New York State Canal Corporation/Allco/Leyerle Site
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2. Phase I Environmental Site Assessment

2.1 Site Location, Description, and Environmental Setting

The New York State Canal Corporation (NYSCC)/Allco/Leyerle Final Candidate Site (FCS) is located in the Hudson-Mohawk Lowland physiographic province. The topography of this province has been produced primarily by erosion along outcrop belts of sedimentary rocks that lie between the Catskills and the metamorphosed shale hills of the Taconics. The province generally has low relief and elevation and is underlain by Ordovician shales that have been exposed by the erosion of Silurian and Devonian limestones (University of the State of New York 1966). This site comprises three parcels of different ownership. Site photos are found in Appendix A.

2.1.1 New York State Canal Corporation

The approximately 22.4-acre NYSCC parcel is located on the west side of the Hudson River (approximately at river mile 162.4) in the town of Halfmoon (see Figure 2-1). It is a mostly wooded parcel characterized by generally flat topographic conditions on its western half and a pair of berms and slopes on its eastern half, leading down to the Hudson River. Gentle topographic elevation differences characterize most of the river edge, although an abrupt topographic rise occurs 40 to 75 feet inland along most of the middle part of the parcel. There is extensive river frontage but no rail access. A dirt road traverses most of the northern and eastern sides of the property but does not extend to the southernmost quarter. Access is available by motor vehicle via a road leading to Routes 4 and 32. There is no rail access on or adjacent to the property.

The NYSCC parcel is mostly undeveloped at this time except for the southernmost tip which NYSCC leases for residential use; a house trailer and a small wooden cottage were observed in that area. A floating dock extends from the shoreline in front of these cottages. Remains of a former cabin are located in the middle area of the parcel. A concrete-block-lined well or septic block measuring approximately 4 feet by 3 feet is located southwest of this cottage.

Wetland vegetation occurs intermittently with other forest and scrub vegetation along the river edge, but other wetland areas were not prominent. An overhead electrical service line traverses the eastern side of to Routes 4 and 32, west of the property.

Several surficial dumping areas were noted along the base of a 6- to 10-foot escarpment east of the access road. Refuse consists of rusted metallic debris, remnants of automobiles, tires, concrete blocks, roofing shingles, and glass bottles. In addition, two unlabeled 55-gallon drums were observed near the northeast corner of the property, north of this escarpment. Tar was noted on top of one drum. Key features are presented on Figure 2-1.

Adjacent land use includes residential uses to the north and south and some industrial uses to the west. The Hudson River flows to the east. The land within 1 mile is mostly residential, with extensive forestland. There is also some light commercial land use

along Route 4. The eastern side of the Hudson River is predominantly open space, with some residential properties nearer the river.

2.1.2 Allco

The approximately 27.8-acre Allco property is located on the west side of the Hudson River (approximately at river mile 162.4) in the town of Halfmoon (see Figure 2-1). The property is located to the west of Route 4 and is mostly undeveloped. A small adjacent parcel is a business park consisting of an auto repair shop, a self-storage facility, a building for lease, and a steel fabricating facility. The Allco property had been previously used for minor logging activities. Topography is relatively flat; maximum elevation differences on the site are 15 to 20 feet. The eastern and northern edges of the property are wooded, and the central portion remains open. The property contains some wetland areas in the central portion and along the railroad tracks paralleling the western parcel border. A creek enters the property from the west (near the northwest corner), turns north and exits the property, then re-enters the property near the northeast corner and flows along the eastern border to a manmade pond, and then flows off site to the south. Exposed soil was noted to contain large cobbles and gravel. Although no rock outcrops were noted on site, shale reportedly occurs approximately 10 to 15 feet below ground surface. The railroad is about 6 to 10 feet above grade. Gas, electric, and water services are located near the southern boundary, and water service is also available along the eastern border.

The area to the south is light industrial, and the area to the east (on the east side of Route 4) includes undeveloped NYSCC property and residential property. Key features are presented on Figure 2-1.

2.1.3 Leyerle

The approximately 23.9-acre Leyerle property is located on the west side of the Hudson River (approximately at river mile 162.4) in the town of Halfmoon. This parcel is undeveloped. While the Leyerle parcel has extensive railroad frontage, there is no frontage on to Routes 4 and 32. Key features are presented on Figure 2-1.

2.2 Historical Use Information

The NYSCC parcel was reportedly used as a dredge spoils disposal area in the early 1900s, but it has not been used since that time for any commercial or industrial purposes. As stated above, the Allco site was historically used for logging. The history of the Leyerle site is not known.

2.3 Previous Investigations

According to representatives from NYSCC and Allco, no site investigations have been conducted on their respective properties. It is unknown whether previous investigations of the Leyerle property were conducted.

3. Phase II Investigation

3.1 Field Investigations

The initial phase of the environmental assessment consisted of collecting environmental and geotechnical samples. Results of the geotechnical sampling are provided in Section 4 of this report. Site photos are found in Appendix A. Boring logs and supplemental geotechnical information are in Appendix B. Environmental samples were collected from surface soil, surface water, sediment, subsurface soil, and groundwater. Surface and subsurface soil samples were collected in areas of surficial dumping, drum disposal areas, berms of potential dredge spoils, and areas of the site where construction operations would be expected. Surface water and sediment samples were collected along present site runoff flow pathways. Groundwater samples were collected to provide an indication of overall environmental conditions.

All environmental field investigations were performed in accordance with the August 2003 *Hudson River PCBs Superfund Site Facility Siting Work Plan* (Ecology and Environment, Inc.) and the September 2003 addenda to that plan, the *Site-Specific Field Investigations of the Final Candidate Sites* (Ecology and Environment, Inc.). Investigations at this site were performed in September and October 2003. A summary of investigation activities is provided in Table 3.1-1.

Deviations from the Work Plan

The following deviations from the work plan occurred during the field program:

- Temporary well boring NCC-GP02 was dry, so a well was not installed.

- Temporary well location NCC-GP04 could not be accessed with a drill rig. Therefore, a hand auger was used to obtain the subsurface soil sample. Because refusal occurred at 2 feet after two attempts to auger as deep as possible, a temporary well was not installed.

- Geotechnical boring NCC-GT02 was moved from the northwest corner of the Leyerle parcel to the northeast corner of the Allco parcel. This boring was combined with temporary well boring NCC-GP05. Because the borehole was dry, no temporary well was installed.

3.2 Environmental Sampling Program

3.2.1 Temporary Well Installation and Groundwater Flow

Two temporary 1-inch polyvinyl chloride (PVC) wells were installed via direct push technologies (DPT). Well construction information is provided in Table 3.2-1. Before groundwater sampling, each temporary well was purged three times the volume of water standing in the casing or to dryness (whichever occurred first). Water quality parameters measured in the field during purging are presented in Table 3.2-2. Groundwater sample results are described below.

Groundwater elevations were measured from each temporary well upon well completion and at two separate times following completion of the sampling program. In addition, a surface water elevation was obtained from the Hudson River along the eastern border of the site via a stream gauge. The top of each temporary well and a reference mark on the stream gauge were surveyed so that an accurate elevation could be obtained. Table 3.2-3 summarizes the recorded elevations. Based on the limited information available from this study (two wells spaced more than 1,000 feet apart), groundwater flow beneath the site appears to be to the east towards the Hudson River (see Figure 3-1).

3.2.2 Field Sampling and Surveying

The environmental investigations at this site included collecting eleven surface soil samples and six surface water/sediment samples; subsurface soil sampling via DPT at five locations and installation and sampling of temporary 1-inch monitoring wells at two of the five locations; three geotechnical soil borings; and installation of one stream gauge for hydrologic monitoring purposes. Table 3.2-4 summarizes the total number of field and quality assurance/quality control (QA/QC) samples collected and the parameters for which they were analyzed, and Figure 3-2 illustrates all environmental investigation locations. All sample locations and stream gauges were surveyed for both horizontal and vertical positions. Survey data is presented in Appendix C. All samples were collected in accordance with the project work plans. Field chemistry data recorded from surface water sample locations are presented in Table 3.2-2. Results from each sample medium are described below.

3.2.3 Data Usability

Soil, sediment, surface water, and groundwater samples were collected from various locations at each FCS (see Section 3.3). The samples were submitted to several environmental analytical laboratories for analytical testing as directed by EPA. Appendix D provides the complete analytical results, field quality control (QC) samples, and data qualification. The specific data usability concerns regarding each FCS are still under evaluation as part of a detailed review of the hard copy data assessment reports. The following is a summary of general information regarding data usability determined from the electronic data review.

Out of a total of 4,788 reported values, 1,028 values were qualified during the data validation process. The data points that were qualified as estimated, bias low, or non-detect are considered useable for the purposes of this project. A total of 11 values were flagged as unusable, resulting in a completeness of more than 99.9%. Further evaluation of the data will include determining potential limitations of other qualified data and the impact of rejected data. In general, potential data limitations for the site are minor, as noted below:

- Low levels of several volatiles and pesticides were flagged “U” as non-detected. The results were generally below the reporting limit and, therefore, the data qualification has no impact on the data usability.

- Data qualified as unusable are for compounds that are generally highly reactive and not typically found during site investigations.

- Field blanks, including trip blanks, rinseates, and field duplicates, were collected to be applicable to all FCSs. The results are summarized in Appendix D. The results demonstrate good overall sampling and analysis precision and no significant field contamination.

- The laboratory reported tentatively identified compounds (TICs) for volatile and semivolatile compounds on the hard copy data package. TIC values are reported as "NJ" with presumptive evidence that the compounds are present and concentrations are considered highly estimated. The TICs are being reviewed to determine any indications of significant contamination not identified by the results for the known target compounds.

3.3 Environmental Sample Results and Evaluation

State and federal standards, criteria, and guidances were used for preliminary screening purposes during review of the analytical sample results for surface soil, subsurface soil, surface water, sediment, and groundwater. Exceedances of the criteria (with the exception of metals) are noted in Tables 3.3-1 through 3.3-5 by shading the values that exceeded the criteria.

Metals cannot be directly compared to the criteria without additional evaluation (including evaluation of background levels) because metals occur naturally in the environment. Additionally, turbidity in surface water and groundwater samples can cause interference with metals analysis. These factors were considered in the evaluation of the significance of detected compounds.

The criteria were selected based on a review of available EPA and New York State Department of Environmental Conservation (NYSDEC) standards, criteria, and guidances for the various media sampled. The applicability of these preliminary screening criteria to the FCSs will be determined as part of further evaluation by EPA in consultation with NYSDEC and the New York State Department of Health (NYSDOH).

The following discussion identifies the samples, by medium, with compounds exceeding the screening criteria. Those compounds without appropriate screening criteria also are identified. Where available, pertinent information for comparison purposes is provided.

Soil (Surface and Subsurface)

NYSDEC, *Technical and Administrative Guidance Memorandum #4046: Determination of Soil Cleanup Objectives and Cleanup Levels* (1994) and subsequent amendments (December 20, 2000) (TAGM 4046). The recommended soil cleanup objectives and typical eastern USA background concentrations for metals contained in TAGM 4046 were used as preliminary screening guidance for soil. Where specific guidance values were available for surface and subsurface soils (such as for polychlorinated biphenyls

[PCBs]) they were applied based on the depth of the samples collected. TAGM 4046 assumes a total organic carbon (TOC) of 1%.

Surface Water
NYSDEC, *Technical and Operational Guidance Series (T.O.G.S. 1.1.1): Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations* (1998). These standards and guidance provide values for various water classes. Since the majority of the surface water samples were collected from unnamed ditches and ponded water areas at the site, the surface water samples collected are assumed to be Class D waters. Class D waters are best used for fishing. However, due to natural conditions such as intermittent flow, water conditions may not be conducive to fish propagation. Class C waters are considered conducive to fish propagation. Surface water standards and guidance values are calculated for some inorganics based on water hardness.

Sediment
NYSDEC, *Division of Fish, Wildlife and Marine Resources, Technical Guidance for Screening Contaminated Sediments* (1999). This guidance requires organic contaminants in sediments to be calculated based on sample TOC. TOC data were collected and used to calculate these screening values. Various criteria for bioaccumulation and acute and chronic toxicity are presented in this document for protection of human health, benthic aquatic life, and wildlife. The benthic aquatic life chronic toxicity protection level for sediment was selected as the preliminary screening value for all collected sediment samples.

Groundwater
NYSDEC, *Technical and Operational Guidance Series (T.O.G.S. 1.1.1): Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations* (1998) provides Class GA standards and guidance values. The *National Primary and Secondary Drinking Water Regulations, Current Drinking Water Standards* (2002) maximum contaminant levels (MCLs) were used for preliminary screening for groundwater samples collected from temporary wells.

3.3.1 Surface Soil

Volatile Organic Compounds (VOCs)
No VOCs were detected in the surface soil samples.

Semivolatile Organic Compounds (SVOCs)
Benzo(a)anthracene (1,300 µg/kg [J]), benzo(a)pyrene (1,200 µg/kg [J]), benzo(k)fluoranthene (1,300 µg/kg [J]) , chrysene (1,400 µg/kg [J]), and dibenzo(a,h)anthracene (220 µg/kg [J]) were found above their screening value in NCC-SS06 (see Table 3.3-1). There is no standard for one compound detected, carbazole, which was found at 230 µg/kg (J) at NCC-SS06 (a low area in the northeast portion of the NYSCC parcel).

Pesticides
No pesticides above screening criteria were detected (see Table 3.3-1). One pesticide, endrin aldehyde, which does not have a standard, was found at 8.4 µg/kg in NCC-SS01, which is located in the southern portion of the site (see Table 3.3-1).

Herbicides
No herbicides were detected in the surface soil samples.

PCBs
No PCBs that exceeded screening criteria were detected in the surface soil samples (see Table 3.3-1).

Hexane Extractable Materials (Total Petroleum Hydrocarbons [TPHs])
TPHs were not detected in the surface soil samples.

Inorganics
Arsenic, beryllium, cadmium, calcium, chromium, copper, iron, magnesium, mercury, nickel, and zinc were found above the NYSDEC screening values (see Table 3.3-1). Metals are naturally occurring constituents of soil that often exceed criteria. The levels of most of these metals are within or very close to the eastern USA background range. Only zinc in NCC-SS06 and NCC-SS07 was detected at concentrations greater than three times the highest level of the common range.

Low levels of cyanide were detected at four surface soil samples (NCC-SS01, NCC-SS04, NCC-SS10, and NCC-SS11) at concentrations ranging from 0.21 mg/kg to 0.49 mg/kg. There is no screening value available for this compound.

3.3.2 Subsurface Soil

VOCs
No VOCs exceeding criteria were detected in the subsurface soil (see Table 3.3-2). 2-butanone (11 µg/kg), which does not have a screening value, was found in sample NCC-GP03, a downgradient sample in the northeastern portion of the NYSCC parcel (see Table 3.3-2).

SVOCs
No SVOCs that exceeded screening criteria were detected in the subsurface soil samples (see Table 3.3-2).

Pesticides
No pesticides that exceeded screening criteria were detected in the subsurface soil samples (see Table 3.3-2).

PCBs
No PCBs were detected in the subsurface soil samples.

Inorganics
Arsenic, beryllium, chromium, copper, iron, magnesium, nickel, and zinc were found above their NYSDEC screening values (see Table 3.3-2). Metals are naturally occurring constituents of soil that often exceed criteria. The levels of most of these metals were within the eastern USA background range or less than two times the highest level of the eastern USA background range.

3.3.3 Surface Water

VOCs
No VOCs were detected in the surface water.

SVOCs
No SVOCs were detected in the surface water.

Pesticides
No pesticides were detected in the surface water.

PCBs
No PCBs were detected in the surface water.

