
  - Al, Fe, Mn, Na and Tl above GA Criteria

SEAD-71, Fill Area West of Building 135 Milestones

- Listed as a SWMU, SWMU Classification Report September, 1994
- Combined as 15 SWMU ESI Workplan, Final Issued January, 1995
- ESI Report for 8 Moderately Low Priority SWMUs, May 1996
- RI/FS Recommended (Combined with SEAD-59)
- Draft-final Scoping Plan for RI/FS Issued, February 24, 1997
- Final Regulatory Comments Pending
- RI Fieldwork Anticipated Summer 1997

Site Geology at SEAD-71

- Area is 350 by 100 ft. (0.8 acre)
- Glacial Till Thicknesses range from 5 feet to 8 feet
- Weathered Shale Thicknesses range from 0.5 to 2 feet
- Depth to Competent Shale ranges from 5 to 8 feet below ground surface

Expanded Site Investigation at SEAD-71, Field Tasks Summary

- Geophysical Survey
  - Seismic Refraction Lines (4-100 lf)
  - EM-31 Electromagnetic Survey (1400 lf)
  - GPR Survey (2700 lf)
- 2 Test Pits
- 3 Groundwater Monitoring Wells

Surface and Subsurface Soil Sampling Summary at SEAD-71

- VOCs:
  - Low Levels of TCE and TCA; Below TAGM Criteria
- Low Levels of PCBs/Pesticides & Herbicides
- Semi-VOCs :
  - 10 PAH Compounds above TAGM Criteria
- Metals:
  - 13 metals slightly above TAGM Criteria
  - Pb detected at twice the TAGM Criteria

Summary Soil Statistics Data
SEAD-71 Alleged Paint Disposal Area

COMPOUND	MAX. (mg/Kg)	MEAN (mg/Kg)	NYSDEC SOIL TAGM CRITERIA (mg/Kg)	NUMBER OF TIMES DETECTED	NUMBER OF TIMES ABOVE TAGM
Volatiles					
None Exceeded the TAGM Criteria					
Semivolatiles					
Benzo(a)anthracene	37.0	5.68	0.224	7	5
Benzo(a)pyrene	22.0	3.49	0.061	7	7
Benzo(b)fluoranthene	26.0	4.15	1.1	7	1
Benzo(k)fluoranthene	15.0	2.43	1.1	7	1
Chrysene	36.0	5.58	0.4	7	4
Dibenz(a,h)anthracene	9.8	1.77	0.014	6	6
Indeno (1,2,3-cd)pyrene	12.0	1.957	3.200	7	1
Phenanthrene	66.0	8.69	50.0	8	1
Pyrene	63.0	8.62	50.0	8	1
PCBs/Pesticides					
None Exceeded the TAGM Criteria					
Metals					
Aluminum	18,000	12,774	14,592	8	2
Arsenic	7.8	5.6	7.5	8	2
Beryllium	0.88	0.58	0.73	8	1
Chromium	25.8	18.8	22.1	8	1
Copper	37.5	26.1	25	8	4
Lead	96.9	35.7	22	8	4
Mercury	0.15	0.05	0.1	8	1
Nickel	42.5	30.3	33.6	8	3
Zinc	128	83.0	82.5	8	3

