Munitions Washout Facility (SEAD-4) Building 2079 Boiler Blowdown Pit (SEAD-38)

Seneca Army Depot Activity (SEDA)

Public Presentation

December 12, 2007

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History/Background of SEAD-4 and SEAD-38

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Land Reuse Plan

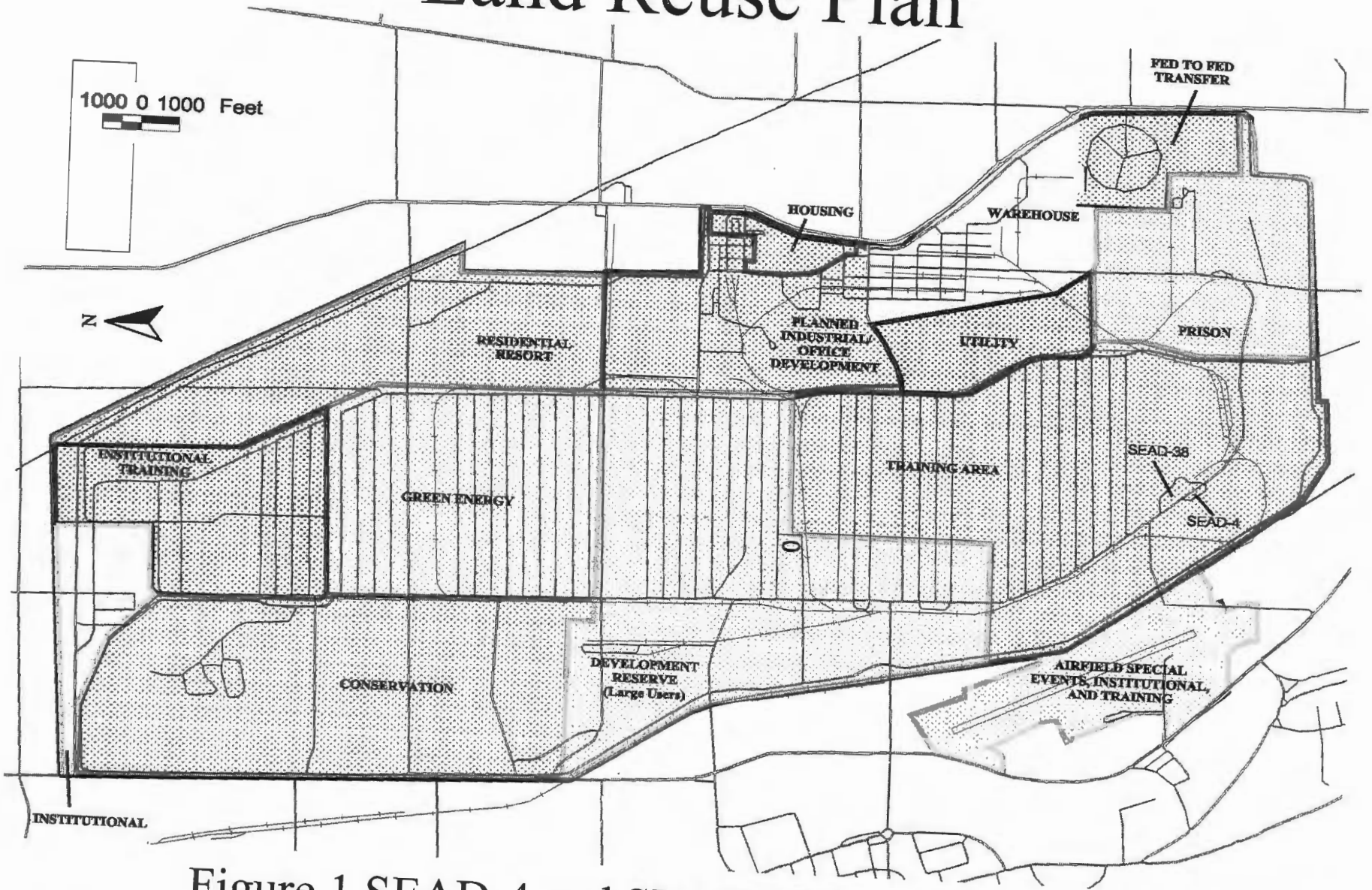

Figure 1 SEAD-4 and SEAD-38 Land Reuse Map

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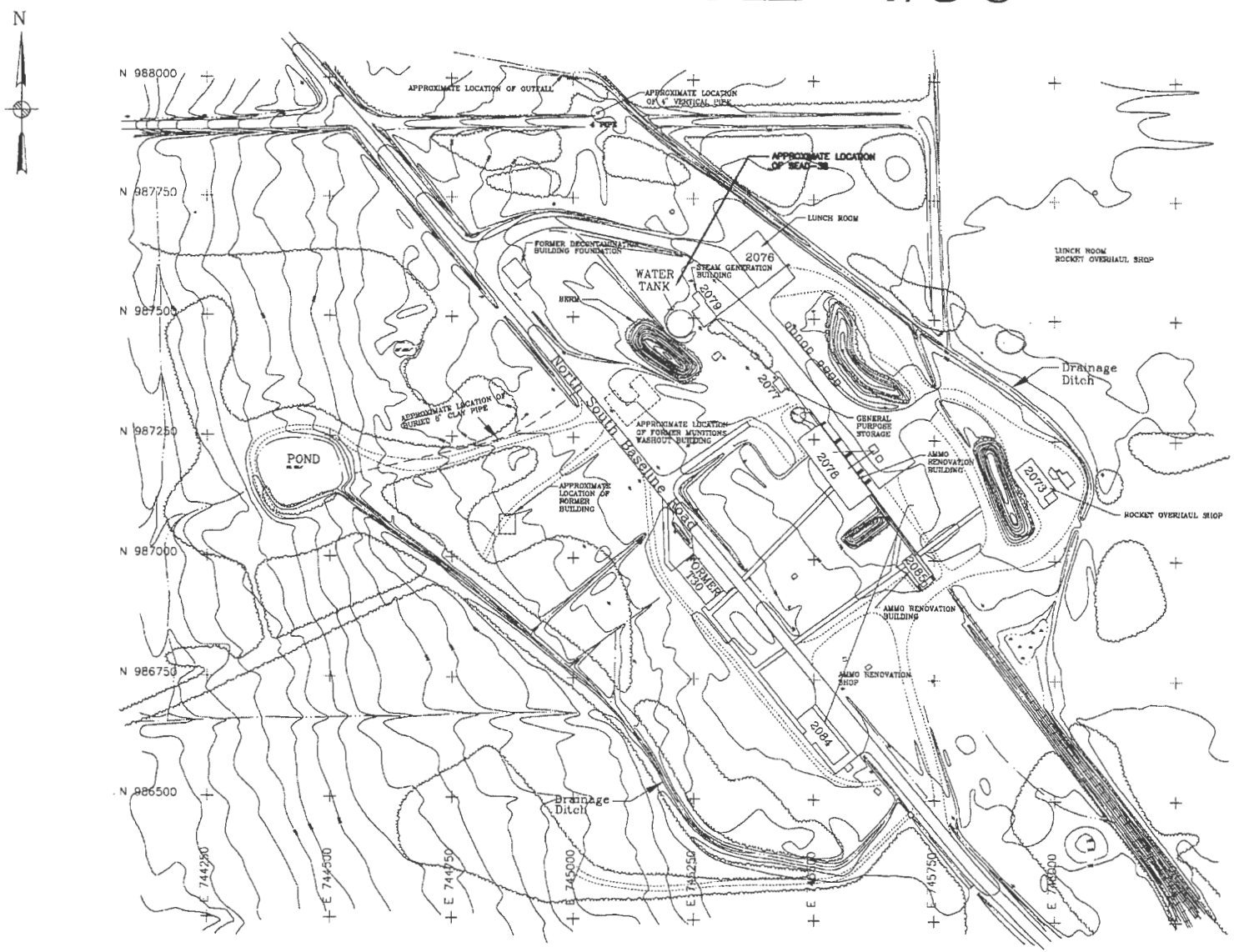
SEAD-4/38