Anions
The compounds without screening criteria that were detected were chloride, nitrate-N, and sulfate (see Table 3.3-3). Nitrate-N concentrations were relatively uniform across the site. Chloride and sulfate concentrations vary, with the highest concentrations of chloride found at NCC-SW06 (at the mouth of the site drainage way) and the highest concentrations of sulfate at NCC-SW02 (a low area in the central portion of the site).

Inorganics
Iron was detected above its standard (see Table 3.3-3). Iron is a naturally occurring constituent of surface waters that often exceeds criteria. Therefore, the presence of iron is not of concern.

Hardness
Hardness concentrations were relatively uniform across the site, ranging from 235 mg/L to 360 mg/L.

3.3.4 Sediment

VOCs
No VOCs with screening criteria were detected (see Table 3.3-4). Very low levels of two VOCs, which do not have available screening values, were detected in the sediment samples: chloromethane (0.7 µg/kg [J]) in NCC-SE05 (Allco pond); and trichlorofluoromethane (0.4 µg/kg [J]) in NCC-SE06 (drainage way outfall) (see Table 3.3-4).

SVOCs
No SVOCs above screening criteria were detected (see Table 3.3-4). Di-n-octylphthalate, a compound with no screening value, was detected at 860 µg/kg (J) at NCC-SE01 (low area in the central portion of the site).

Pesticides
No pesticides above screening criteria were detected (see Table 3.3-4). Two pesticides without available screening criteria (4,4' DDE and endrin aldehyde) were found in the sediment samples (see Table 3.3-4). 4,4' DDE was found at 15 µg/kg (J) and 3.6 µg/kg (J) in NCC-SE01 (low area in the central portion of the site) and NCC-SE03 (drainage way on the west side of Allco), respectively. Endrin aldehyde was detected at 35 µg/kg (J) at NCC-SE02 (a low area in the central portion of the site.

PCBs
No PCBs were detected in the sediment samples.

Inorganics
Arsenic, copper, iron, lead, manganese, and nickel were detected above their NYSDEC screening values (see Table 3.3-4). Metals are naturally occurring constituents that often exceed criteria. The levels of most of these metals are within the eastern USA range or less than three times the highest level of the range.

Cyanide was detected at 0.43 and 0.79 mg/kg at NCC-SE03 and NCC-SE04, respectively. There is no standard available for this compound.

Total Organic Carbon (TOC)
Total organic carbon concentrations varied greatly across the site, ranging from 8,100 mg/kg to 250,000 mg/kg.

3.3.5 Groundwater

VOCs
No VOCs were detected in the groundwater samples.

SVOCs
No SVOCs were detected in the groundwater samples.

Pesticides
No pesticides were detected in the groundwater samples.

PCBs
No PCBs were detected in the groundwater samples.

Inorganics
Antimony, magnesium, manganese, and sodium were each detected above screening values in at least one well (see Table 3.3-5). These metals are naturally occurring

constituents of groundwater that often exceed criteria. Therefore, the presence of these metals is not of concern.

4. Geotechnical Assessment

A subsurface field investigation was conducted at the NYSCC/Allco/Leyerle site to obtain geotechnical information. The primary purpose of collecting this data was to determine if there are geotechnical limitations associated with use of the site for a sediment processing/transfer facility. Data collection included:

- Review of available subsurface information from previous studies;
- Soil borings installation (which included logging the subsurface geology and obtaining standard penetration test [SPT] data); and
- Submitting soil samples for geotechnical testing.

Presented below is a summary of the site geologic and geotechnical data collected.

Subsurface soil investigation locations were selected to provide general coverage of the site. Additionally, locations were selected based on the possible presence of fill in areas that may be used to construct the sediment processing/transfer facility. Figure 3-1 shows the locations of three geotechnical boreholes, NCC-GT01 through NCC-GT03, installed during this study. At each geotechnical boring location, a continuous vertical soil profile was developed from the ground surface to a depth of approximately 26 feet below ground surface (bgs) in 2-foot increments. A 2-inch outer diameter (OD) by 24-inch long split spoon sampler was advanced through 4.25-inch inner diameter (ID) hollow stem augers to collect the samples. Standard penetration tests using a split spoon sampler were conducted per ASTM Method D1586-99. Blow count data were recorded on boring logs and are presented in Appendix B. Granular soil density and cohesive soil consistency were classified using SPT n-values, which are the sums of the blows recorded over the second and third 6-inch penetration intervals of the tests.

One soil sample from each geotechnical boring was collected and submitted for Atterberg limits, particle size, and moisture content analysis. The overall goal of sample collection from geotechnical borings was to collect at least one soil sample from each soil horizon encountered within the top 25 feet of overburden. At two boreholes, one soil sample from each depth interval also was collected and submitted for moisture content testing, creating a continuous moisture profile from the ground surface to the bottom of the borehole. Particle size gradation curves and their respective analytical summary sheets, which also list Atterberg limit data and moisture content data are presented in Appendix B.

In addition to the geotechnical borings, subsurface geology was investigated at two other locations (NCC-GP01 and NCC-GP02) during environmental sampling. These soil investigation activities were conducted using direct-push technology (DPT); a 4-foot soil

collection interval was used to collect a continuous soil profile from the ground surface to approximately 25 feet bgs. DPT soil boring logs are also presented in Appendix B. Note that subsurface geology at another location, NCC-GP02, was completed for collection of environmental samples using a drill rig instead of DPT due to the rocky nature of the surface soil. Similarly, geotechnical borehole location NCC-GT02 also served as environmental sample location NCC-GP05 because the rocky soil prevented the use of DPT in this area.

The site subsurface geotechnical data indicated extensive variation in site soils between the NYSCC parcel and the Allco parcel. The NYSCC parcel contains a 10- to 16-foot thick layer of dredge spoils consisting of weathered shale fragments, silt, and sand. Density of these granular soils is loose, based on SPT n-values ranging from 7 to 10. A cobble at the 14- to 16-foot depth interval resulted in an isolated SPT n-value of 64, which is not representative of the general soil conditions. These dredge spoils are underlain by a gravel/clay/silt layer that grades to clay silt with increasing depth. A thin (<0.5 foot) layer of peat overlies a gravel/silt/sand layer at the northern end and silty sand with gravel at the southern end. Density of the silty sand is moderately dense to dense, based on SPT n-values. Weathered shale was collected in the DPT sampler from a depth of 23 feet bgs at the northern end of the parcel.

Underlying a thin (<0.5 foot thick) topsoil layer, a gravelly silty sand comprises the Allco parcel's overburden soils to a depth of approximately 2 feet bgs. A 0- to 3-foot thick clay/gravel/silt bed overlies weathered shale. Split spoon samples indicate weathered shale varies in thickness from approximately 0.5 feet to 5.5 feet thick. Auger refusal and/or split spoon refusal was encountered between approximately 6 and 11 feet bgs. Based on SPT n-values, the density of granular overburden soils other than the weathered shale is loose nearest the surface and increases with depth.

5. Utility Assessment

5.1 Preliminary Assessment

A preliminary utility assessment was completed as part of the site-specific field investigation of the Final Candidate Sites. Major site utilities identified on-site are shown on Figure 2-1. The assessment included the following steps:

1) Observations of site surface utilities such as overhead power or telephone lines, electrical transformers, manholes, sewer outfalls, and water hydrants were made.

2) Dig Safely New York (Dig Safe) was contacted as part of the utility clearance process before subsurface/intrusive work activities, including direct communication with various utility operators, as needed. Operators of on-site utilities provided information.

3) Available site maps were reviewed. Maps were obtained from various sources, including property owners.

It is anticipated that further utility assessments will be completed at the Recommended Sites. Further assessment may include contacting local municipal offices for information, opening manholes to determine flow paths, and dye testing. Further assessment may be conducted as part of the design evaluation process or during other additional investigation of Recommended Sites.

5.2 Findings and Observations

Utilities identified at the NYSCC/Allco/Leyerle site include the following:

- Overhead residential electric service is located near the southern end of the NYSCC parcel. This service enters the parcel along the driveway leading from Route 4 to the two residential dwellings located at the southeastern corner of the parcel.

- Subsurface residential natural gas service is located near the southern end of the NYSCC parcel. This service enters the parcel along the driveway leading from Route 4 to the two residential dwellings located at the parcel's southeastern corner.

- Overhead electrical lines are also located along the eastern side of Route 4 adjacent to the site.

- Electrical service was noted at the Allco property buildings.

6. Survey of Terrestrial, Archaeological, and Architectural Resources (STAAR)

Section 106 of the National Historic Preservation Act requires federal agencies to take into account the effect that facility siting may have on cultural resources that are listed or are eligible for listing on the National Register of Historic Places (NRHP). Phase IB field investigations continued the cultural resources studies and are specifically designed to determine the presence and extent of cultural resources within the NYSCC/Allco/Leyerle site (see *Addenda to the Hudson River PCBs Superfund Site Facility Siting Work Plan: Site-Specific Field Investigations of the Final Candidate Sites*). The field activities involved archaeological, geomorphological, and architectural investigations.

6.1 Archaeological Investigation

Initial site reconnaissance was conducted in July 2003 and field investigations were conducted November 6, 7, and 10-13, 2003. More than 250 shovel test pits were excavated. The archaeological survey of the NYSCC property is complete; no cultural resources were found. Approximately half of the fieldwork for the Allco and Leyerle properties also is complete. Pending complete analysis, no further investigations are recommended for any of the surveyed areas.

6.2 Geomorphological Investigation

Fieldwork was conducted October 23 and 24, 2003. Four backhoe trenches were excavated and totaled 40 meters in length; each was approximately 1.3 meters in depth

and 10 meters in length (Figure 6-1). Trench 1 contained an old pipe, just below the topsoil, and a humic layer. Trench 2 contained a buried A horizon (paleosol) with a possible old stream channel. Trench 3 uncovered large quantities of slag material with the same features as Trench 2. Trench 4 was then placed perpendicularly between Trenches 2 and 3. Trench 4 did not uncover any features.

The analysis of the results of prehistoric site sensitivity is in progress.

6.3 Architectural Assessment

Fieldwork was conducted during July 2003. The southern end of this site contains one residence that is more than 50 years old. It appears to have undergone significant modification since its initial construction but will require further evaluation for NRHP-eligibility. A modern trailer is located to the north of the dwelling. A small dock is located to the east on the riverbank. Three structures (two metal and one wood), all of which are in a ruinous condition and have no integrity, also are located within the northern portion of the site.

7. Wetland Assessment

7.1 Determination and Delineation Methods

Wetland determinations and delineations of the NYSCC/Allco/Leyerle site on October 7-10, 2003, followed the routine approach noted in the U.S. Army Corps of Engineers (USACE) 1987 *Wetland Delineation Manual*, as outlined in Section 3.6.2.2 of the *Hudson River PCBs Superfund Site Facility Siting Work Plans* (Master Work Plans) (Ecology and Environment, Inc. 2003). Applicable data (e.g., soil surveys, National Wetland Inventory [NWI] mapping, etc.) were reviewed beforehand to provide background information (see Master Work Plans, Section 3.6.2.1). Determination and delineation activities were limited to those areas previously identified as potential wetlands through data review (i.e., NWI and NYSDEC mapping) and previous site reconnaissance efforts.

The NYSCC parcel is predominantly wooded and is characterized by generally level topographic conditions on its western half and a pair of berms and slopes on its eastern half, leading down to the Hudson River. Gentle topographic elevation differences characterize most of the river edge, although an abrupt topographic rise occurs 40 to 75 feet inland along most of the middle part of the parcel.

The Allco property is currently vacant land. A large percentage of the parcel (approximately 40%) has been cleared by logging activities in the past two or three years. Site topography is relatively flat; maximum elevation differences across the site are 15 to 20 feet. The eastern and northern edges of the property are wooded, and the central portion remains open. A creek enters the property from the west (near the northwest corner), turns north and exits the property, then re-enters the property near the northeast corner and flows along the eastern border to a manmade pond, and then flows off-site to the south. The pond dam has not been regularly maintained, which has resulted in shallow water levels and emergent plant growth.

The Leyerle parcel is undeveloped and entirely forested.

7.2 Review of Existing Information

NYSDEC wetland mapping did not indicate the presence of state-delineated wetlands on this site. Review of NWI wetland mapping indicated the site contained approximately 26.95 acres of wetland. The wetland classifications within the NYSCC property include a small portion of a PFO1C wetland (palustrine, forested, broadleaved deciduous, seasonally flooded) near the northern property boundary and a small ponded area (PUBF [palustrine, unconsolidated bottom, semi-permanently flooded [see Figure 7-1]). A large 16.88-acre PFO1E wetland (palustrine, forested, broadleaved deciduous, seasonally flooded/saturated) is mapped as occurring across much of the Allco property as well as a small PEM1F wetland (palustrine, emergent, persistent, semi-permanently flooded) located near the northern property boundary, and a 1-acre PUBHx (palustrine, unconsolidated bottom, permanently flooded, excavated) manmade pond in the southeastern corner. Wetlands on the Leyerle property are mapped as PFO1E, PFO5F (palustrine, forested, dead, semi-permanently flooded) and PEM/SS1Ch (palustrine, emergent, scrub-shrub, broadleaved, seasonally flooded, diked/impounded).

Although NWI wetland maps identify the shoreline along the river as a lacustrine wetland (L1UBHh along the frontage of the NYCC property), sample plots and determinations along the shoreline were limited to areas that exhibited wetland characteristics and occurred above the ordinary high water mark. Determination and delineation efforts did not extend into the river.

The mapped soil types within the site boundaries are Madalin mucky silty clay loam, Bernardston-Manlius-Nassau complex rolling/undulating, and Manlius-Nassau complex undulating/ rocky (U.S. Department of Agriculture 2003). The Madalin soil is poorly drained and appears on the Saratoga County hydric soils list. The Bernardston-Manlius-Nassau complex is composed of soils that are well- to excessively well-drained. The Bernardston-Nassau complex is well- to somewhat excessively well-drained (U.S. Department of Agriculture 2003).

7.3 Results of the Wetland Assessment

Field investigations resulted in the determination of 8.61 acres of wetland occurring across this site (see Table 7-1). A number of observation plots were completed, which led to the determination and delineation of 14 wetland areas representing four wetland community types (see Figure 7-1). Wetland identification labels correspond to observation plots. The delineated wetland acreage represents a reduction in the 26.9 acres indicated on the NWI mapping. A large portion of this discrepancy may be attributed to the alterations to the Allco site as a result of recent logging. Much of this site was identified on the NWI maps as a PFO1E wetland. Field-delineated wetland CC/AL/L-4 appears to have been impacted by these logging and earth moving activities. Similarly, there appears to have been some alteration to the landscape in the vicinity of the mapped PFO1C wetland along the northern boundary of the NYSCC site. Wetland CC/AL/L-1 may be a remnant of the larger area.

Table 7-1 Wetland Delineation Summary

Wetland ID	Community Type	Acreage
CC/AL/L-1	PFO/PUB	0.03
CC/AL/L-3	PFO	0.13
CC/AL/L-4	PEM	1.44
CC/AL/L-6	PEM/PUB	0.62
CC/AL/L-7	PFO/PEM	0.63
CC/AL/L-9	PFO/PSS	1.81
CC/AL/L-10	PFO	0.31
CC/AL/L-11	PFO	0.11
CC/AL/L-12	PFO/PSS	1.04
CC/AL/L-13	PFO	0.70
CC/AL/L-14	PEM/PUB	0.04
CC/AL/L-15	PEM	0.10
CC/AL/L-16	PFO/PSS	1.33
CC/AL/L-18	PFO/PSS	0.33
Total Acreage		8.61

Key

PEM = Palustrine, emergent.
PFO = Palustrine, forested.
PUB = Palustrine, unconsolidated bottom.
PSS = Palustrine, scrub-shrub.

Wetlands CC/AL/L-9, 10, 11, 13, and 16 on the Leyerle parcel appear to be part of a larger complex that continues to the north and northeast of the property (see Figure 7-1). In the northern portion of the Leyerle property there are several small isolated pocket depressions, which may have been created by historic mining and excavation activities.