Groundwater Sampling Summary for SEAD-71

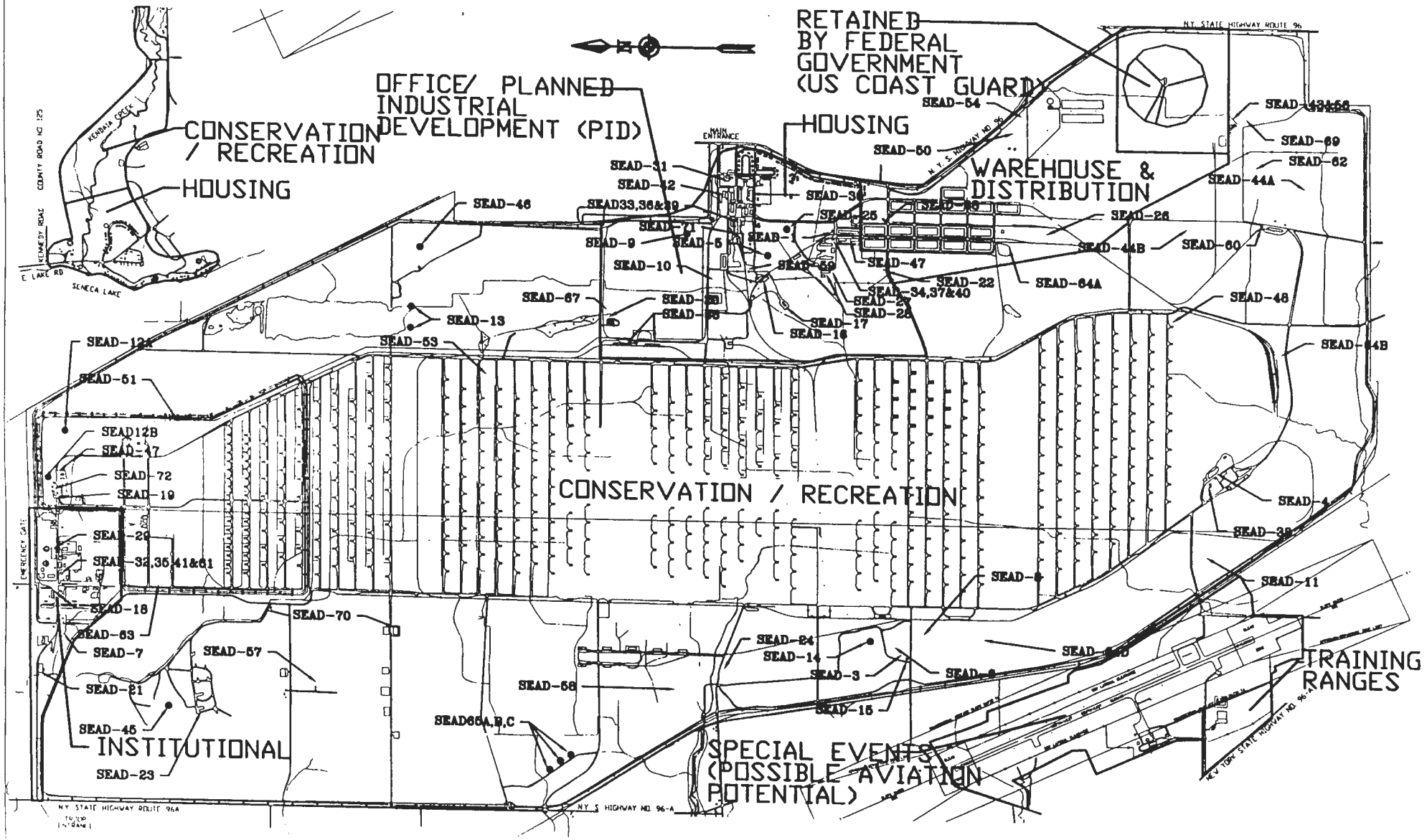
- One Round of Sampling
- No VOCs Detected
- No Semi-VOCs Detected
- No PCBs or Pesticides
- Metals:
  - Al, Fe, Pb, Mn and Tl above GA Criteria