LEGEND

- MINOR WATERWAY
- MAJOR WATERWAY
- FENCE
- UNPAVED ROAD
- BRUSH LINE
- LANDFILL EXTENTS
- RAILROAD
- 760 — GROUND SURFACE ELEVATION CONTOUR
- ROAD SIGN
- DECIDUOUS TREE
- GUIDE POST
- FIRE HYDRANT
- MANHOLE
- COORDINATE GRID (250' GRID)
- POLE
- UTILITY BOX
- MAILBOX/RR SIGNAL
- OVERHEAD UTILITY POLE
- SURVEY MONUMENT

100 0 100 200
(feet)

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CLIENT/PROJECT TITLE
SENECA ARMY DEPOT ACTIVITY
PROPOSED PLAN FOR
SEAD-4 AND SEAD-38

DEPT. ENVIRONMENTAL ENGINEERING | Dwg. No.

FIGURE 2
SEAD-4 MUNITIONS WASHOUT FACILITY & SEAD-38
THE BLDG. 2079 BOILER BLOWDOWN PIT
LOCATION MAP

Figure 2 - SEAD-4/38 Site Map

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SEDA History

- The former military facility was owned by the U.S. Government and operated by the Army between 1941 and approximately 2000, when SEDA's military mission ceased.
- The SEDA's historic military mission included receipt, storage, distribution, maintenance, and demilitarization of conventional ammunition, explosives, and special weapons.

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Site History – SEAD-4

- The Munitions Washout Facility (SEAD-4) was active between 1948 and 1963 for dismantling of munitions and removing the explosives by steam cleaning.

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Site History – SEAD-38

- The Building 2079 Boiler Blowdown Pit (SEAD-38) is located within SEAD-4 footprint to the north-northwest of Building 2079, a vacant boiler plant.
- 400 to 800 gallons of blowdown solution was reportedly discharged per day during operation.
- Boiler blowdown reportedly contained water, tannins, caustic soda (sodium hydroxide), and sodium phosphate.

Investigations at SEAD-4 and 38

- Total Petroleum Hydrocarbon Sampling Program within SEAD-38 – 1993 & 1994
- Expanded Site Inspection – 1993-1994
- Remedial Investigation – 1998-1999
- Test Pitting and Groundwater Monitoring at MW4-10 - 2004
- Feasibility Study – 2005

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Summary of Impacts at SEAD-4 and SEAD-38

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Previous Investigations

- Building Debris Investigation
- Geophysical Investigations (Seismic Refraction Survey, EM-31 Survey, and GPR Survey)
- Surface and Subsurface Soil Sampling
- Groundwater Sampling in Overburden
- Sediment and Surface Water Sampling

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Impacts Found at SEAD-4/38 Building Debris

- One VOC (acetone), SVOCs (including polycyclic aromatic hydrocarbons), explosives, pesticides, polychlorinated biphenyls (PCBs), and metals were found in debris inside vacant buildings.
  - Aroclor-1254 up to 91,000 ppb

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Impacts Found at SEAD-4/38 Soil

- Soil has been impacted primarily by metals

Compound	Maximum (ppm)	95th UCL [1] (ppm)	Commercial SCO (ppm)
Chromium	18,600	2,606 (surface) 786 (subsurface)	1,500
Lead	11,200	1,333 (surface) Subsurface no individual exceedance	1,000

1. Appropriate upper confidence limit of the arithmetic mean, as recommended by the EPA ProUCL program.

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Impacts Found at SEAD-4/38 Soil (Cont'd)

- 95th upper confidence limit (UCL) of the arithmetic mean is a statistical estimate of the likely level of exposure that may exist over the entire site.

Impacts Found at SEAD-4/38 Ditch Soil

- Drainage ditch soil has been impacted by PAHs and metals

Compound	Maximum (ppm)	95th UCL [1] (ppm)	Commercial SCO (ppm)
Benzo(a)pyrene	5.1	1.2	1
Cadmium	34.1	7.7	9.3
Copper	988	268	270
Chromium	4,800	1,240	1,500
Vanadium	1,140	150	NA

1. Appropriate upper confidence limit of the arithmetic mean, as recommended by the EPA ProUCL program.

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Impacts Found at SEAD-4/38 Groundwater

- Groundwater contains metal concentrations that are generally consistent with regional groundwater quality, but at levels above NYSDEC GA standards