Generally, the species composition within wetland areas on these three parcels was similar. Typical tree species within forested components of the wetlands included green ash (*Fraxinus pennsylvanica*), swamp white oak (*Quercus bicolor*), red maple (*Acer rubrum*), silver maple (*Acer saccharinum*), black willow (*Salix nigra*), slippery elm (*Ulmus rubra*), American elm (*Ulmus americana*), and northern cottonwood (*Populus deltoides*). Common species in scrub-shrub components included stiff dogwood (*Cornus foemina*), red-osier dogwood (*Cornus stolinifera*), silky dogwood (*Cornus amomum*), buttonbush (*Cephalanthus occidentalis*), spicebush (*Lindera benzoin*), and winterberry (*Ilex verticillata*). Vegetation occurring in emergent components included sensitive fern (*Onoclea sensibilis*), spotted jewelweed (*Impatiens capensis*), false nettle (*Boehmeria cylindrica*), arrow-leaf tearthumb (*Polygonum sagittatum*), broadleaf cattail (*Typha latifolia*), reed canary grass (*Phalaris arundinacea*), woolgrass (*Scirpus cyperinus*), hop sedge (*Carex lupilina*), Devil's beggar-ticks (*Bidens frondosa*), rice cutgrass (*Leersia oryzoides*), swamp jack-in-the-pulpit (*Arisaema triphyllum*), New England aster (*Aster novae-angliae*), rough-leaf goldenrod (*Solidago patula*), giant goldenrod (*Solidago*

gigantea), false nettle (*Boehmeria cylindrica*), joe-pye weed (*Eupatorium maculatum*), soft rush (*Juncus effusus*), and shallow sedge (*Carex lurida*).

The 8.6 acres of wetlands delineated on the site represent a decrease of approximately 18 acres from the NWI-estimated wetland acreage. The majority of this discrepancy occurs in areas that have been significantly modified in recent years. These modifications may be a result of both logging and some filling/dumping. As NWI primarily identifies wetlands using remote sensing techniques (i.e., photo interpretation) and the mapping does not necessarily represent an accurate depiction of wetlands on a site, NWI mapping is to be used as a basis for further investigation.

8. Floodplain Assessment

An initial floodplain assessment was conducted on the NYSCC/Allco/Leyerle site in order to determine the presence, extent, and orientation of Federal Emergency Management Agency (FEMA)-mapped floodplains within site boundaries. Flood magnitudes and historic river stages from gauging stations as close as available to the site were examined to obtain an initial sense of the characteristics of on-site flooding. Appendix E provides the methodology and assumptions involved in this assessment.

8.1 Location and Orientation of the Floodplain

Figure 8-1 shows that portions of the site are located within the 100-year and 500-year floodplains. The floodplain areas were obtained from Flood Hazard Boundary Maps and the Town of Halfmoon (Saratoga County) Flood Insurance Study (November 1995) from FEMA's Federal Insurance Administration.

The site is located on the west side of the Hudson River in the Town of Halfmoon. The total area of the site is approximately 74.1 acres (see Table 8-1). Approximately 16.2% (12.0 acres) is mapped as occurring within the base (100-year) floodplain. The areas included within the 100-year floodplain are adjacent to the Hudson River within the NYSCC parcel and to the west of Route 4 within the Allco parcel. River frontage is approximately 2,150 feet. The greatest width of the 100-year floodplain within the site is 810 feet.

Table 8-1 Summary of New York State Canal Corporation/Allco/Leyerle Site and Floodplain Characteristics

Is a portion of the site in the base (100-year) floodplain?	Yes
Total area of the site	74.1 acres (3,228,751 ft^2)
Area of the site within the base (100-year) floodplain	12.0 acres (521,993 ft^2)
Percentage of the site within the base (100-year) floodplain	16.2%
Perimeter of the site (total length)	13,620 ft
Perimeter of the site bordering the Hudson River (river frontage)	~2,150 ft
Greatest width between the outer boundary of the base floodplain and the Hudson River boundary	~810 ft

8.2 100-year Flood

The FEMA maps show the 100-year flood elevation at the site to be between 42 feet and 44 feet National Geodetic Vertical Datum (NGVD). A brief examination of site topography and the FEMA mapping suggests that site elevation characteristics have not changed significantly since the FEMA floodplain modeling and mapping occurred.

The closest gauge station with historic flow data is in Waterford, approximately 2 miles downstream of the site. The Stillwater gauge station is approximately 5 miles upstream. The National Weather Service does not track either of these gauge stations for flood stage.

Flood magnitudes were calculated from twenty-six years of flow data at the Stillwater gage station. Based on this data, the 100-year flood stream flow for this station is 60,258 cubic feet per second (cfs). A flood of this magnitude has not occurred in the twenty-six years of modern data. In that time, there have been two flow events greater than 10-year floods (March 15,1977 and May 4, 1983).

Flood magnitudes were calculated from twenty-one years of flow data at the Waterford gauge station. Based on this data, the 100-year flood stream flow for this station is 80,950 cfs. A flood of this magnitude has not occurred in the twenty-one years of modern data. In that time, there has been one flow event greater than a 10-year flood (May 30,1984).

8.3 Site Flooding

Historic water level data (1916 to 2000) are available from NYSCC Lock 2. Lock 2 is located approximately 1.5 miles upstream of the site. The highest water level at the downstream side of Lock 2 was 46.47 feet NGVD (January 2, 1949). Therefore, based on NYSCC data, the 100-year flood elevation for this site was reached twice (42 to 44 ft NGVD) between 1916 and 2000.

Spot elevations surveyed along the river-land edge of the FCS boundary range from 31.1 feet to 32.0 feet NGVD. The contour information (5-foot intervals) provided with 2002 aerial photography of the site show a 30-foot contour line along the land-river edge. Therefore, the 100-year flood would put the river frontage of the site under approximately 12 feet of water.

While the probability of a 12-foot inundation event (100-year flood) is remote, the NYSCC water level data on the downstream side of Lock 2 provide evidence that flooding on a smaller scale likely occurs almost annually at this site. Portions of the shoreline boundary would have been under approximately 16 feet of water during the maximum high water level on January 2, 1949 and under an average of 3.7 feet of water during each year's maximum flow.

The 10-year flood stage for the site is between 37 feet to 39 feet NGVD. The Flood Insurance Study notes that "heavy rainfall in the spring, combined with snowmelt causes high water and local flooding throughout Saratoga County."

9. Coastal Management Area Assessment

The NYSCC/Allco/Leyerle site is not located in the state-designated coastal zone. Therefore, no direct impacts are expected as a result of the potential use of this site. EPA will prepare an additional phase of its coastal zone consistency assessment and subsequent coastal zone consistency determination, covering potential indirect and cumulative impacts from the operation of sediment processing/transfer facilities, once the Phase 1 and Phase 2 dredging facility locations are selected.

10. Baseline Habitat and Threatened and Endangered Species Assessment

10.1 Site Habitat Description

The NYSCC/Allco/Leyerle site description information is presented in the *Addenda to the Hudson River PCBs Superfund Site Facility Siting Work Plans: Site-Specific Field Investigations of the Final Candidate Sites* (Ecology and Environment September 2003). In brief, the disturbance from historic and current land uses has influenced the availability, extent, and diversity of on-site habitats. The site is situated on the west side of the river and Routes 4 and 32 bisects a portion of the site, delineating the boundary between the NYSCC and Allco parcels. The NYSCC (waterfront) parcel is primarily undeveloped, with both forested and open field areas. The waterfront was used as a dredge spoils disposal area in the early 1900s. Currently two residential dwellings are near the southern end of the parcel.

The inland parcels (west of Routes 4 and 32) contain forested and recently clear-cut areas, and an area near the southern end of the Allco parcel is being developed for commercial purposes. Given the historic and current uses of the site, a large portion of the site (42%) is disturbed or developed. Despite this condition, the Allco and Leyerle (inland) parcels contain relatively large areas of contiguous forest. The majority of habitats on site are composed of mid- (20 to 60 years) to late successional (> 60 years) vegetation communities. Early successional (< 20 years) species dominate the disturbed areas.

Figure 10-1 shows the habitat community types, as defined by Edinger et al. (2002) that are present on the site. Field investigations were conducted between October 7 and 10, 2003 to determine habitat availability within the NYSCC/Allco/Leyerle site and to provide descriptions of existing habitat structure, diversity, and condition. Eleven community types have been mapped as occurring on the 74-acre site; no significant or unique habitats were among them. The predominant communities (relative to total cover across the site) are briefly described below. A description of the different community types from Edinger et al. (2002) is presented in Appendix F.

Appalachian Oak Hickory
The dominant community is the Appalachian oak hickory forest (AOF) community, which comprises approximately 35% of the site. The species composition of the AOF community type is slightly different between the riverfront and the inland portions. The predominant species within the AOF community near the river include red oak, bitternut hickory, black willow, black cherry, and cottonwood. Additional tree species include burr oak, pignut hickory, silver maple, sugar maple, white ash, mulberry, sycamore, slippery elm, and black locust. Predominant shrubs, herbs, and vines include elderberry, gray dogwood, wild grape, wood fern, and ostrich fern. The inland AOF community includes red oak, white oak, shagbark hickory, pignut hickory, and sugar maple. Additional tree species include burr oak, Eastern hop hornbeam, American hornbeam, Eastern white pine, black cherry, white ash, red maple, paper birch, mulberry, and quaking aspen. The inland AOF has a predominantly open understory, characterized by occasional areas containing shrubs and saplings of a similar composition as the overstory community.

Successional Northern Hardwood
The second most prevalent community is the successional northern hardwood (SNH) community. Predominant trees in the SNH are cottonwood, black locust, sugar maple, and black willow. Additional trees include slippery elm, American elm, box elder, silver maple, white ash, American basswood, butternut, black cherry, red oak, and black walnut. The predominant shrubs are honeysuckle and dogwoods (gray and silky). Additional shrub species include green ash, red osier dogwood, elderberry, sumac, and silky dogwood. Common herb species are ostrich fern, wood fern, Virginia creeper, goldenrods, sedges, and jewelweed. The northwestern corner of the inland parcels contained a number of swamp white oak trees. Several areas along the shoreline that had not been disturbed as recently as surrounding areas contained large (> 40 inches diameter at breast height [dbh]) cottonwoods.

Brushy Cleared Land
The brushy cleared land (BCL) community type accounts for approximately 14% of the site (Figure 10-1). This appears to be a result of a recent clear-cutting of this portion of the site. Common herbaceous species in this area are fleabane, witchgrass, Canadian thistle, and common mullein. Shrubs include sumac and honeysuckle. A few red oak trees were left within the clear-cut area.

Other Communities
The SNH/AOF community includes a mix of trees from both the SNH and AOF communities, indicating the probable disturbance of the AOF community at one time. Common species observed in the successional old field community type included broom sedge, goldenrods, sedges, and blackberries. Scattered shrub growth included sumac and dogwoods. The successional shrubland community type was characterized by silky dogwood, honeysuckle, and sumac. Additional shrub species included gray dogwood, white ash, and green ash. The beech maple community includes beech, red maple, sugar maple, Eastern hop hornbeam, black cherry, white oak, pignut hickory, and shagbark

hickory. Understory vegetation was limited to the regeneration of the canopy tree species.

Aquatic communities on the site include the marsh headwater stream community type. The stream is connected to several of the wetland communities found on the site. (Wetland community types on this site are discussed in more detail in Section 7 of this report.) The stream is low gradient and the substrate is dominated by sand and silt. The northern portion of the Hudson River shoreline is shallow (1 to 1.5 feet extending 30 feet from shoreline), with the substrate dominated by gravel and cobbles, with sand more abundant on the southern end. The majority of the northern riparian area contains mature trees extending to the shoreline, with several small pockets of shale beaches. Large woody debris (i.e., fallen, rooted trees) is abundant along the northern portion of the shoreline and absent from the southern end.

Common vegetation species and the community structure of the site have an influence on wildlife occurrences. The availability of forested, shrubland, and old field communities provides a diverse habitat for wildlife species. Incidental wildlife observations included whitetail deer tracks, raccoon tracks, turkey vulture, and a variety of common songbirds.

10.2 Endangered Species Act Issues

Bald eagles were identified as a potential federally and state-listed species that could occur on the site. However, there is no known nesting activity in this area of the river. Coordination and consultation with NYSDEC and the U.S. Fish and Wildlife Service have occurred as part of the facility siting process and for determining the details of a biological assessment for the Hudson River PCBs Superfund Site project. This consultation revealed that the portion of the river in the vicinity of the site is a wintering area for the bald eagle. The biological assessment will address any potential impacts to the bald eagle as a result of the construction and operation of a sediment processing/transfer facility at this site. The biological assessment will include a literature review and any pertinent studies that are related to the habitat near this site as well as life history information on the bald eagle.

Table 3.1-1 Summary of Activities, Hudson River PCBs Superfund Site

	Energy Park/Longe/ NYS Canal Corporation Site	Old Moreau Dredge Spoils Area/NYS Canal Corporation Site	Georgia Pacific/ NYS Canal Corporation Site	NYS Canal Corporation/ Allco/Leyerle Site	Bruno/Brickyard Associates/ Alonzo Site	State of New York/First Rensselaer/ Marine Management Site	OG Real Estate Site
Environmental Investigation – Environmental Sampling	09/29/03 - 09/30/03	09/30/03 - 10/01/03	10/08/03 - 10/09/03	10/01/03 - 10/03/03	10/03/03 - 10/07/03	10/08/03	10/07/03
Environmental Investigation – Temporary Well Installation	09/29/03 - 10/01/03	10/02/03	10/08/03	10/09/03	10/09/03 - 10/10/03	10/03/03 - 10/06/03	10/07/03
Environmental Investigation – Temporary Well Sampling	10/16/03	10/14/03 - 10/16/03	10/13/03 - 10/14/03	10/15/03	10/15/03 - 10/16/03	10/10/03 - 10/15/03	10/15/03
Surveying	10/01/03 - 11/11/03	10/08/03 - 11/11/03	10/09/03 - 10/29/03	10/21/03 - 10/31/03	10/15/03 - 10/29/03	10/21/03 - 11/10/03	11/11/03 - 11/13/03
Geotechnical Investigation	09/29/03 - 10/01/03	NA	10/08/03	10/07/03 - 10/09/03	10/09/03 - 10/10/03	10/03/03 - 10/06/03	NA
Utilities Assessment	09/29/03 - 09/30/03	09/30/03 - 10/01/03	10/08/03 - 10/09/03	10/01/03 - 10/03/03	10/03/03 - 10/07/03	10/08/03	10/07/03
STAAR	10/06/03 - 10/16/03	10/13/03 - 10/30/03	10/11/03 - 10/28/03	10/23/03 - 11/13/03	10/17/03 - 11/05/03	10/25/03 - 11/14/03	11/15/03
Wetland Assessment	09/17/03 - 09/18/03	09/17/03 - 09/18/03	09/19/03 - 10/08/03	10/07/03 - 10/10/03	10/14/03 - 10/15/03	10/13/03	10/15/03
Floodplain Assessment	09/17/03 - 09/18/03	09/17/03 - 09/18/03	09/19/03 - 10/08/03	10/07/03 - 10/10/03	10/14/03 - 10/15/03	10/13/03	10/15/03
Coastal Management Areas	09/17/03 - 09/18/03	09/17/03 - 09/18/03	09/19/03 - 10/08/03	10/07/03 - 10/10/03	10/14/03 - 10/15/03	10/13/03	10/15/03
Baseline Habitat Assessment	09/17/03 - 09/18/03	09/17/03 - 09/18/03	09/19/03 - 10/08/03	10/07/03 - 10/10/03	10/14/03 - 10/15/03	10/13/03	10/15/03
Threatened and Endangered Species Assessment	09/17/03 - 09/18/03	09/17/03 - 09/18/03	09/19/03 - 10/08/03	10/07/03 - 10/10/03	10/14/03 - 10/15/03	10/13/03	10/15/03
IDW Disposal	TBD	TBD	TBD	TBD	TBD	TBD	TBD

Key:

IDW = Investigation-derived waste.
NYS = New York State.
PCBs = Polychlorinated biphenyls.
STAAR = Survey of Terrestrial Archaeological and Architectural Resources
TBD = To be determined.