Reuse Implications
Sludge Piles

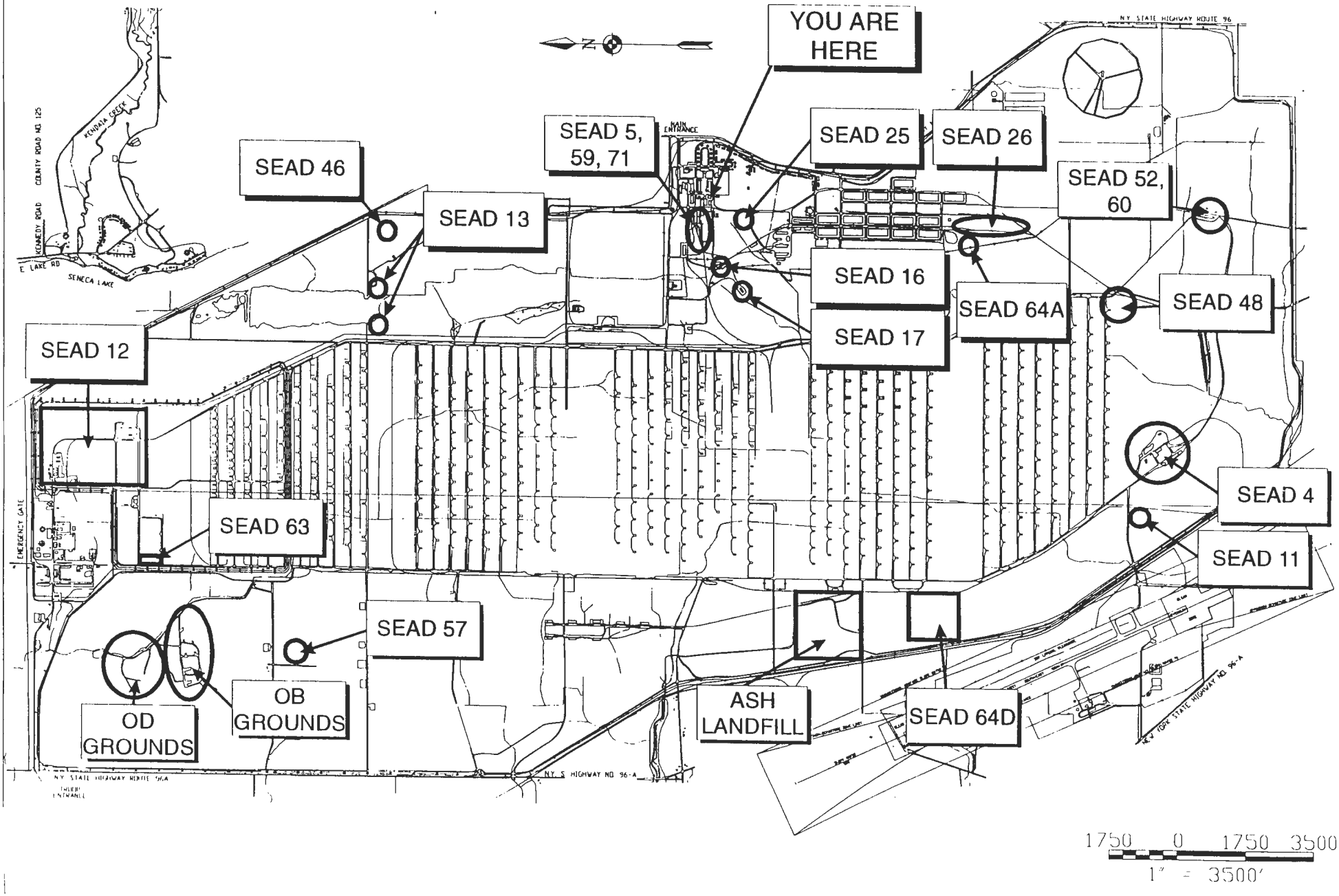
Sludge Piles, Seneca Army Depot

Reuse Implications
Sludge Piles

- Both Sites Are Located in the Planned Industrial Area (PID)
- The PID Area is a High Priority for Reuse
- Army Can Excess the PID Area to the LRA for Redevelopment



LANDSITE.DWG


YOU ARE HERE
SEAD 5, 59, 71
SEAD 25
SEAD 26
SEAD 46
SEAD 13
SEAD 52, 60
SEAD 16
SEAD 64A
SEAD 48
SEAD 17
SEAD 12
SEAD 4
SEAD 63
SEAD 11
SEAD 57
OD GROUNDS
OB GROUNDS
ASH LANDFILL
SEAD 64D
MAIN ENTRANCE
EMERGENCY GATE
KENDAIA CREEK
COUNTY ROAD NO. 125
KENNEDY ROAD
E. LAKE RD
SENECA LAKE
N.Y. STATE HIGHWAY ROUTE 96
N.Y. STATE HIGHWAY ROUTE 96-A
N.Y. STATE HIGHWAY NO. 96-A
1750 0 1750 3500
1" = 3500'

Risk Assessment
Sludge Piles

Sludge Piles, Seneca Army Depot

Risk Assessment
Sludge Piles

- Task Plan and Conceptual Site Model Outlined in the Project Scoping Plan(PSP)
- Preliminary Identification of Potential Receptors and Exposure Scenarios in PSP
- Receptors Identified as Future Construction Worker, Future Trespasser, Current On-site Workers, Terrestrial Biota
- Pathway Primary Source: Soil

Technology Selection
Sludge Piles

Sludge Piles, Seneca Army Depot

Technology Selection
Sludge Piles

- Soil Stabilization and On-site Capping
- Soil Stabilization and Off-site Disposal
- Off-site Disposal
- Removal Actions for Sludge Piles, Paint and Solvent Disposal Pit, and Unknown Buried Drums

Cost
Sludge Piles

Cost
Sludge Piles

- FY97 Award for RI/FS $1,374K

- $750K for RD FY 98
- $5,500K for RA FY 99
- $50K for LTM FY 00,01

Initiatives to Reduce Cost
Sludge Piles

Sludge Piles, Seneca Army Depot

Initiatives to Reduce Cost Sludge Piles

- Removals Sludge, Paint, Drums
- Combined 3 Sites for RI/FS
- State Spill Procedures & Brownfields for TPH's
- Generic Workplan with Site Specific Project Scoping Plan
- Cost versus Cleanup Levels

Summary
Sludge Piles

Summary
Sludge Piles

- Removal Action Planned for Sludge
- Removals Required for Paints/Solvents and Buried Drums
- Further Remediation Requirements Depend Upon Results of Risk Assessment