Compound	Maximum (ppb)	NYSDEC GA Standard (ppb)	Background (ppb)
Antimony	39.3	3	52.7
Chromium	260	50	69.4
Iron	6,900	300	69,400
Manganese	855	300	1,120

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Impacts Found at SEAD-4/38 Groundwater (Cont'd)

- Benzene, ethylbenzene, 4-nitrotoluene, and nitrobenzene concentrations detected in MW4-10 in March, 1999 exceeded NYSDEC GA Standards; these compounds were not detected in other wells and not detected during ESI or the other RI sampling round
- Aroclor-1260 was detected in July 1999 at 0.09 µg/L in MW4-10; however, the 2004 analytical results indicated that PCBs were not present in the well MW4-10.
- PCBs were not detected in any test pit samples collected near MW4-10 during the 2004 additional investigation.

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Impacts Found at SEAD-4/38 Sediment/Surface Water

- Benzo(a)pyrene was detected in a single surface water sample (SW4-13) at 0.15 µg/L, above the NYSDEC guidance value of 0.0012 µg/L
- Metal concentrations exceeding the NYSDEC AWQS for Class C surface water were observed in SEAD-4/38 surface water
- 4,4'-DDE, Aroclor-1254, and metals were detected in sediment at concentrations above the NYSDEC guidance values

Human Health Risk Evaluation SEAD-4/38

- Considered for planned future use – training.
- Future residential receptors also considered for unrestricted use scenario
- Risk levels to current site worker, future outdoor training officer, current and future construction worker, and current and future child trespasser are acceptable
- Risk levels to indoor training officer are unacceptable due to contaminants in indoor debris
- Risk levels to future residents are elevated due to the one time detection of benzo(a)pyrene in surface water; the detected concentration was below the laboratory quantitation limit

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Ecological Risk Evaluation
SEAD-4/38

- Ecological receptors include vole, shrew, dove, hawk for soil and ditch soil exposure and great blue heron, largemouth bass, and northern leopard frog for sediment and surface water exposure
- Chromium and lead were identified as the COCs for surface and subsurface soil (i.e., soil 0-4 ft bgs.)
- Chromium was identified as a COC for the ditch soils and sediment.
- An elevated vanadium concentration at SD4-28 raised a concern for the terrestrial ecological receptor shrew.

Recommended Action at SEAD-4 and SEAD-38

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Purpose of Action at SEAD-4/38

- Perform housekeeping in vacant buildings to remove miscellaneous debris and dirt which will reduce human health risks to likely future receptors.
- Remediate soil, ditch soil, and sediment to reduce potential risks to ecological receptors

Alternatives Considered for SEAD-4/38

- Alternative 1 No Action
- Alternative 2 On-Site Containment (Institutional Controls/Soil Cover)
- Alternative 3 Off-Site Disposal (Excavation/Off-Site Disposal)

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Components of Selected Remedy at SEAD-4/38 (Alternative 3)

- Remove miscellaneous debris and dust/dirt inside vacant buildings 2073, 2076, 2078, 2084, and 2085;
- Demolish Building 2079;
- Excavate ditch soil until the cleanup goal for chromium (60 mg/kg) is reached;
- Excavate the hot spot SD4-28 with vanadium concentrations greater than 150 mg/kg;

Components of Selected Remedy at SEAD-4/38 (con't)

- Excavate surface and subsurface soils until the cleanup goals for lead 167 mg/kg and chromium 60 mg/kg are achieved (~ 16,000 yd^3);
- Dewater the man-made lagoon and allow water to percolate into the ground at a location outside of the excavation areas;
- Once the lagoon is empty, excavate soil from the man-made lagoon until the chromium cleanup goal of 60 mg/kg is achieved;

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Components of Selected Remedy at SEAD-4/38 (con't)

- Remove the berm at the end of the storm water control basin and allow the man-made lagoon to return to its preexisting grade;
- Stabilize waste materials exceeding the waste characterization criteria (as necessary);
- Dispose of the waste materials in a permitted off-site landfill;

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Components of Selected Remedy at SEAD-4/38 (con't)

- Backfill excavation areas that cannot be graded to promote positive drainage;
- Backfill excavation areas deeper than 4 feet near the road or buildings with clean backfill (as necessary); and
- Submit a Completion Report documenting the completion of the remedial action.
- No Land Use Controls expected to be place on area at end of remedial action.