Table 3.2-1 Summary of Temporary Well Construction, Hudson River PCBs Superfund Site

Site	Well/Piezometer No.	Date Started	Date Completed	Drilling Company	Date Sampled	Depth Drilled (Feet BGS)	Ground Elevation (Feet AMSL)	PVC Well Casing/ Screen I.D. (inches)	Total Depth (Feet TOIC)	TOIC Casing Elevation (Feet AMSL)	Screened (0.010 slot) Interval (Feet BGS)	Sand Interval (Feet BGS)	Seal Interval (Feet BGS)	Stick-up (Feet AGS)
EPL	EPL-GP01	9/29/03	9/29/03	N	10/16/03	25.4	135.11	1	27.4	137.2	15.4-25.4	5-25.4	2-5	2.0
	EPL-GP02	9/29/03	9/29/03	N	10/16/03	25	137.91	1	27.4	140.42	15-25	4-25	2-4	2.4
	EPL-GP03	9/29/03	9/29/03	N	10/16/03	25.1	135.52	1	27.51	137.99	15.1-25.1	4-25.1	0.6-4	2.41
	EPL-GP04	10/1/03	10/1/03	N	10/16/03	25	129.47	1	27.3	131.79	15-25	4-25	2-4	2.3
	EPL-GP05	10/1/03	10/1/03	N	10/16/03	25	132	1	27.5	134.53	15-25	4-25	2-4	2.5
OM	OM-GP01	10/2/03	10/2/03	N	10/16/03	25	157.67	1	27.4	160.19	15-25	4-25	2-4	2.4
	OM-GP02	10/2/03	10/2/03	N	10/16/03	25.4	141.79	1	27.62	144.2	15.3-25.3	4-25.3	2-4	2.32
	OM-GP03	10/2/03	10/2/03	N	10/15/03	25	155.84	1	27.3	158.37	10-25	4-25	2-4	2.3
	OM-GP04	10/2/03	10/2/03	N	10/15/03	25	143.5	1	22.5	146	10-20	4-25	0-4	2.5
	OM-GP05	10/2/03	10/2/03	N	10/14/03	25	133.43	1	27.5	135.93	15-25	4-25	0-4	2.5
GPS	GPS-GP01	10/9/03	10/9/03	N	10/13/03	25	108.4	1	28.15	111.60	15-25	4-25	2-4	3.15
	GPS-GP02	10/8/03	10/8/03	N	10/14/03	9.3	108.68	1	11.8	111.19	4.3-9.3	3-9.3	0.5-3	2.5
	GPS-GP03	10/8/03	10/8/03	N	10/14/03	25.5	102.76	1	27.55	104.76	15.5-25.5	4-25.5	2-4	2.05
	GPS-GP04	10/8/03	10/8/03	N	10/14/03	25.7	112.02	1	28.2	114.48	15.7-257	4-25.7	2-4	2.5
	GPS-GP05	10/8/03	10/8/03	N	10/13/03	25	100.71	1	27.45	103.31	14.85-24.85	4-25	2-4	2.6
	GPS-GP06	10/9/03	10/9/03	N	10/14/03	25	110.76	1	17.5	113.24	5-15	3-15 [A]	1-3	2.5
	GPS-GP07	10/9/03	10/9/03	N	10/14/03	25	112.98	1	22.4	115.38	10-20	3-20[B]	0.5-3	2.4
	GPS-GP08	10/8/03	10/8/03	N	10/13/03	18.5	113.36	1	19.7	114.74	8.5-18.5	3-18.5	1-3	1.2
NCC	NCC-GP01	10/9/03	10/9/03	N	10/15/03	25	48.53	1	25.5	51.02	13-23	4-23[C]	2-4	2.5
	NCC-GP02	10/7/03	10/7/03	N	-	6.9	52.5	Dry hole - no well constructed						
	NCC-GP03	10/9/03	10/9/03	N	10/15/03	22.9	43.56	1	23.65	46.2	11-21	4-22.9	2-4	2.65
	NCC-GP04	10/3/03	10/3/03	N	-	2	65.89	Not accessible by rig, boring was hand-augered						
	NCC-GP05	10/7/03	10/7/03	N	-	11	51.52	Dry hole - no well constructed (same as boring NCC-GT01)						
BBA	BBA-GP01	10/10/03	10/10/03	N	10/15/03	25	131.88	1	18.6	134.39	6-16	4-16 [D]	0.5-4	2.6
	BBA-GP02	10/10/03	10/10/03	N	10/16/03	25	144.41	1	18.55	146.87	6-16	4-18 [E]	0.5-4	2.55
	BBA-GP03	10/9/03	10/9/03	N	10/15/03	18.3	76.45	2	19.62	77.77	3.8-13.8	2.8-18.3	0-2.8	1.32
	BBA-GP04	10/10/03	10/10/03	N	10/15/03	14	77.57	1	16.8	80.38	3.5-13.5	2-14	0.5-2	2.8

Table 3.2-1 Summary of Temporary Well Construction, Hudson River PCBs Superfund Site

Site	Well/Piezometer No.	Date Started	Date Completed	Drilling Company	Date Sampled	Depth Drilled (Feet BGS)	Ground Elevation (Feet AMSL)	PVC Well Casing/	Total Depth (Feet TOIC)	TOIC Casing Elevation (Feet AMSL)	Screened (0.010 slot) Interval (Feet BGS)	Sand Interval (Feet BGS)	Seal Interval (Feet BGS)	Stick-up (Feet AGS)
MM	MM-GP01	10/6/03	10/6/03	N	10/10/03	25	18.73	1	27.4	20.52	15-25	4-25	2-4	2.4
	MM-GP02	10/3/03	10/3/03	N	10/10/03	25	5.87	1	27.6	7.75	15-25	4-25	2-4	2.6
	MM-GP04	10/6/03	10/6/03	N	10/15/03	25	15.50	1	27.4	17.22	14.5-24.5	4-24.5	2-4	2.9
OG	OG-GP01	10/7/03	10/7/03	N	10/15/03	25	10.28	1	17.70	12.94	5.35-15.35	3-16 [E]	1-3	2.35
	OG-GP02	10/7/03	10/7/03	N	10/15/03	25.1	14.26	1	27.35	16.46	15.1-25.1	4-25.1	2-4	2.25
	OG-GP03	10/7/03	10/7/03	N	10/15/03	25	17.95	1	27.45	20.4	15-25	4-25	2-4	2.45

[A] Hole was allowed to collapse to 10.15 feet BGS.
[B] Hole was allowed to collapse to 20 feet BGS.
[C] Hole was allowed to collapse to 23 feet BGS.
[D] Hole was allowed to collapse to 18 feet BGS.
[E] Hole was allowed to collapse to 16 feet BGS.

Key:

AGS = Above ground surface.
AMSL = Above mean sea level.
BBA = Bruno/Brickyard Associates/Alonzo Site.
BGS = Below ground surface.
EPL = Energy Park/Longe/NYS Canal Corporation Site.
GP = Geoprobe temporary well location.
GPS = Georgia Pacific/NYS Canal Corporation Site.
I.D. = Inner diameter.
MM = State of New York/First Rensselaer/Marine Management Site
N = Northstar Drilling.
NCC = NYS Canal Corporation/Allco/Leyerle Site.
NYS = New York State.
OG = OG Real Estate.
OM = Old Moreau Dredge Spoils Area / NYS Canal Corporation Site.
PVC = Polyvinyl chloride.
TOIC = Top of inner casing.

Table 3.2-2 Groundwater and Surface Water Field Measurements
NYS Canal Corporation/Allco/Leyerle Site

Sample ID	Date	pH (s.u.)	Temerature (°C)	Conductivity (mS/cm)	Turbidity (NTU)
Groundwater					
NCC-GP01-GW	10/15/03	6.65	11.5	977.5	148
NCC-GP03-GW	10/15/03	6.56	13.0	2,709	280
Surface Water					
NCC-SW01	10/2/03	6.43	9.2	210.6	4.53
NCC-SW02	10/1/03	6.95	13.5	294.0	3.43
NCC-SW03	10/2/03	6.68	11.0	243.5	4.51
NCC-SW04	10/2/03	7.11	10.4	250.1	7.49
NCC-SW05	10/1/03	7.75	16.3	339.0	6.86
NCC-SW06	10/2/03	7.79	10.6	482.4	11.0

Key:

°C = Degrees Celsius.
GP = Boring location.
GW = Groundwater sample.
ID = Identification.
mS/cm = MicroSiemens per centimeter.
NCC = NYS Canal Corporation/Allco/Alonzo Site.
NTU = Nephelometric turbidity units.
NYS = New York State.
s.u. = Standard units.
SW = Surface water sample.

Table 3.2-3 Summary of Water Level Elevations, NYS Canal Corporation/Allco/Leyerle Site

Well/ Stream Gauge ID	Ground Elevation (ft AMSL)	Reference Elevation (ft AMSL)a	10/15/03		10/22-10/23/03		11/6/03	
			Water Level (ft TOIC)	Water Elevation (ft AMSL)	Water Level (ft TOIC)	Water Elevation (ft AMSL)	Water Level (ft TOIC)	Water Elevation (ft AMSL)
NCC-GP01	48.53	51.02	20.65	30.37	20.39	30.63	20.11	30.91
NCC-GP03	43.56	46.2	15.55	30.65	15.33	30.87	14.10	32.10
NCC-SG01	NA	33.45	NM	NM	3.90	30.86	0.03	30.48

[a] Reference elevation is TOIC for Geoprobes and 3-foot mark on gauge for stream gauge.

[b] Reading from gauge.

Key:

GP = Boring location.
NA = Not applicable.
NM = Not measured.
NCC = NYS Canal Corporation/Allco/Leyerle Site.
NYS = New York State.
SG = Stream gauge location.
TOIC = Top of inner casing.

Table 3.2-4 NYS Canal Corporation/Allco/Leyerle Site Sample Listing, Hudson River PCBs Superfund Facility Siting

							CLP						Non-CLP										Geotechnical Analyses			
							Organics					Inorganics														
Media	Date	Sample Location	CLP Number	Matrix Code	Depth A	Type	TCL VOCs (OLM04.2)	TCL SVOCs (OLM04.2)	TCL Pesticides/PCBs (OLM04.2)	TAL Metals/Mercury (ILM04.1)	TAL Cyanide (ILM04.1)	% Solids (ASTM_D2216)	Chlorinated Herbicides (8151A)	Anions (9056)	TOC (Lloyd Kahn)	Hardness (130.2)	Hexane Extractable Material (9071B)	TCLP VOCs	TCLP SVOCs	TCLP Metals/Mercury	Particle Size (ASTM_D422-63)	Atterberg Limits (ASTM_D4318-00)	Moisture Content (ASTM_D2216-98)	Area of Interest
Surface Soil	10/02/03	NCC-SS01	B14Z3	SO	0-2 in	N		X	X	X	X	X												Coverage
	10/02/03	NCC-SS02	B14Z4	SO	0-2 in	N		X	X	X	X	X												Coverage
	10/02/03	NCC-SS03	B14Z5	SO	0-2 in	N		X	X	X	X	X												Surficial dumping
	10/02/03	NCC-SS04	B14Z6	SO	0-2 in	N		X	X	X	X	X												Surficial dumping
	10/02/03	NCC-SS05	B14Z7	SO	0-2 in	N		X	X	X	X	X												Berm - possible dredge spoils
	10/02/03	NCC-SS06	B14Z8	SO	0-2 in	N		X	X	X	X	X												Low area
	10/02/03	NCC-SS07	B14Z9	SO	0-2 in	N		X	X	X	X	X												Drum area
	10/02/03	NCC-SS08	B1500	SO	0-2 in	N		X	X	X	X	X												Coverage
	10/01/03	NCC-SS09	B1501	SO	0-2 in	N		X	X	X	X	X												Coverage
	10/01/03	NCC-SS10	B1502	SO	0-2 in	N		X	X	X	X	X												Coverage
	10/01/03	NCC-SS11	B1503	SO	0-2 in	M	X	X	X	X	X	X	X				X							Composite sample of 3 locations (A, B, C) adjacent to railroad track (VOC portion was a discrete sample from the location of aliquot A)
Surface Water	10/02/03	NCC-SW01	B14Y7	SW	-	N	X	X	X	X	X			X		X								Low area
	10/01/03	NCC-SW02	B14Y8	SW	-	N	X	X	X	X	X			X		X								Low area
	10/02/03	NCC-SW03	B14Y9	SW	-	N	X	X	X	X	X			X		X								Drainage path
	10/02/03	NCC-SW04	B14Z0	SW	-	N	X	X	X	X	X			X		X								Drainage path
	10/02/03	NCC-SW04/D	B1538	SW	-	FD	X	X	X	X	X			X		X								
	10/01/03	NCC-SW05	B14Z1	SW	-	N	X	X	X	X	X			X		X								Drainage path
	10/02/03	NCC-SW06	B14Z2	SW	-	N	X	X	X	X	X			X		X								Drain path outfall
Sediment	10/02/03	NCC-SE01	B14Y1	SE	0-2 in	N	X	X	X	X	X	X			X									Low area
	10/01/03	NCC-SE02	B14Y2	SE	0-2 in	N	X	X	X	X	X	X			X									Low area
	10/02/03	NCC-SE03	B14Y3	SE	0-2 in	N	X	X	X	X	X	X			X									Drainage path
	10/02/03	NCC-SE04	B14Y4	SE	0-2 in	N	X	X	X	X	X	X			X									Drainage path
	10/01/03	NCC-SE05	B14Y5	SE	0-2 in	N	X	X	X	X	X	X			X									Drainage path
	10/02/03	NCC-SE06	B14Y6	SE	0-2 in	N	X	X	X	X	X	X			X									Drain path outfall
	10/02/03	NCC-SE06/D	B1539	SE	0-2 in	N						X			X									

Key at the end of Table

Table 3.2-4 NYS Canal Corporation/Allco/Leyerle Site Sample Listing, Hudson River PCBs Superfund Facility Siting

							CLP						Non-CLP										Geotechnical Analyses			
							Organics				Inorganics															
Media	Date	Sample Location	CLP Number	Matrix Code	Depth A	Type	TCL VOCs (OLM04.2)	TCL SVOCs (OLM04.2)	TCL Pesticides/PCBs (OLM04.2)	TAL Metals/Mercury (ILM04.1)	TAL Cyanide (ILM04.1)	% Solids (ASTM_D2216)	Chlorinated Herbicides (8151A)	Anions (9056)	TOC (Lloyd Kahn)	Hardness (130.2)	Hexane Extractable Material (9071B)	TCLP VOCs	TCLP SVOCs	TCLP Metals/Mercury	Particle Size (ASTM_D422-63)	Atterberg Limits (ASTM_D4318-00)	Moisture Content (ASTM_D2216-98)	Area of Interest
Geoprobe Borehole Subsurface Soil	10/09/03	NCC-GP01-SB	B1505	SO	22-24	N	X	X	X	X	X	X												Downgradient
	10/07/03	NCC-GP02-SB	B1506	SO	0-2	N	X	X	X	X	X	X												Upgradient
	10/09/09	NCC-GP03-SB	B1507	SO	14-16	N	X	X	X	X	X	X												Downgradient
	10/03/03	NCC-GP04-SB	B1508	SO	21-24 in	N	X	X	X	X	X	X												Upgradient (hand augered)
	10/07/03	NCC-GP05-SB	B1509	SO	2-4	N	X	X	X	X	X	X												Central / Railyard
Geoprobe Temporary Well Groundwater	10/15/03	NCC-GP01-GW	B1510	GW	13-23	N	X	X	X	X	X													Downgradient
	-	NCC-GP02-GW	-	GW	-	N																		Upgradient
	10/15/03	NCC-GP03-GW	B1512	GW	11-21	N	X	X	X	X	X													Downgradient
	-	NCC-GP04-GW	-	GW	-	N																		Upgradient - No water encountered to hand auger refusal
	-	NCC-GP05-GW	-	GW	-	N																		Central / Railyard
Geotechnical Boring Subsurface Soil	10/07/03	NCC-GT01-SB	-	SO	0-2	N															X	X	X	Rail yard
	10/07/03	NCC-GT02-SB	-	SO	0-11[B]	N															X	X	X	Central / Railyard
	10/09/03	NCC-GT03-SB	-	SO	0-26[B]	N															X	X	X	Facility area
Blanks	TBD	NCC-TB01		Field QC		TB	X																	General to accompany surface water samples
	TBD	NCC-TB02		Field QC		TB	X																	General to accompany groundwater samples
IDW	TBD	NCC-WA01	-	WA	-	N												X	X	X				General
	TBD	NCC-WW01	-	WW	-	N												X	X	X				General

[A] Depth in feet below ground surface unless otherwise specifie

[B] Continuous sampling for Moisture Content analysis. The 4-6 foot BGS depth intervals were used for the Particle Size and Atterberg Limits analyses for GPS-GT02 and GPS-GT03, respective

Key:

CLP = Contract Laboratory Protocol
/D = duplicate sample
FD = field duplicate (Type)
GP = Geoprobe boring location
GT = geotechnical boring location
GW = groundwater sample
IDW = investigation-derived waste
in = inch
M = matrix spike/matrix spike duplicate (Type)
N = original sample
NCC = NYS Canal Corporation / Allco / Leyerle site
NYS = New York State
PCB = polychlorinated biphenyl
QA = quality assurance
QC = quality control
SB = subsurface soil
SE = sediment sample
SO = soil sample
SS = surface soil
SVOCs = semivolatile organic compounds
SW = surface water
TBD = to be determined
TCL = target compound list
TCLP = toxicity characteristic leachate procedure
TOC = total organic carbon
VOCs = volatile organic compounds
WA = IDW solid waste
WW = IDW waste water

Key at the end of Table

Table 3.3-1 Analytical Data Summary of Detected Analytes for Surface Soil Samples from the NYS Canal Corporation/Allco/Leyerle Site

Analyte	NYSDEC TAGM 4046 (1)	Eastern USA Background (2)	Sample ID:	NCC-SS01	NCC-SS02	NCC-SS03	NCC-SS04	NCC-SS05	NCC-SS06
			Date:	10/2/2003	10/2/2003	10/2/2003	10/2/2003	10/2/2003	10/2/2003
			Depth:	0 - 2 in	0 - 2 in	0 - 2 in	0 - 2 in	0 - 2 in	0 - 2 in
TCL Semivolatile Organic Compounds (µg/Kg)									
Anthracene	50000	NA		490 U	470 U	520 U	450 U	450 U	300 J
Benzo(a)anthracene	224 or MDL	NA		490 U	470 U	520 U	450 U	450 U	**1300 J**
Benzo(a)pyrene	61 or MDL	NA		490 U	470 U	520 U	450 U	450 U	**1200 J**
Benzo(b)fluoranthene	1100	NA		490 U	470 U	520 U	450 U	450 U	1000 J
Benzo(g,h,i)perylene	50000	NA		490 U	470 U	520 U	450 U	450 U	480 J
Benzo(k)fluoranthene	1100	NA		490 U	470 U	520 U	450 U	450 U	**1300 J**
Carbazole	NA	NA		490 U	470 U	520 U	450 U	450 U	230 J
Chrysene	400	NA		490 U	470 U	520 U	450 U	450 U	**1400 J**
Dibenzo(a,h)anthracene	14 or MDL	NA		490 U	470 U	520 U	450 U	450 U	**220 J**
Di-n-butylphthalate	8100	NA		490 U	470 U	520 U	450 U	450 U	210 J
Fluoranthene	50000	NA		490 U	470 U	520 U	450 U	450 U	2300 J
Indeno(1,2,3-cd)pyrene	3200	NA		490 U	470 U	520 U	450 U	450 U	790 J
Phenanthrene	50000	NA		490 U	470 U	520 U	450 U	450 U	1200 J
Pyrene	50000	NA		490 UJ	470 UJ	520 UJ	450 UJ	450 UJ	2000 J
TCL Pesticide and PCBs (µg/Kg)									
4,4'-DDE	2100	NA		64	4.7 U	5.2 U	4.5 U	4.5 U	7.7 UJ
4,4'-DDT	2100	NA		36 J	4.7 U	5.2 U	4.5 U	4.5 U	7.7 UJ
alpha-Chlordane	540 (3)	NA		2.6 R	2.4 U	2.7 U	2.3 U	2.3 U	4 UJ
Aroclor-1254	1000	NA		560	47 U	52 U	45 U	45 U	77 UJ
Aroclor-1260	1000	NA		58 J	47 U	52 U	45 U	45 U	77 UJ
beta-BHC	200	NA		2.5 U	2.4 U	2.7 U	2.3 U	2.3 U	4 UJ
Dieldrin	44	NA		15	4.7 U	5.2 U	4.5 U	4.5 U	7.7 UJ
Endosulfan I	900	NA		2.7 R	2.4 U	2.7 U	2.3 U	2.3 U	4 UJ
Endrin	100	NA		4.9 U	4.7 U	5.2 U	4.5 U	4.5 U	6.3 J
Endrin Aldehyde	NA	NA		8.4	4.7 U	5.2 U	4.5 U	4.5 U	7.7 UJ

Source: Ecology and Environment, Inc., 2004

Table 3.3-1 Analytical Data Summary of Detected Analytes for Surface Soil Samples from the NYS Canal Corporation/Allco/Leyerle Site

Analyte	NYSDEC TAGM 4046 (1)	Eastern USA Background (2)	Sample ID:	NCC-SS01	NCC-SS02	NCC-SS03	NCC-SS04	NCC-SS05	NCC-SS06
			Date:	10/2/2003	10/2/2003	10/2/2003	10/2/2003	10/2/2003	10/2/2003
			Depth:	0 - 2 in	0 - 2 in	0 - 2 in	0 - 2 in	0 - 2 in	0 - 2 in
TAL Metals and Mercury (mg/Kg)									
Aluminum	SB	NA		7900	7590	10500	8770	7160	4730
Arsenic	7.5 or SB	3-12 (NYS BG)		3.9	5.6	4.8	4.2	4	2.7 B
Barium	300	15-600		76	59.4 B	92.2	81.4	73.9	47 B
Beryllium	0.16 or SB	0-1.75		0.38 B	0.37 B	0.44 B	0.49 B	0.4 B	0.31 B
Cadmium	1 or SB	0.1-1		2 J	0.15 U	0.15 U	0.13 U	0.14 U	4.9 J
Calcium	SB	130-35000 (NYS BG)		4920	13700	17600	3260	3280	7190
Chromium	10 or SB	1.5-40 (NYS BG)		50.3	11.4	14.4	11.4	15	14.2
Cobalt	30 or SB	2.5-60 (NYS BG)		7.7 B	9.7 B	12.7 B	8.6 B	7.2 B	5.1 B
Copper	25 or SB	1-50		25.6 J	29.8 J	26.3 J	15.9 J	18.6 J	55.6 J
Iron	2000 or SB	2000-550000		16700	20500	25300	17800	14600	24100
Lead	SB or 200 - 500	200-500		110	33.8	31.8	33.6	47.2	222
Magnesium	SB	100-5000		3290	6650	12200	3380	2820	2360
Manganese	NA	50-5000		429	633	819	499	402	94.2
Nickel	13 or SB	0.5-25		15.1	21.3	25	13.8	12.7	75.8
Potassium	SB	8500-43000 (NYS BG)		995 B	2150	2910	698 B	405 B	366 B
Selenium	2 or SB	0.1-3.9		0.8 B	0.57 U	0.57 U	0.5 U	0.52 U	1.9 B
Sodium	SB	6000-8000		540 B	1440 B	1720	145 U	149 U	217 U
Vanadium	150 or SB	1-300		17.8	16.1	16.3	17.2	14.6	13.4 B
Zinc	20 or SB	9-50		139	87.9	112	67	67.8	319
Mercury	0.1	0.001-0.2		0.39	0.07 U	0.14	0.14	0.38	0.14 B
Total Cyanide (mg/Kg)									
Cyanide	NA	NA		0.21	0.18 U	0.17 U	0.28	0.17 U	0.28 U

Source: Ecology and Environment, Inc., 2004

Table 3.3-1 Analytical Data Summary of Detected Analytes for Surface Soil Samples from the NYS Canal Corporation/Allco/Leyerle Site

Analyte	NYSDEC TAGM 4046 (1)	Eastern USA Background (2)	Sample ID:	NCC-SS07	NCC-SS08	NCC-SS09	NCC-SS10	NCC-SS11
			Date:	10/2/2003	10/2/2003	10/1/2003	10/1/2003	10/1/2003
			Depth:	0 - 2 in	0 - 2 in	0 - 2 in	0 - 2 in	0 - 2 in
TCL Semivolatile Organic Compounds (µg/Kg)								
Anthracene	50000	NA		480 U	400 U	350 U	390 U	520 U
Benzo(a)anthracene	224 or MDL	NA		480 U	400 U	350 U	390 U	520 U
Benzo(a)pyrene	61 or MDL	NA		480 U	400 U	350 U	390 U	520 U
Benzo(b)fluoranthene	1100	NA		480 U	400 U	350 U	390 U	520 U
Benzo(g,h,i)perylene	50000	NA		480 U	400 U	350 U	390 U	520 U
Benzo(k)fluoranthene	1100	NA		480 U	400 U	350 U	390 U	520 U
Carbazole	NA	NA		480 U	400 U	350 U	390 U	520 U
Chrysene	400	NA		480 U	400 U	350 U	390 U	520 U
Dibenzo(a,h)anthracene	14 or MDL	NA		480 U	400 U	350 U	390 U	520 U
Di-n-butylphthalate	8100	NA		480 U	400 U	350 U	390 U	520 U
Fluoranthene	50000	NA		480 U	400 U	350 U	390 U	520 U
Indeno(1,2,3-cd)pyrene	3200	NA		480 U	400 U	350 U	390 U	520 U
Phenanthrene	50000	NA		480 U	400 U	350 U	390 U	520 U
Pyrene	50000	NA		480 U	400 U	350 UJ	390 UJ	520 UJ
TCL Pesticide and PCBs (µg/Kg)								
4,4'-DDE	2100	NA		4.8 U	4 U	3.5 U	1.5 J	4.2 J
4,4'-DDT	2100	NA		4.8 U	4 U	3.5 U	3.9 U	5.2 U
alpha-Chlordane	540 (3)	NA		2.5 U	2.1 U	1.8 U	2 U	2.7 U
Aroclor-1254	1000	NA		48 U	40 U	35 U	39 U	52 U
Aroclor-1260	1000	NA		48 U	40 U	35 U	39 U	52 U
beta-BHC	200	NA		4	1.8 J	1.8 U	2 U	2.7 U
Dieldrin	44	NA		4.8 U	4 U	3.5 U	3.9 U	5.2 U
Endosulfan I	900	NA		2.5 U	2.1 U	1.8 U	2 U	0.62 J
Endrin	100	NA		4.8 U	4 U	3.5 U	3.9 U	5.2 U
Endrin Aldehyde	NA	NA		4.8 U	4 U	3.5 U	3.9 U	5.2 U

Source: Ecology and Environment, Inc., 2004

Table 3.3-1 Analytical Data Summary of Detected Analytes for Surface Soil Samples from the NYS Canal Corporation/Allco/Leyerle Site

Analyte	NYSDEC TAGM 4046 (1)	Eastern USA Background (2)	Sample ID: / Date: / Depth:	NCC-SS07 10/2/2003 0 - 2 in	NCC-SS08 10/2/2003 0 - 2 in	NCC-SS09 10/1/2003 0 - 2 in	NCC-SS10 10/1/2003 0 - 2 in	NCC-SS11 10/1/2003 0 - 2 in
TAL Metals and Mercury (mg/Kg)								
Aluminum	SB	NA		7530	11100	5590	15600	8850
Arsenic	7.5 or SB	3-12 (NYS BG)		4.8	6.5	5.9	8.3	10
Barium	300	15-600		80	110	41 B	123	131
Beryllium	0.16 or SB	0-1.75		0.43 B	0.59 B	0.33 B	1 B	0.64 B
Cadmium	1 or SB	0.1-1		0.14 U	0.13 U	0.11 U	0.14 U	0.16 U
Calcium	SB	130-35000 (NYS BG)		4550	3270	42800	1220 B	3950
Chromium	10 or SB	1.5-40 (NYS BG)		13.1	13.9	8.2	16.4	12.9
Cobalt	30 or SB	2.5-60 (NYS BG)		7.2 B	9.9 B	8.7 B	23.9	7 B
Copper	25 or SB	1-50		18.5 J	23.1 J	21.3	22.3	31
Iron	2000 or SB	2000-550000		15500	24800	17600	38700	24400
Lead	SB or 200 - 500	200-500		28.7	26.8	18.2	44	54.6
Magnesium	SB	100-5000		3020	4800	14100	3760	2410
Manganese	NA	50-5000		389	831	439	1020	1010
Nickel	13 or SB	0.5-25		12.1	21.9	17.8	19	14.1
Potassium	SB	8500-43000 (NYS BG)		489 B	693 B	558 B	823 B	552 B
Selenium	2 or SB	0.1-3.9		0.62 B	0.49 U	0.41 UJ	0.51 UJ	0.78 BJ
Sodium	SB	6000-8000		157 U	140 U	118 U	148 U	180 U
Vanadium	150 or SB	1-300		15	19.2	9.9 B	29.5	25.4
Zinc	20 or SB	9-50		225	66.8	52.6	69.1	81.8
Mercury	0.1	0.001-0.2		0.09 B	0.06 U	0.05 U	0.07 U	0.14 B
Total Cyanide (mg/Kg)								
Cyanide	NA	NA		0.18 U	0.15 U	0.13 U	0.21	0.49

Source: Ecology and Environment, Inc., 2004

Table 3.3-1 Analytical Data Summary of Detected Analytes for Surface Soil Samples from the NYS Canal Corporation/Allco/Leyerle Site

(1) New York State Department of Environmental Conservation, Technical and Administrative Guidance Memorandum #4046: Determination of Soil Cleanup Objectives and Cleanup Levels, 1994.

(2) Eastern United States background values.

Key:

B = The reported value was less than the Contract Required Detection Limit but greater than or equal to the Instrument Detection Limit.
BG = Background.
/D = Duplicate sample.
ft = Feet.
J = The reported value is an estimated quantity.
JN = The presence of the analyte has been "tentatively identified". The associated numeric value represents the estimated concentration.
MDL = Method Detection Limit
mg/Kg = Milligrams per kilogram.
NA = Not applicable/available.
NCC = NYS Canal Corporation / Allco / Leyerle site.
NYS = New York State.
NYSDEC = New York State Department of Environmental Conservation.
PCB = Polychlorinated biphenyl.
R = The data is unusable.
SB = Site background.
SS = Surface soil sample.
TAL = Target Analyte List.
TCL = Target Compound List.
U = The analyte was analyzed for but not detected at the value reported.
UJ = The analyte was analyzed for but not detected. The reported quantitation limit is approximate and may be inaccurate.
µg/Kg = Micrograms per kilogram.
- = Sample was not analyzed for this parameter.
220 J Shaded cells with bold exceed the NYSDEC screening value (except for metals).