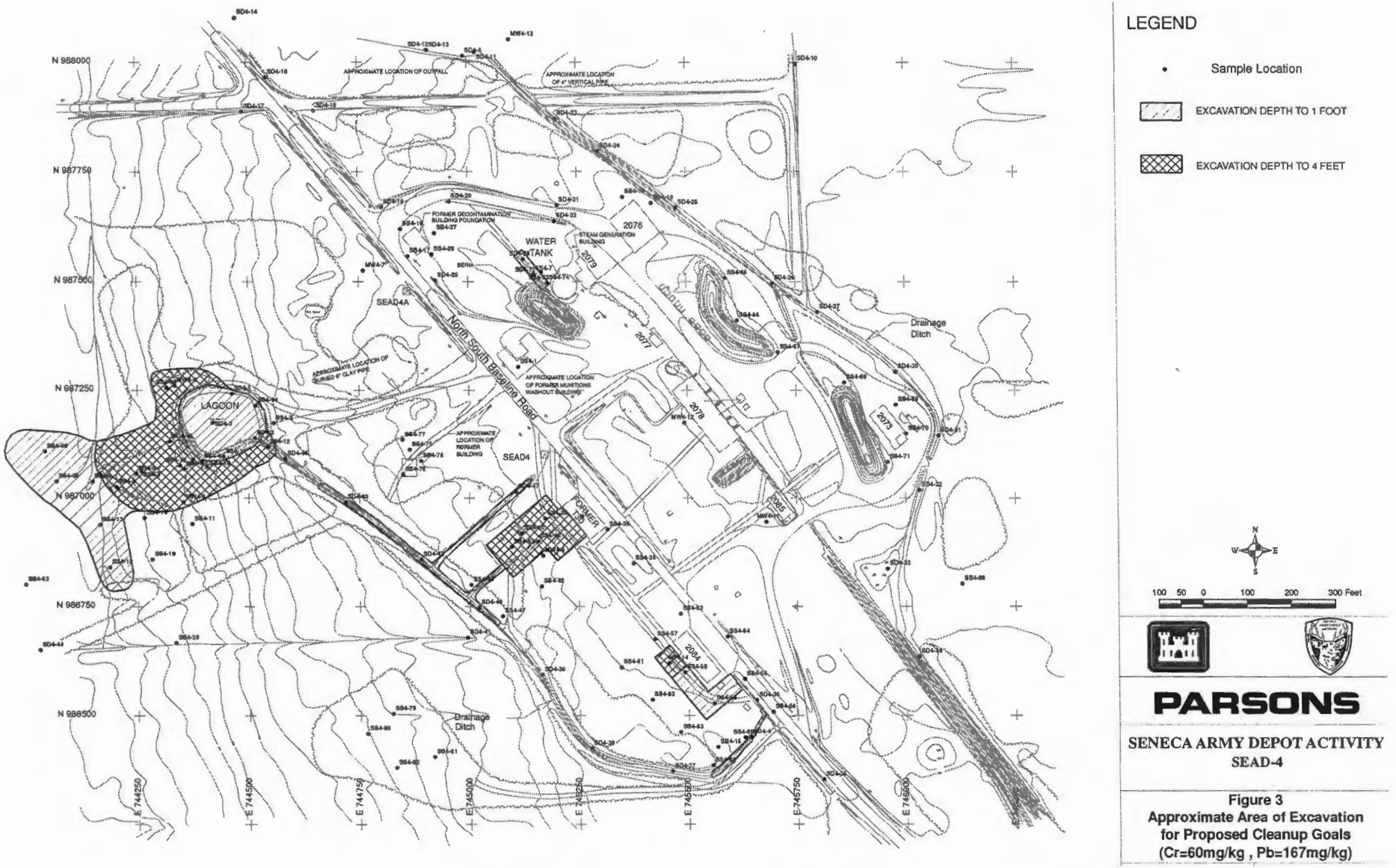

Figure 3 Excavation Limits

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Clean Up Goals for SEAD-4/38

Table
Cleanup Goals for SEAD-4 and SEAD-38
Soil, Ditch Soil, and Lagoon Soil

Compounds	Soil Cleanup Goal [1]	Drainage Ditch and Man-Made Lagoon Cleanup Goal [1]	Cleanup Goal for Drainage Ditch Hot Spot SD4-28 [2]
Chromium (total)	60	60	--
Lead	167	--	--
Vanadium	--	--	150

Key: mg/kg = milligrams per kilogram.