Source: Ecology and Environment, Inc., 2004

Table 3.3-2 Analytical Data Summary of Detected Analytes for Subsurface Soil Samples from the NYS Canal Corporation/Allco/Leyerle Site

Analyte	NYSDEC TAGM 4046 (1)	Eastern USA Background (2)	Sample ID: / Date: / Depth:	NCC-GP01-SB 10/9/2003 22 - 24 ft	NCC-GP02-SB 10/7/2003 0 - 2 ft	NCC-GP03-SB 10/9/2003 14 - 16 ft	NCC-GP04-SB 10/3/2003 21 - 24 in	NCC-GP05-SB 10/7/2003 2 - 4 ft
TCL Volatile Organic Compounds (µg/Kg)								
1,1,2-Trichloro-1,2,2-Trifluoroethane	6000	NA		2 J	10 U	0.7 J	10 U	11 U
2-Butanone	NA	NA		10 U	10 U	11	10 U	11 U
Acetone	200	NA		11 UJ	10 UJ	66	10 U	11 UJ
Carbon Disulfide	2700	NA		10 UJ	10 U	1 J	10 U	11 U
TCL Semivolatile Organic Compounds (µg/Kg)								
Bis(2-ethylhexyl)phthalate	50000	NA		350 U	380 U	100 J	420	73 J
TCL Pesticide and PCBs (µg/Kg)								
beta-BHC	200	NA		1.8 U	2 U	2.1 U	0.78 J	1.8 U
TAL Metals and Mercury (mg/Kg)								
Aluminum	SB	NA		7210	19600	7170	19400	19200
Arsenic	7.5 or SB	3-12 (NYS BG)		2.9	12.7 J	1.5 B	9.9	31.5 J
Barium	300	15-600		45	116	62.1	260	114
Beryllium	0.16 or SB	0-1.75		0.49 B	0.91 B	0.37 B	1.1 B	0.72 B
Calcium	SB	130-35000 (NYS BG)		3120	1500	3030	2590	2890
Chromium	10 or SB	1.5-40 (NYS BG)		10.9	26.6	10.1	22.5	28.4
Cobalt	30 or SB	2.5-60 (NYS BG)		11.4	18.8	6.5 B	17	28.7
Copper	25 or SB	1-50		22	39.9	12.2	37.9 J	57.8
Iron	2000 or SB	2000-550000		20000	39600	13000	38100	44500
Lead	SB or 200 - 500	200-500		9.8	26	13.3	16.7	25.5
Magnesium	SB	100-5000		4930	10100	3350	8490	11800
Manganese	NA	50-5000		396	1140	85.6	454	1330
Nickel	13 or SB	0.5-25		19.9	39.9	11.8	43.6	49.4
Potassium	SB	8500-43000 (NYS BG)		881 B	1190	529 B	1460	1420
Thallium	SB	NA		0.94 U	1.6 B	1.7 U	0.97 U	2.1 B
Vanadium	150 or SB	1-300		14	31.6	15.3	30.2	34.4
Zinc	20 or SB	9-50		65.6	93.4	55.4	97.5	112

Source: Ecology and Environment, Inc., 2004

Table 3.3-2 Analytical Data Summary of Detected Analytes for Subsurface Soil Samples from the NYS Canal Corporation/Allco/Leyerle Site

(1) New York State Department of Environmental Conservation, Technical and Administrative Guidance Memorandum #4046: Determination of Soil Cleanup Objectives and Cleanup Levels, 1994.

(2) Eastern United States background values.

Key:

B = The reported value was less than the Contract Required Detection Limit but greater than or equal to the Instrument Detection Limit.
BG = Background.
/D = Duplicate sample.
ft = Feet.
in = Inches.
J = The reported value is an estimated quantity.
JN = The presence of the analyte has been "tentatively identified". The associated numeric value represents the estimated concentration.
MDL = Method Detection Limit
mg/Kg = Milligrams per kilogram.
NA = Not applicable/available.
NCC = NYS Canal Corporation / Allco / Leyerle site.
NYS = New York State.
NYSDEC = New York State Department of Environmental Conservation.
PCB = Polychlorinated biphenyl.
R = The data is unusable.
SB = Site background.
-SB = Subsurface soil sample.
TAL = Target Analyte List.
TCL = Target Compound List.
U = The analyte was analyzed for but not detected at the value reported.
UJ = The analyte was analyzed for but not detected. The reported quantitation limit is approximate and may be inaccurate.
µg/Kg = Micrograms per kilogram.

Source: Ecology and Environment, Inc., 2004

Table 3.3-3 Analytical Data Summary of Detected Analytes for Surface Water Samples from the NYS Canal Corporation/Allco/Leyerle Site

Analyte	NYSDEC CLASS D (1)	Sample ID: / Date:	NCC-SW01 10/2/2003	NCC-SW02 10/1/2003	NCC-SW03 10/2/2003	NCC-SW04 10/2/2003	NCC-SW04/D 10/2/2003	NCC-SW05 10/1/2003	NCC-SW06 10/2/2003
TAL Metals and Mercury (µg/L)									
Aluminum	NA		107 B	19 U	19 U	19 U	19 U	231	40.3 B
Barium	NA		57 B	52.2 B	28.9 B	28.9 B	30 B	52.9 B	36.5 B
Calcium	NA		34800	42200	33500	37300	37500	51400	53000
Chromium	CV		1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.2 B
Cobalt	110 for A(A) (g)		1.4 U	1.7 B	2.4 B	1.4 U	1.4 U	1.4 U	1.4 U
Copper	CV		9.6 B	3 B	1.2 B	1.2 B	2.4 B	1.2 U	1.2 U
Iron	300 for A(A)		4500	333	1240	51.7 B	63.8 B	683	133
Lead	CV		2.8 B	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U
Magnesium	NA		9000	12100	9870	11300	11400	14000	16000
Manganese	NA		108	20.5	422	151	156	110	34.4
Nickel	CV		3.6 B	3.3 B	2 B	1.8 U	3 B	2.2 B	3.5 B
Potassium	NA		2080 B	2040 B	1240 B	1310 B	1270 B	1860 B	2140 B
Selenium	NA		1.9 U	1.9 U	1.9 U	3.1 BJ	1.9 U	1.9 U	1.9 U
Sodium	NA		2380 B	3270 B	4120 B	4870 B	4230 B	4990 B	27600 J
Vanadium	190 for A(A)		2.9 B	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U
Zinc	CV		44.5 J	24.4 J	21.7 J	19.3 B	21 J	23.9 J	21.9 J
Anions (mg/L)									
Chloride	NA		1.4	3.81	1.48	5.31	5.32	5.86	50.9
Fluoride	CV		0.164	0.102	0.125	0.122	0.13	0.179	0.14
Nitrate-N	NA		0.0982 J	0.104	0.131	0.100 U	0.100 U	0.100 U	0.251
Sulfate	NA		15.5	52.9	5.84	3.38	3.4	24.7	19.6
Hardness (mg/L)									
Hardness (As $CaCO_3$)	NA		310	310	305	250	235	360	330

Source: Ecology and Environment, Inc., 2004

Table 3.3-3 Analytical Data Summary of Detected Analytes for Surface Water Samples at the NYS Canal Corporation/Allco/Leyerle Site

(1) New York State Department of Environmental Conservation, Technical and Operational Guidance Series #1.1.1: Class D Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, 1998.

(g) Guidance value used.

Key:

A(A) = Standard/guidance value is for the protection of fish survival (fresh waters).

A(C) = Standard/guidance value is for the protection of fish propagation (fresh waters).

B = The reported value was less than the Contract Required Detection Limit but greater than or equal to the Instrument Detection Limit.

CV = Value calculated based on hardness as per NYSDEC TOGS 1.1.1, 1998.

/D = Duplicate sample.

J = The reported value is an estimated quantity.

JN = The presence of the analyte has been "tentatively identified". The associated numeric value represents the estimated concentration.

mg/L = Milligrams per liter.

NA = Not applicable/available.

NCC = NYS Canal Corporation / Allco / Leyerle site.

NYSDEC = New York State Department of Environmental Conservation.

SW = Surface water sample.

TAL = Target Analyte List.

U = The analyte was analyzed for but not detected at the value reported.

UJ = The analyte was analyzed for but not detected. The reported quantitation limit is approximate and may be inaccurate.

µg/L = Micrograms per liter.

Source: Ecology and Environment, Inc., 2004

Table 3.3-4 Analytical Data Summary of Detected Analytes for Sediment Samples from the NYS Canal Corporation/Allco/Leyerle Site

Analyte	NYSDEC Screening Criteria (1), (2)	Sample ID: Date:	NCC-SE01 10/2/2003	NCC-SE02 10/1/2003	NCC-SE03 10/2/2003	NCC-SE04 10/2/2003	NCC-SE05 10/1/2003	NCC-SE06 10/2/2003	NCC-SE06/D 10/2/2003
TCL Volatile Organic Compounds (µg/Kg)									
Chloromethane	NA		85 UJ	59 UJ	37 UJ	25 UJ	0.7 J	11 U	- -
Trichlorofluoromethane	NA		85 UJ	59 UJ	37 UJ	25 UJ	18 U	0.4 J	- -
TCL Semivolatile Organic Compounds (µg/Kg)									
Di-n-octylphthalate	NA		860 J	1600 UJ	1100 UJ	770 UJ	580 U	420 U	- -
Fluoranthene	CV		2200 UJ	1600 UJ	240 J	770 UJ	580 U	420 U	- -
Pyrene	CV		2200 UJ	1600 UJ	250 J	770 UJ	580 UJ	420 UJ	- -
TCL Pesticide and PCBs (µg/Kg)									
4,4'-DDE	NA		15 J	16 UJ	3.6 J	7.7 UJ	5.8 U	4.2 UJ	- -
4,4'-DDT	CV		22 UJ	26 J	11 UJ	7.7 UJ	5.8 U	4.2 U	- -
Endrin	CV		22 UJ	3.9 J	11 UJ	7.7 UJ	5.8 U	4.2 U	- -
Endrin Aldehyde	NA		22 UJ	35 J	11 UJ	7.7 UJ	5.8 U	4.2 UJ	- -

Source: Ecology and Environment, Inc., 2004

Table 3.3-4 Analytical Data Summary of Detected Analytes for Sediment Samples from the NYS Canal Corporation/Allco/Leyerle Site

Analyte	NYSDEC Screening Criteria (1), (2)		Sample ID:	NCC-SE01	NCC-SE02	NCC-SE03	NCC-SE04	NCC-SE05	NCC-SE06	NCC-SE06/D
			Date:	10/2/2003	10/1/2003	10/2/2003	10/2/2003	10/1/2003	10/2/2003	10/2/2003
	NYSDEC Screening Criteria (1)		Sample ID:	NCC-SE01	NCC-SE02	NCC-SE03	NCC-SE04	NCC-SE05	NCC-SE06	NCC-SE06/D
Analyte	Lowest effect (2)	Severe effect (2)	Date:	10/2/2003	10/1/2003	10/2/2003	10/2/2003	10/1/2003	10/2/2003	10/2/2003
TAL Metals and Mercury (mg/Kg)										
Aluminum	NA	NA		1510	2270 J	5670	10700	10200	7570	- -
Arsenic	6.0	33		1.6 U	1.8 UJ	2.7 B	6.8	5.7	5.4	- -
Barium	NA	NA		52.6 B	123 J	112	257	117	80.5	- -
Beryllium	NA	NA		0.18 B	0.22 BJ	0.43 B	0.68 B	0.57 B	0.4 B	- -
Cadmium	0.6	9		0.44 B	0.2 UJ	0.2 B	0.18 U	0.15 U	0.13 U	- -
Calcium	NA	NA		7150	9400 J	5190	6100	6890	3240	- -
Chromium	26	110		2.7 B	5.5 J	8	12.1	13	10.4	- -
Cobalt	NA	NA		0.72 B	0.57 UJ	6.6 B	10.3 B	13.1 B	9 B	- -
Copper	16	110		16.2 J	16.9 J	23.6 J	20 J	28.6	19 J	- -
Iron	20000	40000		2110	1920 J	11400	25200	23800	21900	- -
Lead	31	110		52.8	32.9 J	26.5	31.2	14.8	15.3	- -
Magnesium	NA	NA		736 B	1150 BJ	2300	3600	5970	4490	- -
Manganese	460	1100		24	27.7 J	429	3990	387	835	- -
Nickel	16	50		4.6 B	4.3 BJ	14.2 B	22.4	23.1	18.3	- -
Potassium	NA	NA		76.3 B	145 BJ	388 B	1300 B	727 B	787 B	- -
Selenium	NA	NA		1.5 B	0.77 UJ	1.1 B	0.68 U	0.58 UJ	0.51 U	- -
Sodium	NA	NA		198 U	221 UJ	211 U	624 B	167 U	352 B	- -
Vanadium	NA	NA		10.1 B	6.3 BJ	14.1 B	19.8	16.2	12.6 B	- -
Zinc	120	270		49.6	46.1 J	89.1	108	68.9	63.6	- -
Total Cyanide (mg/Kg)										
Cyanide	NA	NA		0.85 U	0.58 U	0.43	0.79	0.21 U	0.17 UL	- -
Total Organic Carbon (mg/Kg)										
Total Organic Carbon	NA	NA		250000	240000	170000	61000	8400	8100	8600
Percent Solids (%)										
Percent Solids	NA	NA		14	21	32	41	58	72	- -

Table 3.3-4 Analytical Data Summary of Detected Analytes for Sediment Samples from the NYS Canal Corporation/Allco/Leyerle Site

(1) New York State Department of Environmental Conservation, Division of Fish, Wildlife and Marine Resources, Technical Guidance for Screening Contaminated Sediments, 1999. The benthic aquatic life chronic toxicity protection level was used.

(2) As per the 1999 NYSDEC Guidance, the screening criteria for organic contaminants in sediments are calculated based on sample Total Organic Carbon concentration. However, two levels of risk are established for metals contamination in sediments (Lowest Effect Level and Severe Effect Level).

Key:

B = The reported value was less than the Contract Required Detection Limit but greater than or equal to the Instrument Detection Limit.

CV = Value calculated based on total organic carbon as per NYSDEC Guidance.

/D = Duplicate sample.

J = The reported value is an estimated quantity.

JN = The presence of the analyte has been "tentatively identified". The associated numeric value represents the estimated concentration.

L = The identification of the analyte is acceptable; the reported value may be biased low. The actual value is expected to be greater than the reported.

mg/Kg = Milligrams per kilogram.

NA = Not applicable/available.

NCC = NYS Canal Corporation / Allco / Leyerle site.

NYS = New York State.

NYSDEC = New York State Department of Environmental Conservation.

PCB = Polychlorinated biphenyl.

R = The data is unusable.

SE = Sediment sample.

TAL = Target Analyte List.

TCL = Target Compound List.

U = The analyte was analyzed for but not detected at the value reported.

UJ = The analyte was analyzed for but not detected. The reported quantitation limit is approximate and may be inaccurate.

µg/Kg = Micrograms per kilogram.

% = Percent.

- = Sample was not analyzed for this parameter.

Source: Ecology and Environment, Inc., 2004

Table 3.3-5 Analytical Data Summary of Detected Analytes for Groundwater Samples from Temporary Wells at the NYS Canal Corporation/Allco/Leyerle Site

Analyte	NYSDEC CLASS GA (1)	Sample ID: Date: EPA MCLs (2)	NCC-GP01-GW 10/15/2003	NCC-GP03-GW 10/15/2003
TAL Metals and Mercury (µg/L)				
Antimony	3	6	9.2 U	11.2 B
Barium	1000	2000	23.8 B	27.8 B
Beryllium	3 (g)	4	0.15 B	0.19 B
Calcium	NA	NA	144000	294000
Chromium	50	100 (4)	1 U	1.6 B
Cobalt	NA	NA	2.9 B	4.2 B
Copper	200	1300 (a)	1.2 B	1 U
Magnesium	35000 (g)	NA	46800	167000
Manganese	300 (3)	50 (s)	80.2	583
Nickel	100	NA	2.3 U	2.5 B
Potassium	NA	NA	2620 B	12200 J
Sodium	20000	NA	15500 J	25700 J
Zinc	2000 (g)	5000 (s)	31.6	26

Source: Ecology and Environment, Inc., 2004

Table 3.3-5 Analytical Data Summary of Detected Analytes for Groundwater Samples from Temporary Wells at the NYS Canal Corporation/Allco/Leyerle Site

(1) New York State Department of Environmental Conservation, Technical and Operational Guidance Series #1.1.1: Class GA Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, 1998.

(2) EPA National Primary and Secondary Drinking Water Standards, 2002.

(3) Screening value is for sum of Iron and Manganese is 500 µg/L.

(4) Screening value for total chromium.

(a) Action level is used in lieu of MCL.

(g) Guidance value used.

(s) Secondary standard used.

Key:

B = The reported value was less than the Contract Required Detection Limit but greater than or equal to the Instrument Detection Limit.

/D = Duplicate sample.

EPA = Environmental Protection Agency.

GP = Boring.

GW = Groundwater sample.

J = The reported value is an estimated quantity.

MCL = Maximum Contaminant Level.

NA = Not applicable/available.

NCC = NYS Canal Corporation / Allco / Leyerle site.

NYSDEC = New York State Department of Environmental Conservation.

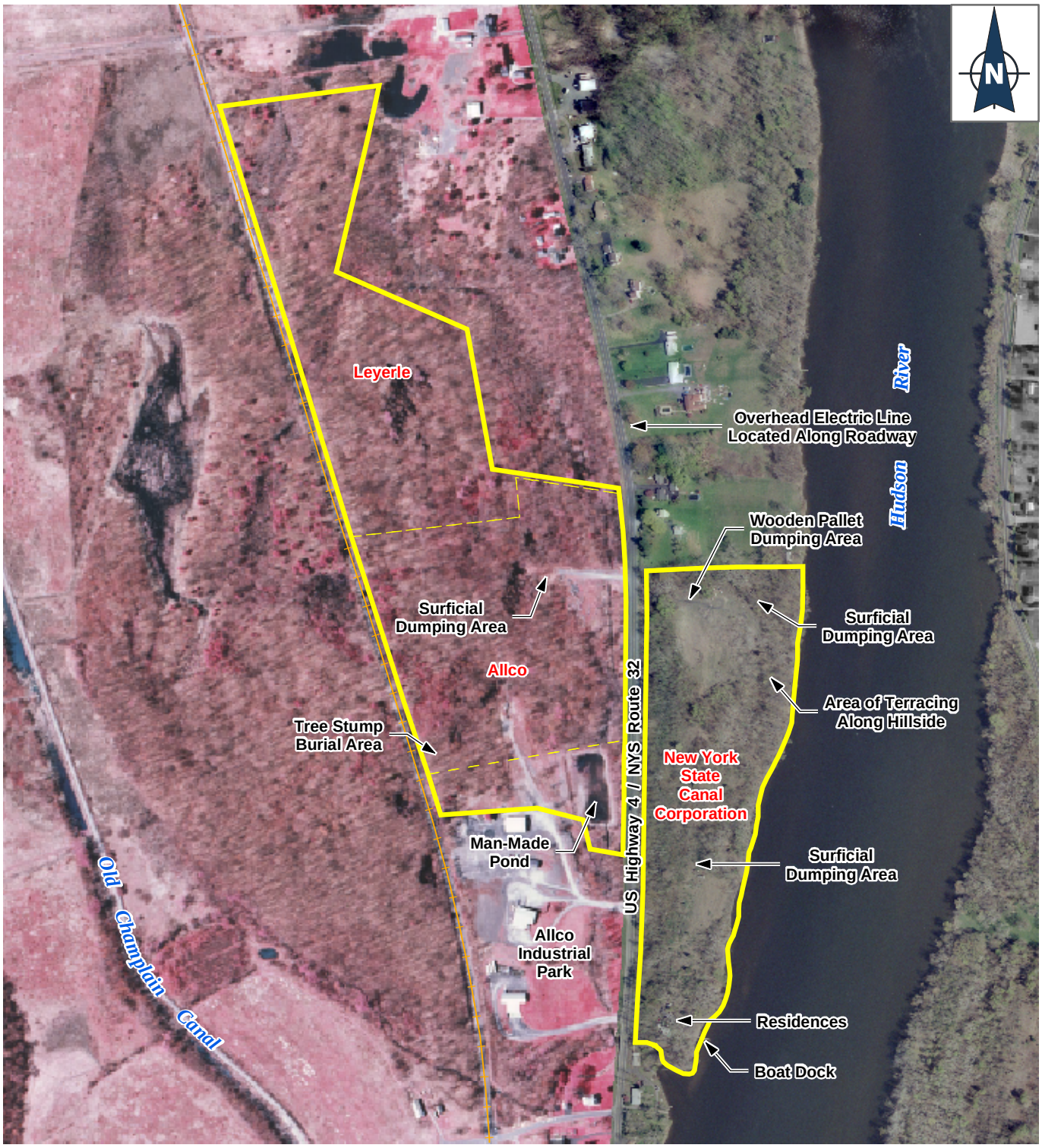
TAL = Target Analyte List.

U = The analyte was analyzed for but not detected at the value reported.

µg/L = Micrograms per liter.

Source: Ecology and Environment, Inc., 2004

SOURCE; ECOLOGY & ENVIRONMENT, INC. 2003;



LEGEND

- Approximate Site Boundary
- Tax Parcel Boundary
- Active Railroad

Hudson River PCBs SUPERFUND SITE

Figure 2-1
Key Site Features
New York State Canal Corporation / Allco / Leyerle

500 250 0 500 1,000 Feet

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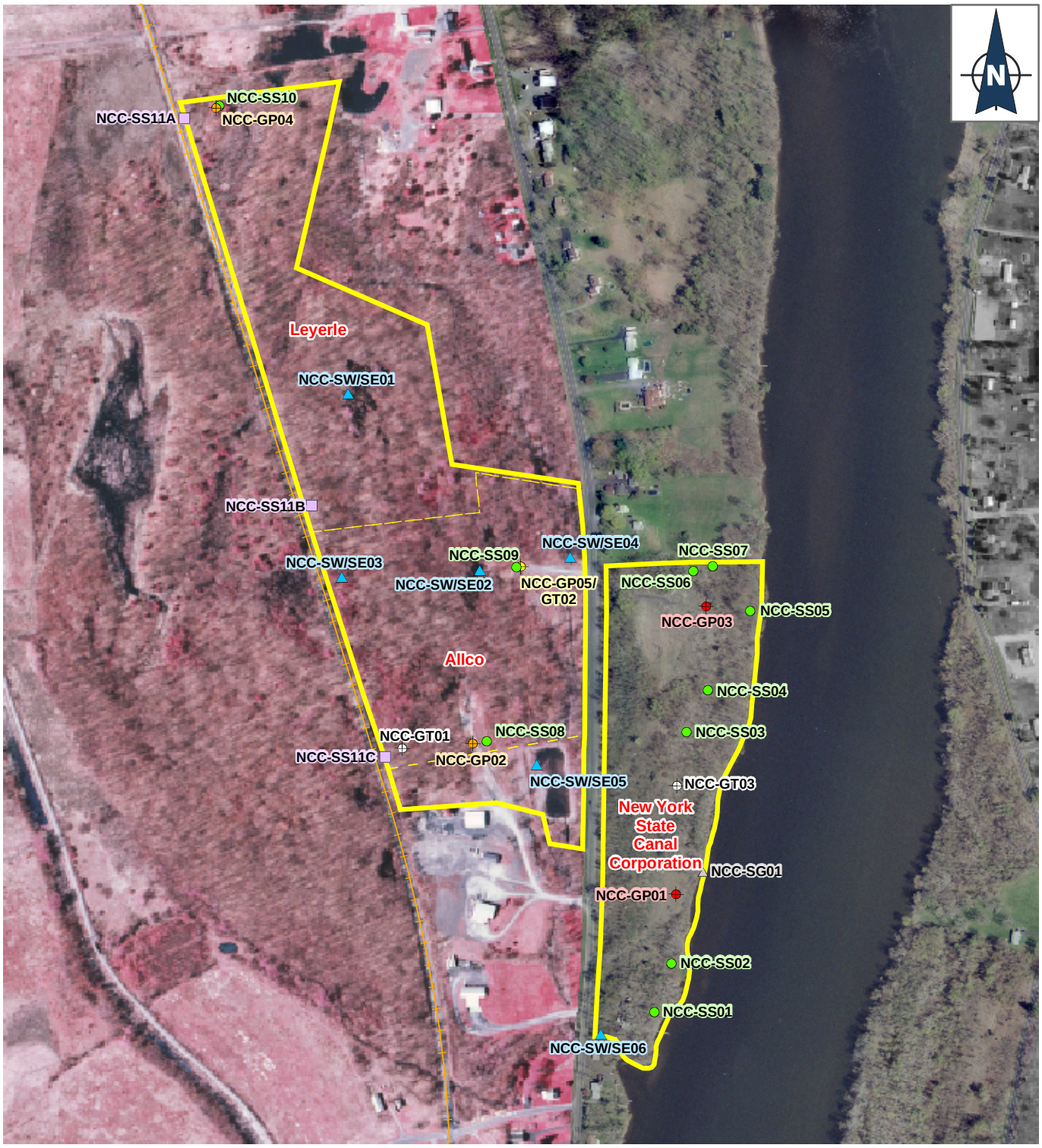
SOURCE; ECOLOGY & ENVIRONMENT, INC. 2003;



LEGEND

- Geoprobe Soil Boring
- Geoprobe Soil Boring & Temporary Well
- Geoprobe & Geotechnical Boring
- Geotechnical Boring
- Surface Soil
- Soil Sample Adjacent to Railroad
- Surface Water / Sediment
- Stream Gauge
- Railroads
- Potential Site Boundary

Hudson River
PCBs SUPERFUND SITE

Figure 3-1
Sample Locations
New York State Canal Corporation / Allco / Leyerle

500 250 0 500 1,000 1,500
Feet

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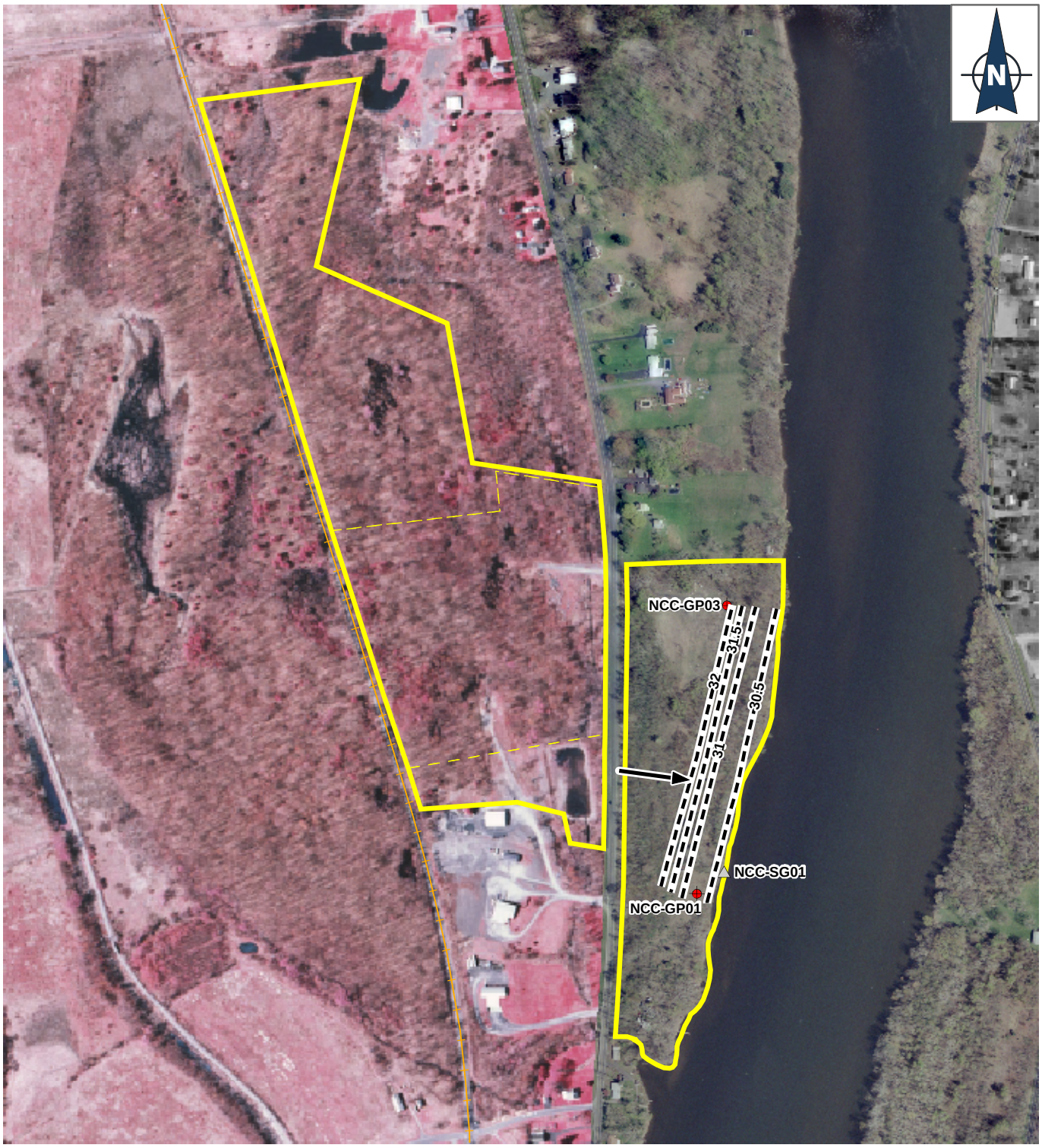

LEGEND

- Groundwater Contour
- Temporary Well
- Stream Gauge
- Railroad
- Potential Site Boundary
- Direction of Groundwater Flow

Water Level Elevations Measured on 11/6/2003
0.5 ft. Contour Interval

Hudson River
PCBs SUPERFUND SITE

Figure 3-2
Overburden Groundwater Contour Map
New York State Canal Corporation / Allco / Leyerle