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Basis of Proposing Alternative 3

- Human health risk would be acceptable to all receptors considered (including residential receptors)
- Ecological risk would be acceptable to all receptors considered
- Eliminates need for long term institutional controls

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Schedule to Implement Remedy at SEAD-4/38

- Field work should take approximately 2~3 months to complete

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FILL AREA WEST OF BUILDING 135 (SEAD-59) ALLEGED PAINT DISPOSAL AREA (SEAD-71)

Seneca Army Depot Activity (SEDA)

Public Presentation

December 12, 2007

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Site History – SEAD-59

- SEAD-59 was used for the disposal of construction debris and oily sludge.
- A large quantity of miscellaneous "roads and grounds" waste was reported to have been buried at SEAD-59.

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Site History – SEAD-71

- Paints and/or solvents were suspected to be disposed at SEAD-71 in burial pits.

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Previous Investigations at SEAD-59 and SEAD-71

- Soil Gas Survey at SEAD-59
- Geophysical Investigations (Seismic Refraction, EM-31, EM-61, and GPR Surveys)
- Surface and Subsurface Soil Sampling & Analysis
- TCRA Confirmatory Soil and Soil Pile Sampling & Analysis
- Overburden Groundwater Sampling & Analysis

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Investigations at SEAD-59 and SEAD-71

- Expanded Site Inspection – 1994
- Phase I Remedial Investigation – 1997
- Time Critical Removal Action (TCRA) - 2002
- Phase II Remedial Investigation - 2006

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Summary of Impacts at SEAD-59 and SEAD-71

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Current Impacts at SEAD-59

Soil

- Soil is impacted primarily by carcinogenic polycyclic aromatic hydrocarbons (cPAHs) and metals.

Compound	Maximum Detect (ppm)	95th UCL [1] (ppm)	Industrial Soil Cleanup Objective (ppm)
Benzo(a)pyrene	8.050 (surface) 4.6 (subsurface)	1.45 (surface) 4.6 (subsurface)	1.1
Dibenz(a,h)anthracene	1.655 (surface) 0.084 (subsurface)	0.35 (surface) 0.084 (subsurface)	1.1
Arsenic	32.2 (surface) 6 (subsurface)	5.74 (surface) 4.78 (subsurface)	16

1. Appropriate upper confidence limit of the arithmetic mean, as recommended by the EPA ProUCL program.

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Impacts at SEAD-59 Soil Piles

- Soil Piles are impacted primarily by cPAHs. Soil contains visible evidence of asphalt.

Compound	Maximum Detect (ppm)	95th UCL [1] (ppm)	Industrial Soil Cleanup Objective (ppm)
Benzo(a)pyrene	16	7.92	1.1
Dibenz(a,h)anthracene	2.9	1.24	1.1

1. Appropriate upper confidence limit of the arithmetic mean, as recommended by the EPA ProUCL program.

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Impacts Found at SEAD-59 Groundwater

- Groundwater contains metal concentrations that are generally consistent with regional groundwater quality, but at levels above NYSDEC GA standards.

Compound	Maximum Detect (ppb)	NYSDEC GA Standard (ppb)	SEDA Background (ppb)
Antimony	8.6	3	52.7
Iron	3,680	300	69,400
Manganese	314	300	1,120
Sodium	304,000	20,000	59,400

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Current Impacts at SEAD-71 Soil

- Soil is impacted primarily by cPAHs.

Compound	Maximum Detect (ppm)	95th UCL [1] (ppm)	Industrial Soil Cleanup Objective (ppm)
Benzo(a)anthracene	150 (surface) 37 (subsurface)	42.6 (surface) 37 (subsurface)	11
Benzo(a)pyrene	120 (surface) 22 (subsurface)	34.8 (surface) 22 (subsurface)	1.1
Dibenz(a,h)anthracene	25 (surface) 9.8 (subsurface)	5.5 (surface) 7 (subsurface)	1.1
Indeno(1,2,3-cd)pyrene	65 (surface) 12 (subsurface)	12.9 (surface) 6.8 (subsurface)	11

1. Appropriate upper confidence limit of the arithmetic mean, as recommended by the EPA ProUCL program.

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Current Impacts at SEAD-71 Soil (Cont'd)

- Maximum cPAH concentrations were detected in surface soil within Fenced Area.
- Fenced Area is paved in some locations and covered with crushed stone in other locations. The Army typically utilized hard fill consisting of oiled crushed stone to form a sturdy base for areas subjected to heavy vehicular traffic and storage operations.
- Asphalt presence is noted in boring log of MW71-1 and field notes for surface soil samples collected within Fenced Area.
- Elevated PAH concentrations detected in surface soil within Fenced Area were likely caused by asphalt and hard fill that was used to construct the area.

Impacts Found at SEAD-71 Groundwater

- Groundwater contains metal concentrations that are generally consistent with regional groundwater quality, but at levels above NYSDEC GA standards

Compound	Maximum Detect (ppb)	NYSDEC GA Standard (ppb)	SEDA Background (ppb)
4-Nitroaniline	8.7	5	NA
Antimony	6.52	3	52.7
Iron	4,470	300	69,400
Manganese	2,680	300	1,120
Sodium	62,200	20,000	59,400

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Human Health Risk Evaluation
SEAD-59/71

- Assessed for planned future use – industrial/office development.
- Receptors include current and future construction worker, future industrial worker, and current adolescent trespasser/future visitor.
- Exposure pathways include inhalation of ambient dusts caused by soil resuspension, ingestion of soil, intake of groundwater, and dermal contact with soil. Dermal contact with groundwater was evaluated for construction worker.

SEAD-59 Soil Piles
Human Health Risk Assessment
Conclusions

- Antimony, iron, and manganese in groundwater are the primary COPCs contributing to elevated non-cancer hazard indices for industrial worker and construction worker. Antimony, iron, and manganese concentrations in SEAD-59 groundwater were consistent with Seneca background.
- Contaminants associated with SEAD-59 soil piles do not pose unacceptable risks to industrial receptors. Elevated non-cancer hazard indices are caused by Seneca background.

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SEAD-59 Human Health Risk Assessment Conclusions

- Elevated non-cancer hazard indices for industrial worker and construction worker are caused by SEDA background and are not related to any release at SEAD-59.
- Contaminants associated with releases at SEAD-59 do not pose unacceptable risks to industrial receptors.

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SEAD-71 Human Health Risk Assessment Conclusions

- Elevated PAH concentrations within Fenced Area were not associated with any release at SEAD-71. Contaminants in soil outside Fenced Area do not pose significant cancer risks to human receptors.
- Elevated non-cancer hazard indices for industrial worker and construction worker are caused by SEDA background and are not related to any release at SEAD-71.
- Contaminants associated with releases at SEAD-71 do not pose unacceptable risks to the industrial receptors.

Ecological Risk Evaluation SEAD-59/71

- No COCs were identified for SEAD-59 soil, SEAD-59 soil piles, or SEAD-71 soil for ecological receptors.
- Soil at SEAD-59 and SEAD-71, and SEAD-59 soil piles do not significantly impact ecological receptors in the areas.

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Recommended Action at SEAD-59 and SEAD-71

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Alternatives Considered for SEAD-59/71

- Alternative 1 No Action
- Alternative 2 Soil Excavation to Achieve Unrestricted Use/Off-Site Disposal
- Alternative 3 Land Use Control

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Purpose of Action at SEAD-59/71

- Reduce potential risks to more sensitive populations (e.g., residents).

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Components of Selected Remedy at SEAD-59/71 (Alternative 3)

- Install demarcation fabric over existing soil piles.
- Place 12 inches of soil cover over piles.
- Revegetate to prevent erosion.
- Implement LUCs to prohibit groundwater and residential use (e.g., housing, schools, child care facilities, and playgrounds) and prohibit unauthorized excavation of piles.

Schedule to Implement Remedy at SEAD-59/71

- Field work should take approximately 1 to 2 months to complete

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