500 250 0 500 1,000 Feet

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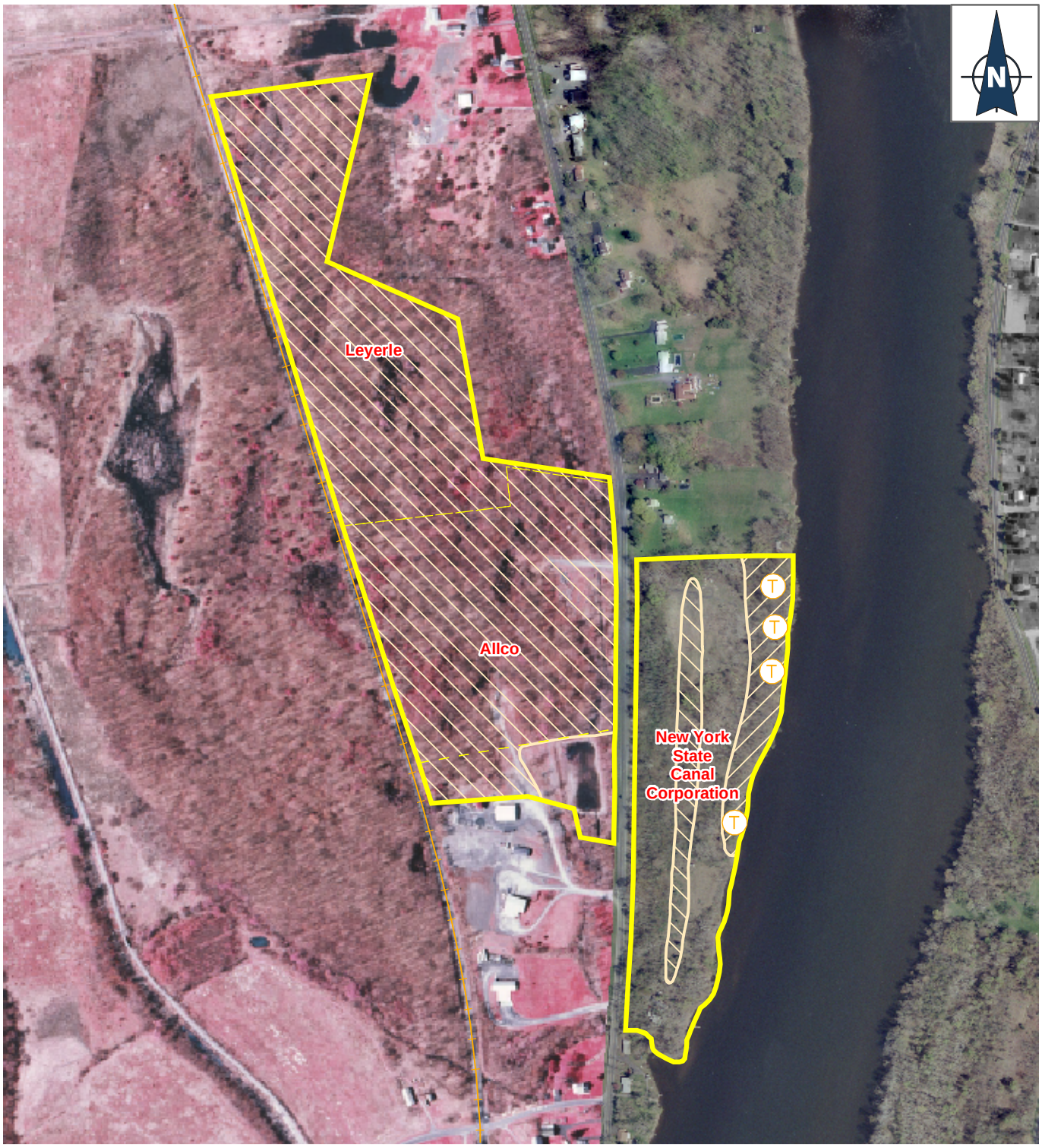

LEGEND

- Potential Site Boundary

Archaeological Testing Method

- Backhoe Test
- Shovel Test (not completed)
- Backhoe & Shovel Test
- (T) Backhoe Trench Locations

Hudson River PCBs SUPERFUND SITE

Figure 6-1
Field Sampling Areas
Phase I B Cultural Resources Investigation
New York State Canal Corporation / Allco / Leyerle

500 250 0 500 1,000
Feet

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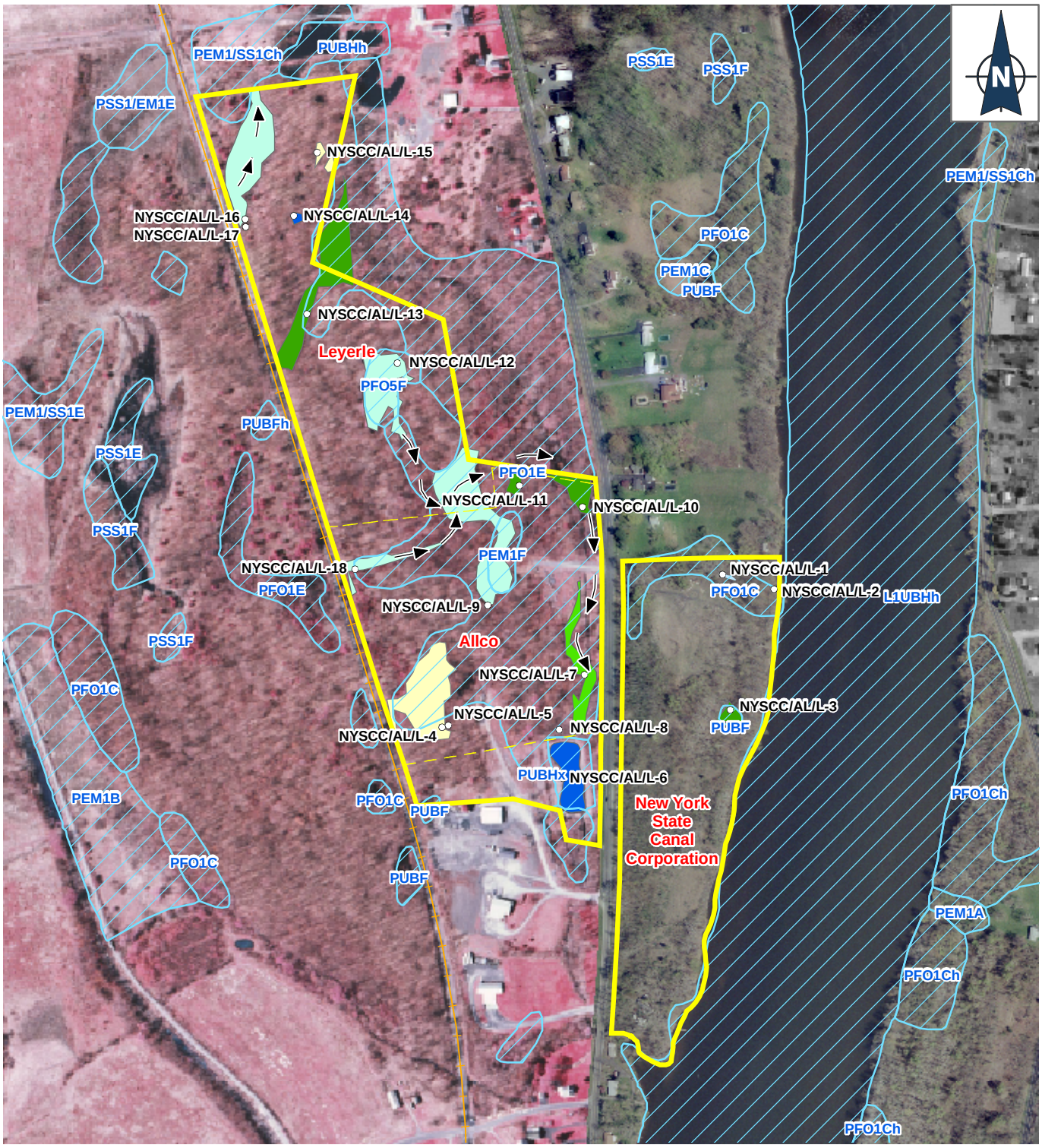

LEGEND

- NYS DEC Mapping
- National Wetland Inventory Mapping

Delineated Wetlands

- Emergent
- Forested
- Forested / Emergent
- Forested / Scrub-Shrub
- Open Water / Emergent
- Open Water / Forested
- Observation Plots
- Direction of Drainage Flow

Hudson River PCBs SUPERFUND SITE

Figure 7-1
Wetland Locations
New York State Canal Corporation / Allco / Leyerle

500 250 0 500 1,000 Feet

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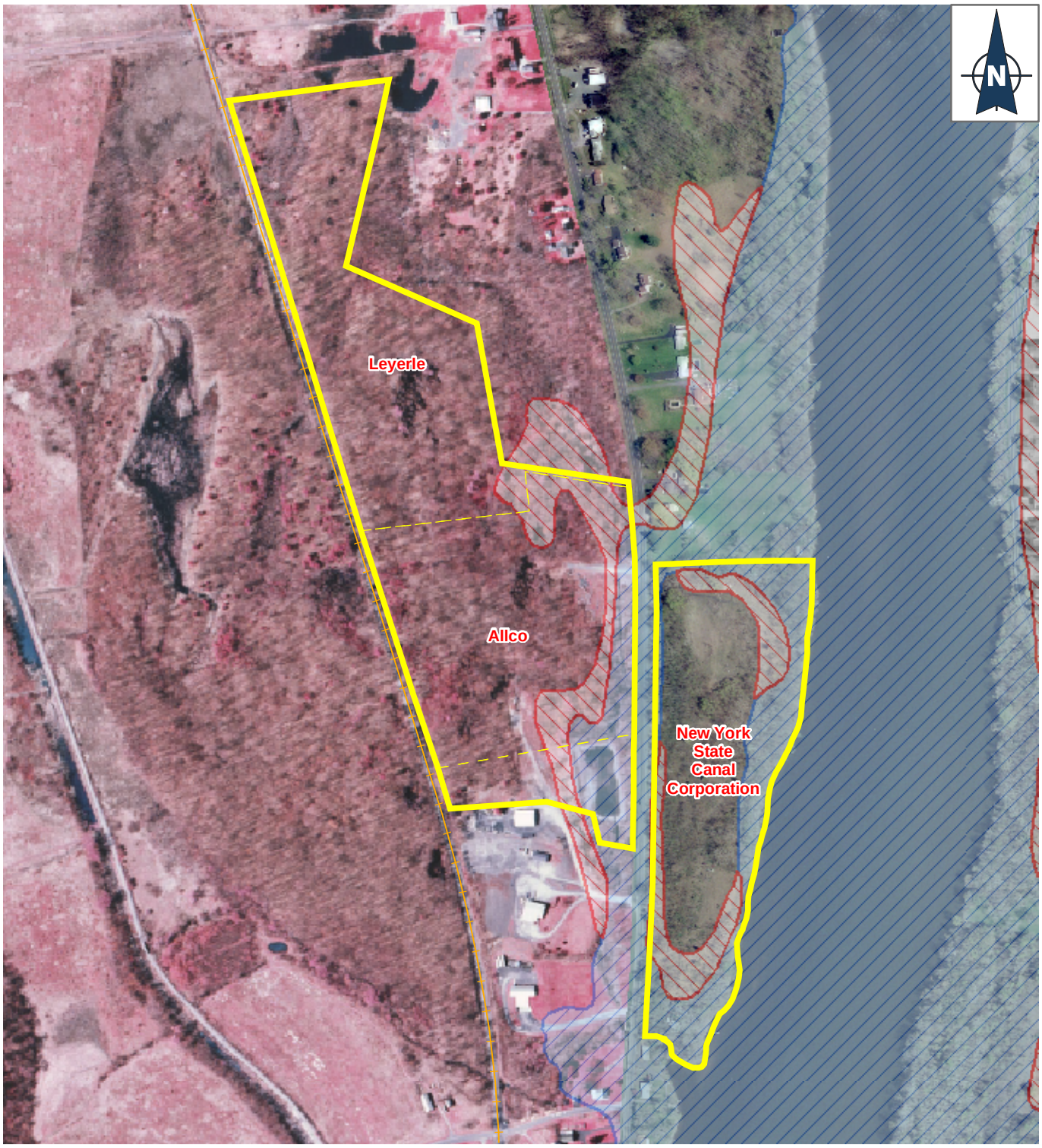

LEGEND

- Potential Site Boundary
- Tax Parcels

FEMA Floodplain

- 100 Year Floodplain
- 500 Year Floodplain

Hudson River
PCBs SUPERFUND SITE

Figure 8-1
FEMA Floodplain Mapping
New York State Canal Corporation / Allco / Leyerle

500 250 0 500 1,000
Feet

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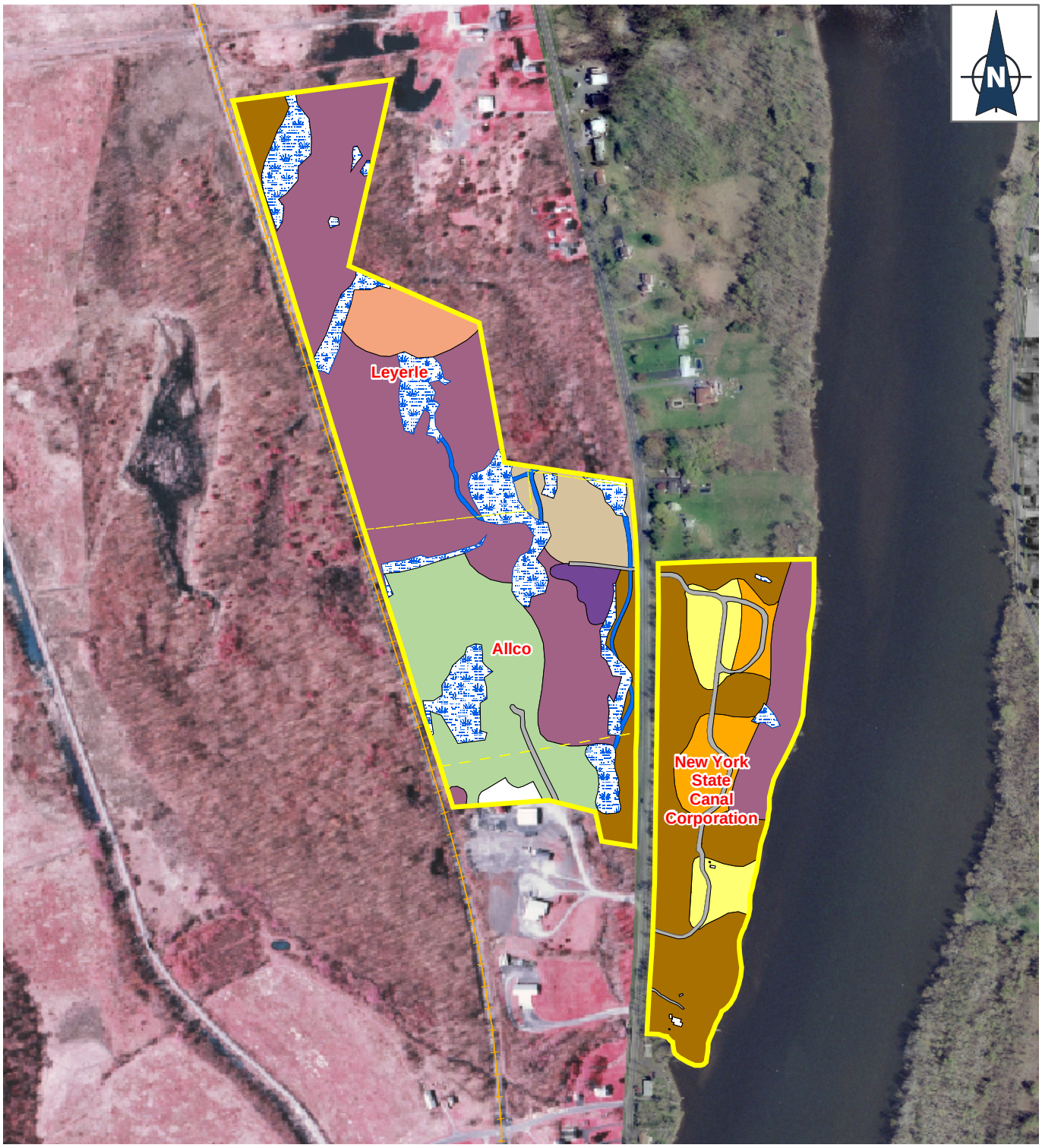

Ecological Communities

- Unpaved Road
- Wetland
- Successional Northern Hardwoods (SNH)
- Successional Old Field
- Successional Shrubland
- Appalachian Oak-Hickory Forest (AOF)
- SNH / AOF
- Beech-Maple Mesic Forest
- Brushy Cleared Land
- Marsh Headwater Stream
- Rural Structure Exterior
- Construction / Road Maintenance Spoils

Hudson River
PCBs SUPERFUND SITE

Figure 10-1
Site Ecological Communities
New York State Canal Corporation / Allco / Leyerle

500 250 0 500 1,000
Feet

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